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**PERSPECTIVES ON INCLUSION.
MINI RESEARCH CARRIED OUT WITHIN THE TRAINING
PROGRAM
„EDUCATION IN THE SCHOOL FOR ALL”**

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Abstract: *Recently, reforms and legislative initiatives in the field of education place an increasing emphasis on providing equal learning opportunities to all individuals. Education for all has become a major priority of educational systems, being centered on equity, participation and respect for diversity. As a trainer in the training program entitled „Education in school for all”, I undertook a mini-research on inclusive institutional cultures during March 2022. The mentioned training program, approved by OMEC no. 3189/ 07.02.2020, with a number of 25 transferable credits, was developed by the House of the Teachers Body of Bihor County and aimed at the following skills: the development and expansion of transversal skills regarding interaction and communication with the social environment and the pedagogical environment, assuming responsibilities on organizing, leading and improving the strategic performance of professional groups, self-control and reflective analysis of one's own activity and others. The paper presents a mini-research based on the analysis and interpretation of the data obtained following the application of a questionnaire to one of the groups of teachers who participated in the program "Education in the school for all".*

Key words: *training courses; inclusive education; inclusive school; teacher trainin.*

Didactic competence and inclusive competence

Educational systems have the obligation to ensure the development of competences for all members of society, being necessary to ensure the successful professional and social insertion of each person in contemporary society. Education for competences is a challenge in all segments of the educational system, representing the indicators of

success in all fields of activity.

C. Delory (2002) considers competence as an integrated set of knowledge, skills and attitudes that allows the subject, faced with a category of situations, to adapt, solve problems and carry out projects.

H. A. Rosencrantz and B.J. Biddler (1964, after S. Marcus, 1999) understand competence as “the ability to behave in a specific way, in a social situation, in order to produce empirically demonstrable effects, approved in the environment in which it operates.” The authors also state that the variables that highlight professional competence are motives, knowledge, affective experiences, but also experience, personality traits, relationship skills.

Bocoş frames competences as part of the content of the educational process along with knowledge, skills, capabilities, strategies, aptitudes. Competence represents an individual or collective characteristic of selecting, mobilizing, combining and using efficiently, in a given context, an integrated set of knowledge, skills and attitudes. (Bocoş et al, 2016).

Referring to the competences of the teaching staff, Constantin Cucuș believes that the most important is the effect that these competences produce over time at the level of the learners, materialized in what the student knows, what he does or what he is at a given moment. (Cucuș, C., 2013)

According to Ioan Neacșu, teaching competence includes:

- organizational and structuring competences (organizing the class, the activity, structuring the contents, etc.);
- communication distribution competences (requesting answers up front or requesting interactive answers);
- decision-making and evaluative competences (directing practical, cognitive activity, etc.);
- competences for demonstrating the formative potential (stimulating behaviors for direct expression of critical opinion, etc.);
- competences related to the socio-affective climate (influences of the teacher in the sphere of the student's personality);
- competences to stimulate creativity (Neacșu, 1990)

In the opinion of I. Bontaș (1995), teaching competence is materialized in notable performances, being the expression of pedagogical mastery, which presupposes the capacity of a teacher to think, design, organize and lead the training process efficiently and creatively, in the skill of acting appropriately in the spirit of the educational objectives that must be met. This dimension of teaching activity should not be confused with teaching technique or with the skill of using the most efficient methods and procedures.

The evolution of contemporary society requires placing the components

of didactic competence (communicative competence, informational competence, instrumental competence, teleological competence, normative competence, decisional competence, appreciative competence) in an intercultural framework. Inclusive competence thus constitutes an interpersonal dimension, closely linked to the psychosocial component of didactic competence. So that, beyond being scientifically and psychopedagogically competent, the intercultural educator is a shaper of interhuman and inclusive relations.

Accredited training program School Education for All

The accredited training program Education in School for All, was an accredited program No. OMEC 3189/ 2020, with a number of 25 transferable professional credits, provided by the House of the Teaching Staff of Bihor County, classified in category 2, which aimed at the following competencies: development and expansion of transversal competencies regarding interaction and communication with the social environment and the pedagogical environment, assuming responsibilities regarding the organization, management and improvement of the strategic performance of professional groups, self-control and reflective analysis of one's own activity and others.

In 2022, I had the opportunity to be a trainer of the House of the Teaching Staff of Bihor County within the accredited training program Education in School for All for a group of 34 students, module Particularities of educating children with SEN.

The program was structured in six modules as follows: Inclusion - conceptual approaches, particularities of educating children with SEN, typology of disadvantaged groups, school for all: role and responsibility, alternative strategies in the educational process, prevention and combating school dropout in the School for All. Each module was presented by a different trainer, a total of 6 trainers, and at the end of the program they were required to develop and submit a portfolio for evaluation.

Research methodology

Research purpose:

Studying the impact of teachers' participation in continuing education programs on the development of inclusive education competencies.

General hypothesis:

Teachers' participation in the accredited training program "Education in School for All" contributes to improving teachers' competencies for inclusive education

Objectives:

Investigating the level of development of teachers' competencies for

inclusive education.

Participants: 26 teachers, 23 of whom were women and 3 were men, from different educational institutions.

Instrument used: questionnaire

Research methodology: I launched the invitation for all 34 participants in the training course to complete the questionnaire. It was not an imposed topic, it was a questionnaire that was not part of the training course program. In this context, only 26 of the 34 participants completed the questionnaire.

Data analysis and interpretation:

From the total of 15 questions asked, we selected 5 items to present in this paper. The results are highlighted below. The questions comprising questions with 3 answer options (yes, no and I don't know/don't answer)

Question 1. Do you think that the social and school inclusion of children with SEN is more appropriate in a group/class in a mainstream school?

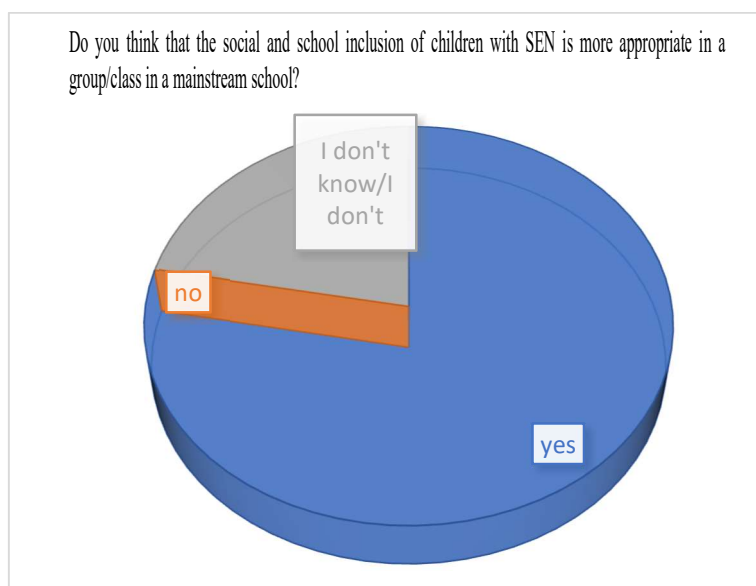


Figure 1. Opinions on the inclusion of children with SEN in a group/class in mainstream school

According to the graph presented, 78% of respondents consider it appropriate to integrate children with SEN into mainstream education units, while 22% chose the answer option "don't know/don't answer" and no respondent checked the negative answer option.

Question 2 Does the school program allow activities dedicated to students with SEN?

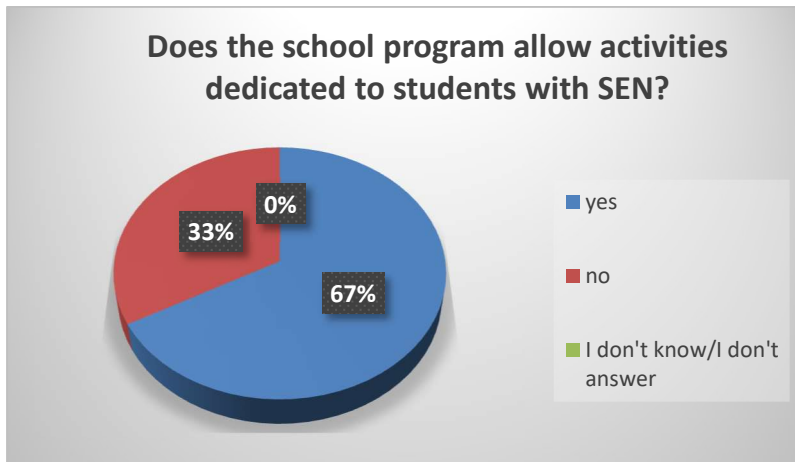


Figure 2. Does the school program allow activities dedicated to students with SEN?

For the second question regarding the opportunities for activities dedicated to students with SEN in the school program, 67% of respondents believe that educational institutions offer activities dedicated to students with SEN through the school program, while 33% of them believe that such activities are not provided at the level of educational institutions.

Question 3 - Are special schools a more favorable context for children/students with SEN?

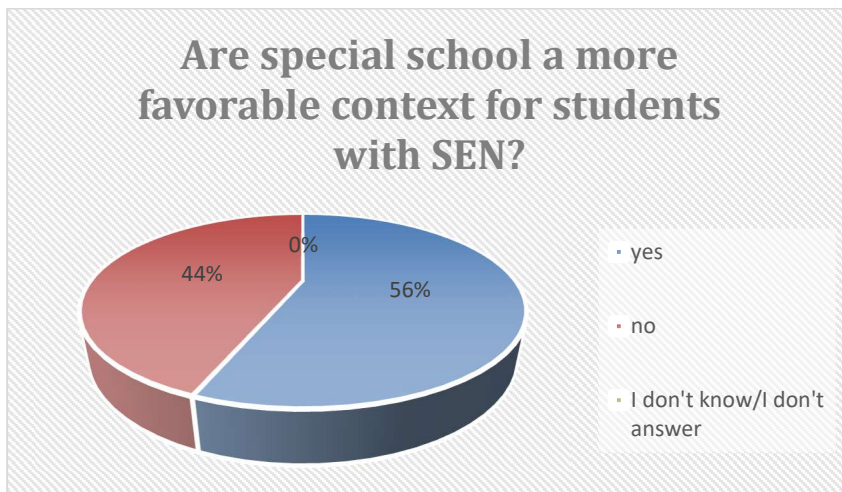


Figure 3. Special schools a more favorable context for children/students with SEN

Question 4- Do you believe that a successful education is based on communication between school and family?

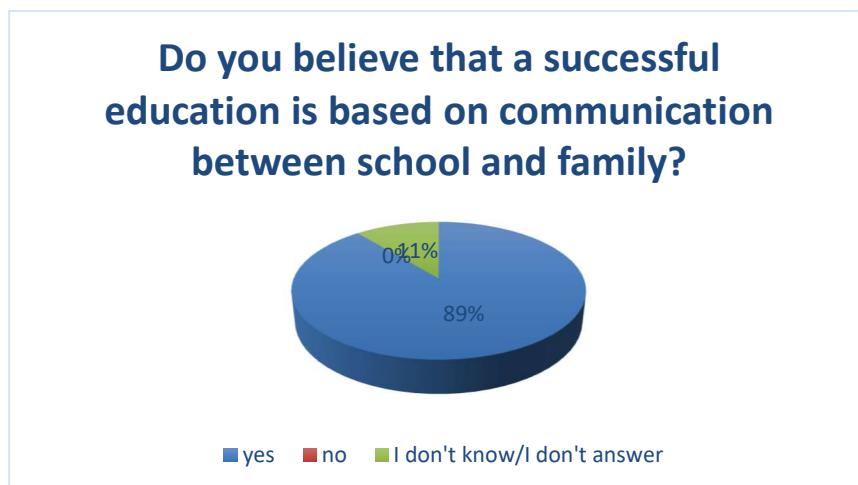


Figure 4. Communication between school and family

Analyzing the answers to question 4, we observe that 89% of respondents consider communication between school and family important and essential, education being based on this relationship, while 11 respondents preferred not to answer this question.

Question number 5, the last question chosen to be presented in this mini-research, it is an question with multiple answer regarding suggestions and recommendations for improving the support teacher's work. To this question, respondents had the opportunity to choose from several answer options, which we present below: teachers in integrated schools to be more tolerant, to work differentiatedly, reducing the number of children assigned to a support teacher, school orientation of children with autism and severe mental retardation in special schools, providing specific materials for the itinerant teacher in the office, more hours for integrated students with SEN, the existence of special classes in mainstream schools, not exceeding the number of 12 integrated children for a support teacher, to approve support teacher positions for schools in rural areas. The processes for each answer option chosen are presented in the graph below:

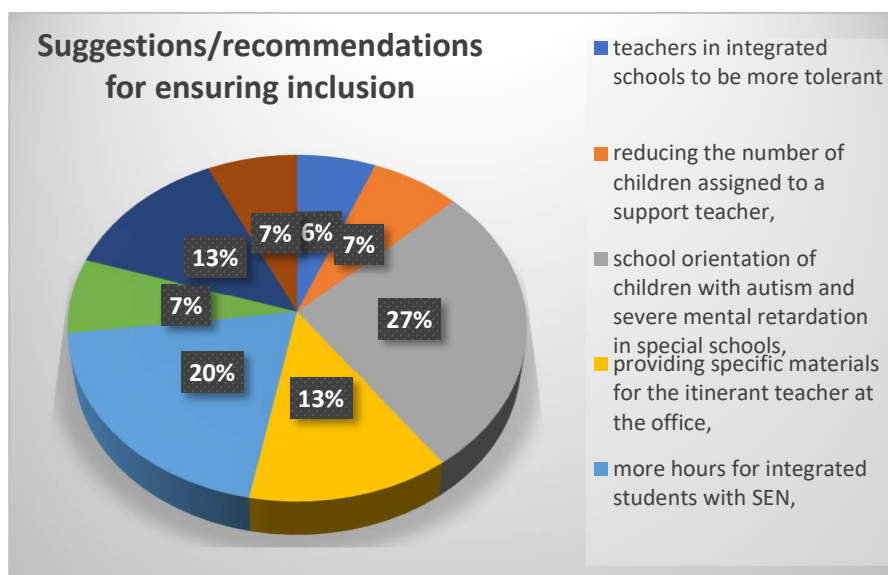


Figure 5. Suggestions/recommendations for ensuring inclusion

Conclusions

From the point of view of the teachers surveyed, we observe the following results:

- most of them consider that the social and school integration of children with SEN is beneficial in mainstream education;
- communication between the family and the educational unit is an essential element that contributes to ensuring a successful education;
- to some extent, the school program in mainstream education units allows for the provision of activities specifically dedicated to students with SEN;
- special schools represent an alternative and a more favorable context for students with SEN;
- more hours are needed for integrated children/students with SEN;
- reducing the number of children/students assigned to a support teacher;
- providing specific materials for the activity with integrated students with SEN;
- limiting the number of children/students assigned to a support teacher to 12;
- organizing special classes in mainstream schools;
- school orientation of children with autism and severe mental deficiency towards special schools.

Inclusive education represents the educational ideal that underlies a school open to all regardless of the difficulties encountered, capable of

adapting to the needs of each individual child, who is in a continuous process of change and adaptation to the needs of children. In Romania, despite the efforts initiated through inclusive policies, we are still faced with a lack of sensitivity towards the issues of children with SEN, a lack of specialized knowledge and skills in the field of integrated education, a lack of human resources and materials necessary to carry out this extensive process.

References

- Bocoş, M.-D., Răduţ-Taciu, R., Stan, C., & Andronache, D.-C. (2016). Praxiological Dictionary of Pedagogy (Vol. I). Piteşti: Paralela 45, p. 221
- Bontaş, I., (1995). Pedagogy (2nd edition), ALL Educational Publishing House, Bucharest.
- Cucoş C. (2013) Education: experience, reflections, solutions. Iaşi: Ed. Polirom, p. 18-20
- Delory, C., (2002), L'évaluation des compétences dans l'enseignement fondamental. De qui parle-t-on?, in vol. L'évaluation des compétences chez l'apprenant. Pratiques methods est fondements, pp. 23-24
- Marcus, S., (coord.), (1999), Teaching competence – psychological perspective, ALL Pedagogic Publishing House, Bucharest, p.20
- Neacşu, I., (1990) Training and learning, Scientific Publishing House, p.243-244.

**PARENTS' PERSPECTIVE ABOUT THE USE OF DIGITAL
TECHNOLOGY BY CHILDREN IN A RURAL COMMUNITY
– BIHOR COUNTY, ROMANIA -**

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Abstract: *The access and use of digital technology by rural pupils are two very little explored issues in Romania. Research on these issues is sporadic, targeted and there is no sustained research over time - longitudinal research - to track the factors that determine changes in the use of technology by pupils in these environments. In an article published in 2021 we made a brief synthesis of the Romanian literature regarding the use of Information and Communication Technology (ICT) by students (Cosma, 2021). The studies showed an increase in access to digital devices, but also its use for different purposes. The most accessed devices were phone and laptop or computer, followed by tablet. The main online activities were school activities (reports, presentations, projects, homework, etc.) and entertainment activities (music, videos, video games, etc.). In the meantime, in Bihor county, digital equipment has been purchased through the funding lines opened for town halls and schools for this purpose. We mention here Roșia , Budureasa , Remetea etc. In Lăzăreni the project "Improvement of digital content and systemic ICT infrastructure in the field of e-education in Lăzăreni, Bihor County" was implemented in the period 20216 - 20227. This project purchased tablets for students, laptops for teachers and other digital equipment totaling 1.170.673,63 lei. The use of this equipment, however, is dependent on the teachers' competence to effectively use this equipment, applications and platforms, but also on the parents' support, motivation and perception of the usefulness of digital technology in the use of it by children. Through this study, we aim to analyze these issues: to explore parents' perceptions of the benefits and risks to which pupils are exposed when using information and communication technology (ICT).*

Key words: *digital technology; rural; perspective.*

Rural pupils' use of technology. Literature Syntheses*a) Use of information and communication technology by pupils, parents and teachers*

Equipping schools with digital equipment and using technology also stand out as strategies to attract students to school. Three schools in Bihor County have been equipped with interactive whiteboards through the National Program for the Reduction of School Dropout (PNRAS): Secondary School No. 1 in Avram Iancu; Secondary School "Lucreția Suci" in Oradea and Secondary School No. 1 in Batăr.

Moreover, although the teachers from Bihor County stood out in 2020 as "the most active" in the "Teacher Online" course, a weakness of the course strategy is that it was not followed up by any subsequent monitoring of the implementation of the knowledge gained.

Parents' perspectives on the usefulness of digital technology and their children's online activities, however, have been little studied - especially those in rural areas. Too little emphasis has been placed on the importance of parents' perspectives on their children's use of technology, although studies in the literature point to the undeniable effects it can have. Some of the negative effects of technology use found in the literature include: *physical effects*: obesity, musculoskeletal and/or sleep problems (Dhanain, 2023; Nahar et al., 2018); *cognitive and social effects*: potential developmental problems and reduced interpersonal skills (Mashrah, 2017), *academic effects*: low academic performance (Juhaňák et al., 2018; Kim et al., 2017; Vincze, 2018). However, technology can also have positive effects, encouraging *creativity, critical thinking and bonding* among children when used appropriately (Dhanain, 2023).

b) Rural parents' perception of children's use of ICT

Although online activities can keep children engaged in learning, they can improve both their ICT skills (Gyeltshen, 2022) and school performance (Mensah, Quansah, Oteng and Nii Akai Nettey, 2023), some parents have expressed concern about the quality of education conducted through digital technology, especially in terms of monitoring children's academic progress. Online platforms, games and activities constitute a controlled environment for monitoring students' learning activities, with data clearly showing a significant correlation with school performance (Zaldivar, Pardo, Burgos and Kloos, 2012). Effective implementation of ICT requires taking into account different learning and assessment styles in the design of digital tools and adapting activities to different learning environments and communication modalities (Bulbarela, 2008). Therefore, despite its potential, the use of digital technology alone cannot fully capture the complexity of students' progress, requiring a more complex, comprehensive approach that

combines the use of technology with psycho-pedagogical expertise. The pandemic has increased the role of parents in monitoring their children and emphasized the need for them to train/develop their digital skills (Lestari, Yulianingsih, Widodo, and Widyaswari, 2022; Ludji and Marpaung, 2021; Matthes, Thomas, Stevic, and Schmuck, 2021; Susetyo, 2021). Despite recognizing the need for online education during the pandemic, parents generally prefer traditional schooling (Joseph, Kuppuswamy and Shetty, 2021; Sumathi, 2021). They also support the importance of supporting students with lower academic performance and providing regular feedback especially in online learning environments (Cavalcanti, Mello, Miranda and Freitas, 2020). Although parents support the use of ICT for educational purposes, they are concerned about the potential risks and threats to children's cybersecurity (Vandoninck, d'Haenens and Šmahel, 2014). In rural areas, parents perceive the internet as having more negative than positive effects on their children's health, with many expressing concerns about excessive internet use by their children (Lo, Lai, Ng and Wang, 2020). Children are accessing electronic devices at increasingly younger ages (Holloway, Green and Brady, 2013), parental mediation is essential as unsupervised internet use can lead to risky behaviors (Ly et al., 2021; Vannucci, Simpson, Gagnon and Ohannessian, 2020; Wang and Lee, 2020). To cope with these challenges, parents use various control and limiting strategies such as rule setting, both positive (e.g., explaining, talking) and negative (e.g., disagreeing, criticizing) forms of mediation, or restrictions of face- to-face interactions with peers, friends, or strangers (Livingstone et al., 2017; Rodríguez-de- Dios, van Oosten and Igartua, 2018).

Studies, which are precarious, on how rural Romanian parents perceive the use of ICT by their children show that rural people were often hesitant to embrace modernization and faced various difficulties in adapting to mandatory ICT tools for education during the COVID-19 pandemic: lack of access to digital devices, interrupted internet connection and absence of peripheral digital devices (such as copiers, scanners, etc.), all of which lead to significant challenges in the educational context (Grigore-Filip, 2021; Néma, 2024). These technical shortcomings have inhibited students' ability to fully engage in digital activities, thus limiting their access to online resources, communication opportunities and productivity.

In conclusion, although the pandemic has led to the widespread equipping of schools with high-performance digital tools and facilitated the development of teachers' digital competences and the rapid adaptation of students to the online learning environment, parents' perceptions of these transformations have been insufficiently documented in the Romanian context. Therefore, the present study,

although limited in terms of sample size, represents an attempt to explore this under-researched dimension.

Methodology

Objectives:

- Exploring the perceptions of parents of rural pupils on the use of digital technology in general (in learning or entertainment activities);
- Analysis of the constants and differences in parents' perceptions of the benefits of students' use of digital technology, by comparison with the literature;
- Developing a research culture of parents by administering/completing scientific questionnaires to the rural population.

Sample presentation:

The sample of subjects consisted of 14 parents of 3rd grade pupils and 25 parents of 6th grade pupils, from Secondary School No. 1, loc. Lăzăreni, com. Lăzăreni, jud. Bihor.

The subjects' responses were collected between February and April of the 2023-2024 school year by means of a questionnaire (Appendix 1.), their participation in the study was voluntary, with the possibility of answering *or not* to any question in the questionnaire.

Analysis procedure:

In spite of the small sample size, the study aimed to analyze the differences in parental responses according to the child's level of schooling. The responses were processed and analyzed using the specialized software NVivo 12, a tool that allows a systematic and rigorous approach to the interpretation of textual data. The open-ended nature of the questionnaire items determined the choice of this qualitative analysis tool, offering advanced functionalities for coding, categorizing and interpreting the unstructured responses of the study participants. Thus, the responses were structured along thematic dimensions and analyzed using the thematic analysis method and Grounded Theory.

Dimensions explored through parental questioning:

Participants' responses were analyzed and structured into seven thematic dimensions as follows:

Dimension 1. Student use of technology;

Dimension 2. Advantages and disadvantages of students' use of technology;

Dimension 3. Types of activities children do online;

Dimension 4. Methods used by parents to distract students from excessive use of technology;

Dimension 5. Parents' difficulties in managing appropriate use of technology by children;

Dimension 6. Benefits of children's use of technology as seen by parents;

Dimension 7. Parents' recommendations on how to manage students' use of information and communication technology.

Exploratory analysis

Dimension 1. Student use of technology:

Class III	Class VI

Table 1.1. Word clouds of parents' answers on why their children use digital technology, by grade level

We note in the table above that the parents of the students in the two classes responded similarly to the question of how their child uses technology. According to the answers, third graders use digital devices for school and games, while sixth graders - at first glance - use technology predominantly for school, with entertainment being a more diluted option

Dimension 2. Advantages and disadvantages of students' use of technology:

Benefits	Disadvantages

Table 1.2. Word cloud of parents' answers on the advantages and disadvantages of their children's use of digital technology

In the parents' view, we observe from the table above, the advantages of using digital technology lie in the ease of learning and access to new information ("learning a foreign language", "quick access to information", etc.), while the physical effects are the main disadvantages: "it damages the eyes", "it damages the vision", "over time there can be problems", etc. In the absence of clear information about what can be done with technology and the results that can be achieved, the participants' answers on the two aspects are slightly superficial.

It should be noted that these parents work in rural areas, the necessity and urgency of this need - of training/developing digital skills - not being felt to the same extent as in urban areas (Hindman, 2000; Islam et al., 2023; Javakhishvili and Vazsonyi, 2021; Ziliak, 2019).

Dimension 3. Types of activities children do online:

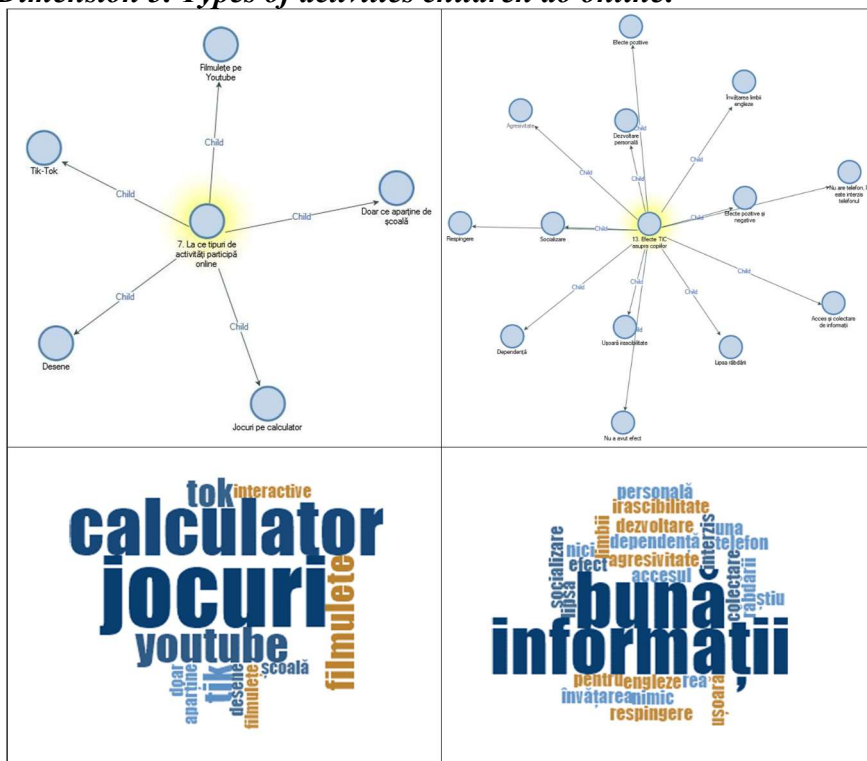


Table 1.3. Word clouds and activity classes mentioned by parents in terms of the types of activities their children do online

For the two questions looking at the types of activities pupils engage in online ("What types of activities do children participate in online?") and how these activities affect children ("Effects of ICT on children"), parents' answers show slightly mixed results. According to them, the main types of activities pupils do online are watching videos on Tik-Tok and YouTube and playing computer games, less (animated) cartoons or

'school stuff'; and it affects them in a positive sense, with easy access to information.

There is a certain lack of awareness of the effects of technology, a lack of correlation and consistency of answers from one question to another. On the other hand, we could deduce that, in the parents' opinion, the fact that their children watch videos and play for hours on end has "good effects". A few exceptions to this rule are 'aggression', 'rejection' and 'addiction', which would require further analysis.

Dimension 4. Methods used by parents to distract students from excessive use of technology:

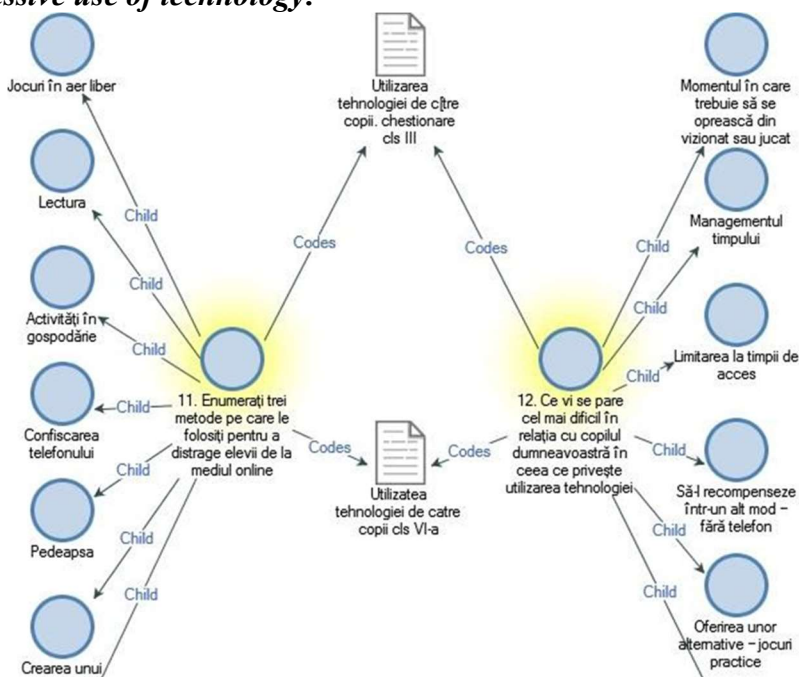


Fig. 1.1. Comparison of the categories of participants' answers regarding the methods used to distract children from the online environment and the challenges they face in managing children's online time

When asked about the methods they use to distract their children from online, parents' responses ranged from "playing outdoors", "reading", "household activities", "giving responsibility" and "creating a schedule" to "confiscating the phone" or "punishment".

We can observe that, unlike in urban areas, in rural areas there is a more diversified range of opportunities and "responsibilities" due to the characteristic constitution of the household: dwelling, yard and garden.

Dimension 5. Difficulties encountered by parents in managing children's appropriate use of technology:

Although the specifics of activities in rural areas may be more diversified than in urban areas, the opportunities do not seem to be "to children's liking" when it comes to choosing between them and digital technology. When asked about the most difficult aspects of managing children's time online, parents reported situations where they "have to stop watching or playing", time spent online, rewarding and offering alternatives to non-media games and activities.

Dimension 6. Benefits of children's use of technology as seen by parents:

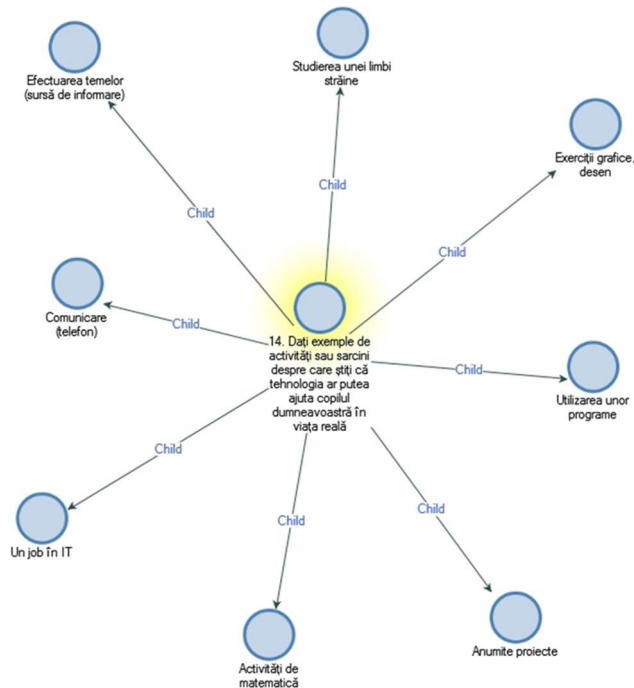


Fig. 1.2. Ranking of responses on the benefits of children's use of technology as seen by parents

Although online activities are predominantly for entertainment (see sections above), parents recognize the (rather) potential benefits of using technology by referring to professional IT activities (e.g. 'a job in IT', 'using platforms' or simply for 'communication') or school activities (e.g. 'maths activities', 'some projects', 'doing homework', 'studying a foreign language' or 'graphing, drawing').

We draw attention to the apparent inconsistency between the responses regarding these benefits and the activities mentioned above. Moreover, parents have no information about the skills that entertainment activities and online games can train or develop in children. These include reaction speed, attention to detail, concentration, strategic thinking, creativity development, etc., all of which have the potential to be beneficial or risky for children, depending on how the technology is used and the awareness of internal psychological processes (memory, attention,

thinking, etc.)

Dimension 7. Parents' recommendations on how to manage students' use of information and communication technology:

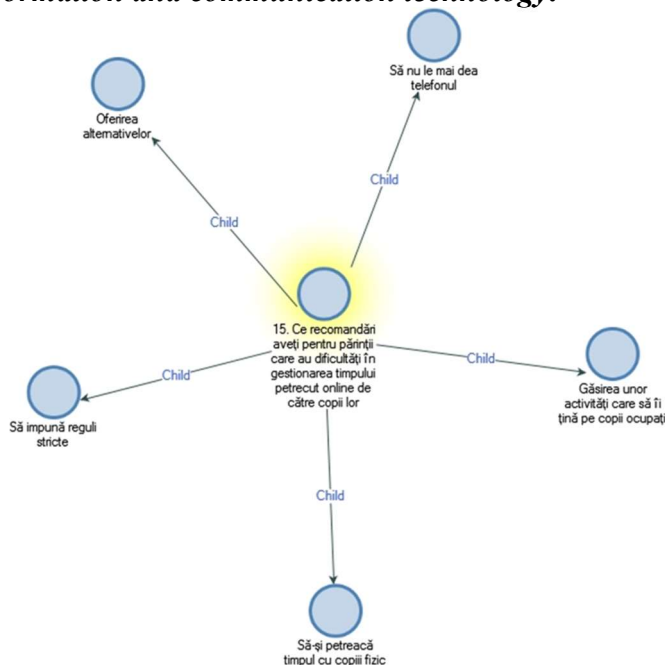


Fig. 1.3. Categorization of participants' responses on their recommendations for managing children's digital use

Asked what recommendations they have for other parents who are faced with the challenge of managing their children's online time, participants mentioned both general activities such as spending time with children physically, offering alternatives and finding activities to keep them occupied, and more specific activities such as imposing strict rules or even banning the phone (stop giving them the phone).

Conclusions

Although seemingly precarious, the responses of the parents participating in the study suggest a dispersion of perceptions of the benefits of children's use of technology, with its use for educational purposes missing from the home in most cases. These responses indicate a lack of knowledge or skills in the use of technology for educational purposes, with rural children prioritizing time spent outdoors and in household activities. A pertinent observation here is the need to study the extent to which parents spend time with their children in these activities that do not include the use of technology, in the context of studies confirming that rural parents are spending less and less time with their children, for reasons related to the nature of their place/type of work, and that the use of technology can become a refuge for children

(Iurea, 2022).

Limitations of the study involve the variable/inconsistent number of participant responses across questionnaire items, with participants having the option of not answering questions they do not wish to answer. There was also skepticism among rural parents as to how the data would be processed and the purpose of data collection, although they were informed

about the study, with the risk of undesirable answers being given. Lastly, possible methodological errors related to the lack of criteria on the gender of the parent (it was not controlled whether mother, father or grandparents answered the questionnaire), educational level, social status or other factors that could shape the participants' answers.

Although the concerns of rural parents differ from those of urban parents, and their digital skills also differ, one of the recommendations for future research is the level of digital skills of rural parents and the barriers they face in supporting their children to use digital technology correctly (for educational purposes).

The parents' answers are short, and it is considered irrelevant to reproduce them in the results section, while at the same time the possibility of contextualizing these answers is affected. In this respect we recommend individual or focus group interviews with urban versus rural parents.

References

- Bulbarela, M. S. (2008) Monitoring learning progress. Theoretical framework and empirical evidence on the application of evaluation and process monitoring theories in the creation of tools to monitor learning progress in e-learning scenarios,
- Cavalcanti, A. P., Mello, R. F., Miranda, P. and Freitas, F. L. G. d. (2020). Automatic Feedback Analysis in Online Learning Environments,
- Cosma, M.-L. (2021). Information and communication technology use by children in Romania.
- Sinteze teoretice, Sociologie Românească, vol. 19, no. 1, pp. 154-167.
- Dhanain, A. (2023). The Positive and Negative Impacts of Technology on Children, INTERANTIONAL JOURNAL OF SCIENTIFIC RESEARCH IN ENGINEERING AND MANAGEMENT.
- Grigore-Filip, M. V. (2021). Case study on the impact of online schooling in a rural area during the emergency state (March-June 2019-2020 school year, Romania),
- Gyeltshen, T. (2022). The perception of the parents towards the online teaching and learning during the COVID-19 pandemic, International Journal of Humanities and Education Development, vol. 4, no. 2, pp. 86-90.

- Hindman, D. B. (2000). The rural-urban digital divide, *Journalism & Mass Communication Quarterly*, Vol. 77, No. 3, pp. 549-560.
- Holloway, D., Green, L. and Brady, D. (2013). 0-8: Young children's Internet use,
- Islam, M. M., Shaheen, S. M., Roy, R. K., Islam, A. and Hossain, M. D. (2023). Pandemic-Led Challenges for Rural Students in Bangladesh, *IAFOR Journal of Education*, vol. 11, no. 3, pp. 113-136.
- Iurea, C. (2022). Time management and division of domestic tasks in Romanian families, *Jus et Civitas - A Journal of Social and Legal Studies*.
- Javakhishvili, M., & Vazsonyi, A. T. (2021). Parental vigilance, low self-control, and Internet dependency among rural adolescents, *Child and Adolescent Online Risk Exposure*, pp. 191-208.
- Joseph, H. B., Kuppuswamy, S., & Shetty, A. P. (2021). Children's online learning during COVID-19 pandemic: experiences and satisfaction encountered by Indian parents, *Journal of Ideas in Health*.
- Juhaňák, L., Zounek, J., Záleská, K., Bárta, O. and Vlčková, K. (2018) The Relationship between Students' ICT Use and Their School Performance: Evidence from PISA 2015 in the Czech Republic, *Orbis scholae*, vol. 12, no. 2.
- Kim, S. Y., Kim, M.-S., Park, B., Kim, J.-H. and Choi, H. G. (2017). The associations between internet use time and school performance among Korean adolescents differ according to the purpose of internet use, *PloS one*, vol. 12, no. 4, pp. e0174878.
- Lestari, G. Readiness of Parents in Utilizing Information and Communication Technology (ICT) in Children's Learning during the Covid-19 Pandemic, *Journal of Nonformal Education*, vol. 8, no. 2, pp. 200-207.
- Livingstone, S., Ólafsson, K., Helsper, E. J., Lupiáñez-Villanueva, F., Veltri, G., G. A. and Folkvord, F. (2017) Maximizing Opportunities and Minimizing Risks for Children Online: The Role of Digital Skills in Emerging Strategies of Parental Mediation, *Journal of Communication*, vol. 67, no. 1, pp. 82-105.
- Lo, B. C. Y., Lai, R. N. M., Ng, T. K., and Wang, H. (2020) Worry and Permissive Parenting in Association with the Development of Internet Addiction in Children, *International Journal of Environmental Research and Public Health*, vol. 17.
- Ludji, I. and Marpaung, T. (2021). Parents' Perception on the Implementation of Home Learning during Covid-19, *Basicedu Journal*, vol. 5, no. 5, pp. 3636-3643.

- Ly, D. B., Dudovitz, R. N., Runger, D., Jackson, N. J., & Wong, M. D. (2021). Chaos in Schools and Its Relationship to Adolescent Risk Behaviors, *Acad Pediatr*, vol. 21, no. 2, pp. 329-335.
- Mashrah, H. T. (2017). The Impact of Adopting and Using Technology by Children, *Journal of Education and Learning*, vol. 11, pp. 35-40.
- Matthes, J., Thomas, M. F., Stevic, A., and Schmuck, D. (2021). Fighting over smartphones? Parents' excessive smartphone use, lack of control over children's use, and conflict, *Computers in Human Behavior*, vol. 116, pp. 106618.
- Mensah, R. O., Quansah, C., Oteng, B. and Nii Akai Netey, J. (2023). Assessing the effect of information and communication technology usage on high school student's academic performance in a developing country, *Cogent Education*, vol. 10, no. 1, pp. 2188809.
- Nahar, N., Sangi, S. B. H., Dharsigah, A., Salvam, P. B., Rosli, N. A. and Abdullah, A. H. H. (2018). Impak Negatif Teknologi Moden Dalam Kehidupan Dan Perkembangan Kanak-Kanak Hingga Usia Remaja (Negative Impact Of Modern Technology To The Children's Life And Their Development),
- Néma, J.-E. (2024). A rurális közegben élő szülők IKT-attitűdjei, nevelési stílusai - Az olvasóvá nevelés digitális kihívásai, *Acta Medicinæ et Sociologica*.
- Rodideal, A. A. (2018) Emerging needs for minimizing negative effects of technology overuse among children, *Moldavian Journal for Education Social Psychology*, Vol. 2, No. 1, pp. 1-16.
- Rodideal, A. A. (2019). Digital Natives Romanians Can Hardly Imagine Life without Internet, *Revista de Stiinte Politice*, no. 62.
- Rodríguez-de-Dios, I., van Oosten, J. M., and Igartua, J.-J. (2018) A study of the relationship between parental mediation and adolescents' digital skills, online risks and online opportunities, *Computers in Human Behavior*, vol. 82, pp. 186-198.
- Sumathi, D. e. a. (2021). Parents' Perception And Support Towards School Education Through Online Learning During Covid - 19,
- Susetyo, B. (2021). Impacts of Gender, Parents' Educational Background, Access to ICT, Use of ICT and School Quality on Students' Achievement, *International Conference on Educational Assessment and Policy (ICEAP 2020)*,
- Vandoninck, S., d'Haenens, L. and Šmahel, D. (2014). Preventive measures: how youngsters avoid online risks,
- Vannucci, A., Simpson, E. G., Gagnon, S., & Ohannessian, C. M. (2020). Social media use and risky behaviors in adolescents: A meta-analysis, *J Adolesc*, vol. 79, pp. 258-274.

- Vincze, A. (2018) Exploring the Effect of Different Modes of ICT Use on School Performance Including Social Background, *Studies*, pp. 4.
- Wang, X. and Lee, K. M. (2020). The paradox of technology innovativeness and risk perceptions - A profile of Asian smartphone users, *Telematics and Informatics*, vol. 51.
- Zaldivar, V. A. R., Pardo, A., Burgos, D. and Kloos, C. D. (2012). Monitoring student progress using virtual appliances: A case study, *Comput. Educ.* vol. 58, pp. 1058-1067.
- Ziliak, J. (2019). restoring economic opportunity for "the people left behind": employment strategies for rural America, *The Aspen Institute Economic Strategy Group*, vol. 3.

ART AS EXPRESION OF FEELINGS FOR CHILDREN

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Abstract: *Art, as a sensory expression, is sometimes characterized as a therapeutic medium through which children articulate their emotions. A prevalent notion in certain educational institutions is that the sole justification for creating art is for pupils to express feelings, rather than as an integral academic process. Art is perceived as a cathartic process through which emotions disclose their source. Traditionally, mathematics and literature are conducted in the morning and hold significant importance in the school curriculum. It is unsurprising that art is perceived as an emotional outlet, particularly when children exhibit diminished cognitive concentration. The arts, characterized by an ambiance of joy and emotional expression, are a compelling candidate for therapeutic intervention. We must acknowledge that this is merely a supplementary role; nonetheless, if it serves solely for emotional release, its significance aligns more closely with psychiatry than with expressive art.*

Key words: *artistic-aesthetic education; form of expression; emotions through art.*

Introduction

Although it is indisputable that art can facilitate emotional expression, if that were its sole benefit for children, it would justifiably warrant a diminished role in the curriculum. In the absence of alternative cognitive engagement, such as problem-solving, discriminating, or decision-making, children would solely express their emotions. ‘To draw is to create meaning with the help of lines, to say with other signs or with some images what is sometimes difficult to say in words.’ (Cioca, 2019) Their creation is inconsequential. If emotional release were the exclusive aim of art, then art sessions should be structured more like psychotherapy, with the instructor assuming the role of a psychiatrist. Art serves as a therapeutic outlet while simultaneously conveying emotions and sentiments to others through the structuring of form and substance. As a cathartic release of emotion, it holds no greater worth than the most egregious instances of what was termed “free expression.” Art as Therapy is an integral component of programs at special schools and hospitals; yet, its incorporation into the normal school curriculum is

achieved through more significant means.

Critics and educators have readily acknowledged that art serves as an expression of emotions rather than a means of emancipation. The articulation of internal emotions into a tangible and public format defines the manifestation of visual expression. ‘The subjectivity of the author is included in what the work reflects; perhaps also expectations or representations of a collective subjectivity, because the artistic object belongs to an individual integrated in the collective and appears to someone.’ (Cucos, 2014) The emotional response elicited by art is fundamentally what animates it and conveys its message. If artworks do not impact us, it is questionable whether what we experience can truly be considered art. The act of creating art in educational settings fundamentally depends on children's self-perceptions and enables them to express aspects of themselves that cannot be entirely conveyed through language. This is the same idea presented by Huizinga: ‘culture appears in the form of play, culture at first is played’ (Huizinga, 2018) Indeed, emotions can be readily diminished when articulated, particularly if they lack poetic expression and are instead merely described.

Through art, children can articulate their emotions in relation to the subjects they select for interpretation. Each instance of painting, drawing, or sculpting in clay integrates the subject into their existence. As Kant says ‘that pleasure is a state of the soul in which a representation is granted with itself, in order either to simply preserve this state, or to produce the object of that representation’. (Kant, 1981) In this regard, they vividly convey their emotions of fear, wrath, or joy through facial expressions. Nonetheless, for both children and maybe adults, the capacity to empathize with the issue is crucial to their overall advancement in deriving meaning from their actions. For certain children, the emotions linked to their subject are evidently intense. Similar to the profound impact many experiences when encountering exceptional artworks or listening to outstanding musical performances, youngsters might derive reassurance from premier artistic encounters that life possesses intrinsic value and significance.

Materials and methods

After a brief period of waiting on the school grounds, one may often perceive and sense the appreciation of art. The exterior of a school may seem mundane and unappealing, yet a stark difference exists within. There exists a risk that the art displayed in schools may transform into a mere “showcase” for parents and distinguished guests. The character of a school is predominantly reflected in the perspective that regards the final products as the exclusive foundation of art education, affix to the walls of his edifice. No degree of superficial enhancement can offset

inadequate art instruction; thus, appreciating art solely for its aesthetic contribution to exhibition is an insufficient rationale. Indeed, exposure as a motivation for creating art can readily result in a vibrant atmosphere for children is unparalleled. Children progress by observing exemplars of unveiled work that provoke their cognition and ignite their interest. If artistic learning occurs, then visual stimulation in schools is crucial. A teacher who renders the classroom engaging and dynamic exemplifies dedication and involvement. We convey our educational principles through all our displays, including the children's work and the arrangement of common objects and equipment.

Items that reach the classroom walls typically represent a curated selection of available materials. The emphasis is significantly more on the guidance teachers provide during art lessons than on the limited output displayed by a select few students. Highlighting the distinctive and exceptional values inherent in art imparts significance that contributes significantly to educating children about their intrinsic worth. 'A good can be transformed into value when, remaining the same even as a good material, satisfies the desire of all'. (Noica, 1993) This pertains not to the frequency of workshop sessions, but to the quality of the experience during their occurrence.

Results

When art is reduced to a mere embellishment for other disciplines, it forfeits the intrinsic values that render its creation meaningful. In disciplines like history and other social sciences, the role of art is frequently misconstrued. Artworks pertaining to history should offer diverse options for artistic expression. Creating patterns, illustrating images of Viking ships, or designing maps necessitates creative proficiency. However, they scarcely represent the entirety of art's importance in children's education. In historical works, art frequently assumes a secondary and illustrative function, distinct from the primary artistic idea. It serves as an auxiliary for the subject or a resource for another subject. The significance of this is apparent when children employ several learning modalities within a single subject; but, if the approach merely amplifies the information they provide, art is deprived of its distinctive and imaginative essence. In the absence of counterbalancing, permitting subjects to assist art rather than vice versa, a diminished and impoverished form of artistic education often transforms into commonplace practice.

This may appear overly harsh of the exceptional learning achievable through the humanities. However, she attracts additional attention since the trap she sets is an easy one to succumb to. It is challenging to accept that art is not properly comprehended when observing children diligently creating illustrations and models. To an outsider, it appears

that there is an abundance of art and sufficient remarkable specimens to fulfill the desire for exhibition centered around a common theme. What is the issue? Art should undoubtedly be subordinate in certain disciplines.

Discussion

This is not a significant issue if we acknowledge the situation and do not misconstrue it as representative of the overall creative education program. As a mere servant of the subject, art becomes a rather troubling companion to reality rather than to imagination or expression. The inclination to associate art with factual information is pronounced, and the rationale is evident to certain educators. According to one educator, art is significant as it offers a visual depiction of children's written work. It enhances the significance of factual work and serves as the foundation of our teaching methodology; nevertheless, we must comprehend the contributions of each topic to maximize their potential. This is particularly evident in initial educational institutions when subject boundaries are often indistinct. To what extent would we experience guilt if one subject served as a foundation for work on other subjects? Can we assert that we regarded language as significant by elucidating the facts within the subjects? Can we assert that the purpose of mathematics was to quantify historical phenomena? Alternatively, may we assert that language and mathematics may cease to function about the subject, but the subject could offer imaginative foundations for art? Affirmative. However, assigning him a subordinate role implies that his creativity is obscured by factual constraints. There is nothing inappropriate about focusing on a specific issue.

The challenge in teaching history, geography, or science lies in the tendency of pupils to prioritize the collection and analysis of facts, while neglecting the importance of creativity. Who, ultimately, desires an innovative design for a Viking ship or imaginative incantations? A record of the pertinent facts is typically available. Nonetheless, we can produce imaginative depictions of Viking ships and employ inventive language while acknowledging that their form or orthography is quite constant. The teacher, who appeared engrossed in using art to convey facts, also believed it beneficial to promote the enhancement of physical skills. While this may hold true for very young children, it is not particularly significant, as children acquire fine motor skills through various activities, including the use of utensils. Thus, the endorsement of art as a means to develop these skills is of limited importance. The enjoyment of art by youngsters does not inherently confer higher or lesser value compared to other enjoyable pursuits.

A dystopian perspective on art education is one where art is regarded solely as a leisure activity. Leisure can diminish the worth of art, rather

than serve as a catalyst for creation. Educational institutions are not recreational facilities, and the creation of art during individuals' spare time does not inherently distinguish it from diligent effort. Characterizing painting as only a leisure activity demonstrates a lack of understanding of the process of creative education. If we disregard sensory learning and permit art to devolve into mere recreation, then the art presented in schools should not be regarded with seriousness. The presence of televisions and video technology in classrooms may readily be associated with leisure time. Nevertheless, we would not assert that they lack instructional value, as it is presumed that the content of school television programs pertains to education. If educators perceive art solely as a recreational pursuit rather than a delightful learning experience, they must meticulously examine its content to identify any deficiencies. Numerous educators will encapsulate the significance of art as a means of enhancing a child's self-worth. They perceive art as a means for a youngster to acquire confidence and a sense of belonging, or for their worldview to be validated. The instruction of art is distinguished by its provision of autonomy within an unstructured curriculum, the specifics of which are seldom predetermined. Utilizing intuition and common sense, we can render sound judgments regarding the values we deem essential. To teach art with genuine conviction and comprehension, we must focus on the intrinsic value of art, as our own value system influences our pedagogical approach.

References

- Cioca, V. (2019). *Jocul de-a/cu arta*. Cluj-Napoca: Limes.
- Cucoș, C. (2014). *Educatia estetică*. Iași : Polirom.
- Huizinga, J. (2018). *Homo Ludens*. București: Humanitas.
- Kant, I. (1981). *Critica facultății de judecare*. București: Editura Științifică și Enciclopedică.
- Noica, C. (1993). *Modelul cultural european*. București: Humanitas.

HOW TO INFER MATHEMATICAL SEQUENTIAL MEDIATION RELATIONSHIPS FROM NETWORK ANALYSIS

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Abstract: *This paper explores the statistical inference of mathematical sequential mediation relationships through network analysis, utilizing JASP for network modeling and SPSS Process Macro (Model 6) for mediation analysis. Sequential mediation analysis is particularly useful when dealing with highly complex theoretical models or when no theoretical model exists, enabling exploratory or confirmatory studies of specific mediation relationships. Network analysis serves as a complementary tool to identify potential pathways and interrelations within variables before applying mediation models. The paper includes an applied example within a study that uses an extended Technology Acceptance Model (TAM) to identify factors promoting TAM adoption among preschool teachers. The methodological implications of combining sequential mediation and network analysis are discussed, offering significant contributions to the behavioral sciences.*

Key words: *sequential mediation; network analysis; SPSS Process Macro; JASP; Technology Acceptance Model (TAM).*

Introduction

In contemporary research, understanding complex relational structures among variables is paramount for advancing theoretical and applied knowledge in psychology and education. Sequential mediation analysis and network analysis are two advanced methodologies that allow for such in-depth investigations. This paper aims to provide a methodological and theoretical framework for mathematically extracting sequential mediation relationships from network analysis results, bridging the gap between exploratory network approaches and confirmatory mediation testing.

Sequential mediation analysis is a robust statistical approach that identifies indirect pathways through which a predictor variable influences an outcome variable via two or more mediators arranged in a specific order. Unlike simple mediation models, sequential mediation allows researchers to explore cascading effects and multi-step mechanisms within a system, providing nuanced insights into how variables interact dynamically (Hayes, 2017). This methodological framework is particularly valuable for uncovering relationships in systems with multiple interacting constructs, such as psychological or educational settings (Shelleby et al., 2014; Caleon et al., 2019; Marici et al., 2024).

Network analysis, on the other hand, visualizes and quantifies the relationships among variables by mapping connections and identifying central nodes within a network. This exploratory method provides a powerful tool for uncovering complex interdependencies and potential mediational pathways in multidimensional datasets. By leveraging metrics such as centrality, clustering coefficients, and community detection, researchers can generate hypotheses about possible sequential mediation relationships that can subsequently be tested using traditional statistical methods (Delcea et al., 2023; Rad, Redeş et al., 2023; Runcan et al., 2023).

The integration of network analysis and sequential mediation offers a unique methodological synergy. Network analysis enables the identification of key mediating variables and potential paths of influence, which can guide the design of sequential mediation models. This combined approach is particularly useful when theoretical guidance is sparse or when the data exhibit high dimensionality, as seen in behavioral sciences and educational research (Rad, Dughi et al., 2020; Rad, Marcu et al., 2024). For example, Dughi et al. (2023) demonstrated the utility of this integration by examining the indirect effects of classroom comfort and faculty support on student grit through network analysis-driven sequential mediation.

A core application of this framework lies in extending the Technology Acceptance Model (TAM) to explore technology adoption behaviors in complex educational environments. TAM, initially developed by Davis (1989), has been widely utilized to explain technology adoption based on constructs such as perceived usefulness and ease of use. Recent extensions of TAM incorporate variables like perceived risk, subjective norms, and hedonic motivations, offering a richer understanding of user behavior in various contexts (Featherman & Fuller, 2003; Altin Gumussoy et al., 2018; Saber Chtourou & Souiden, 2010). By integrating network analysis, researchers can identify interrelations among these constructs, providing a data-driven foundation for sequential mediation models (Rad, Magulod et al., 2022; Scherer et al.,

2019).

Methodologically, this paper utilizes JASP for network modeling and SPSS Process Macro (Model 6) for sequential mediation analysis. JASP provides a user-friendly interface for visualizing networks and calculating essential metrics, while SPSS Process Macro allows for rigorous testing of hypothesized mediation pathways. Together, these tools enable the extraction of meaningful insights from large datasets, fostering a deeper understanding of how variables interact in complex systems.

By focusing on the interplay between network analysis and sequential mediation, this paper contributes to the methodological discourse in behavioral sciences. It establishes a replicable framework for analyzing complex relationships, offering practical insights into how sequential mediation relationships can be mathematically inferred from network data. This approach is particularly relevant for exploratory studies in contexts where theoretical models are either underdeveloped or absent, as it allows researchers to generate and test hypotheses grounded in empirical data. The implications of this integrated approach extend to various domains, including psychology, education, and social sciences, where understanding indirect effects is crucial for advancing theoretical and practical knowledge.

Mathematical foundations of network analysis and sequential mediation analysis

The integration of network analysis and sequential mediation analysis represents a significant methodological advancement in psychological and behavioral sciences. These approaches, grounded in graph theory and statistical modeling, respectively, offer complementary tools for uncovering complex relationships within large datasets. Network analysis facilitates hypothesis generation by mapping and quantifying relational structures, while sequential mediation analysis rigorously tests these hypotheses to identify indirect effects and mediator pathways. This section explores the mathematical underpinnings of these methods, focusing on their application to models like the Technology Acceptance Model (TAM).

Network analysis employs graph theory to represent variables as nodes and their interactions as edges, providing both a visual and quantitative understanding of relational structures. Relationships among variables are captured in an adjacency matrix, where each element denotes the presence or strength of the connection between nodes. Several key metrics derived from are instrumental in identifying influential nodes and potential mediators within the network:

- **Betweenness centrality** - quantifies how often a node lies on the shortest paths between other nodes in the network. Nodes with

high betweenness centrality serve as crucial bridges, facilitating interactions and information flow between disconnected parts of the network. In psychological research, such nodes often represent key mediators that connect otherwise isolated variables or groups.

- Closeness centrality - measures how accessible a node is by calculating its average distance to all other nodes in the network. Nodes with high closeness centrality are well-positioned to quickly influence or interact with other nodes, making them influential in spreading information or effects throughout the network. In behavioral studies, these nodes might represent variables that play a central role in initiating or amplifying effects.
- Strength (Weighted Degree Centrality) - captures the overall connectedness of a node by summing the weights of its connections, rather than simply counting the number of connections. Nodes with high strength have strong and robust ties to other variables, indicating their pivotal role in maintaining the structural integrity of the network. In applied contexts, these nodes might signify constructs with substantial direct influence on multiple outcomes.

- Expected influence - expands on strength by accounting for both direct and indirect effects of a node on others. This metric reflects not only how strongly a node is connected to its immediate neighbors but also how it indirectly impacts the broader network. Nodes with high expected influence have the potential to shape the dynamics of the network significantly, making them critical for understanding cascading effects in sequential relationships.

These metrics collectively help identify variables likely to mediate relationships within a network, laying the groundwork for further investigation through sequential mediation analysis.

Sequential mediation analysis extends simple mediation models by examining indirect effects through multiple mediators arranged in a specific order. Sequential mediation models are often estimated using regression-based techniques, such as those implemented in SPSS Process Macro (Model 6), which test the statistical significance of indirect pathways.

This integrated framework has been applied in various studies, including Rad, Redeş, and colleagues' (2023) exploration of teacher cognitive presence, classroom comfort, and student grit. Similarly, integrating TAM constructs with network metrics has revealed significant pathways of technology acceptance (Davis, 1989; Scherer et al., 2019). By combining the exploratory power of network analysis with the confirmatory rigor of sequential mediation analysis, researchers can uncover and validate complex relational dynamics, advancing theoretical and applied research in behavioral sciences.

Case study

This case study examines an extended Technology Acceptance Model (TAM) by integrating additional constructs such as emotional consequences of Zoom fatigue and perceived risk. The TAM framework, initially introduced by Davis (1989), has been widely used to explore user acceptance of technology based on perceived usefulness and perceived ease of use. Extensions of TAM have incorporated variables such as perceived enjoyment, compatibility, and self-efficacy, which enhance its applicability to diverse technological contexts (Marangunic & Granic, 2015; Scherer, Siddiq, & Tondeur, 2019). The inclusion of Zoom fatigue and perceived risk aligns with recent research addressing emotional and cognitive barriers to technology use in educational and professional settings (Fosslien & Duffy, 2020; Riedl, 2022).

Descriptive statistics provide insights into the central tendencies and variability of the constructs measured in the study. Table 1 summarizes the descriptive statistics for the variables included in the extended TAM model.

	Va lid	Mis sing	Me an	St d. Er ror of Me an	Up per	Lo we r	Std. Devi ation	Mini mum	Maxi mum
D1_Perceived_usefulness	18 2	0	2.5 60	0.0 84	2.7 25	2.3 96	1.12 9	1.00 0	5.000
D2_Perceived_ease_of_us e	18 2	0	3.0 70	0.0 68	3.2 04	2.9 37	0.91 9	1.00 0	5.000
D3_Perceived_enjoyment	18 2	0	3.2 54	0.0 77	3.4 05	3.1 04	1.03 5	1.00 0	5.000
D4_Intention_to_use	18 2	0	3.1 70	0.0 87	3.3 42	2.9 99	1.17 9	1.00 0	5.000
D5_Actual_use	18 2	0	2.9 29	0.0 86	3.0 97	2.7 61	1.15 6	1.00 0	5.000
D6_Compatibility	18 2	0	3.0 02	0.0 78	3.1 54	2.8 50	1.04 7	1.00 0	5.000

			95% Confidence Interval Mean		Std. Deviation	Minimum	Maximum	
	Valid	Missing	Mean	Std. Error	Upper	Lower		
D7_Attitude	18 2	0	2.90 1883	0.03 80	3.05 55	2.79 9	1.00 0	5.000
D8_Self_effycacy	18 2	0	3.80 7264	0.03 98	3.94 46	3.79 9	0.86 0	1.00 5.000
D9_Emotional_consequences_of_Zoom_fatigue	18 2	0	3.00 0973	0.03 52	3.16 66	2.86 6	0.98 0	1.00 5.000
D10_Perceived_risk	18 2	0	3.50 2677	0.03 76	3.63 76	3.33 3	1.03 0	1.00 5.000

Table 1. Descriptive Statistics

The Pearson correlation matrix highlights the relationships among variables in the extended TAM model (Table 2). Significant correlations ($p < .05$) reveal potential pathways and interdependencies between constructs.

Variable	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
1. Perceived usefulness	—									
2. Perceived ease of use	0.523*	—								
3. Perceived	0.572*	0.689*	—							

Variable	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
enjoyment										
4. D4 Intention to use	0.5 *	0.5 *	0.8 *	—						
5. D5 Actual use	0.4 *	0.5 *	0.7 *	0.7 *	—					
6. D6 Compatibility	0.5 *	0.6 *	0.7 *	0.6 *	0.6 *	—				
7. D7 Attitude	0.5 *	0.6 *	0.7 *	0.7 *	0.7 *	0.7 *	—			
8. D8 Self efficacy	0.3 *	0.5 *	0.6 *	0.5 *	0.5 *	0.5 *	0.5 *	—		
9. D9 Emotional consequences of Zoom fatigue	0.1	0.1 *	0.1 *	0.1	0.0	0.2 *	0.2 *	0.1 *	—	
10. D10 Perceived risk	-	-	-	0.0	0.0	-	0.0	0.0	0.4 *	—

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Pearson's Correlations

Network analysis was employed to visually and statistically represent the relationships between TAM constructs and the extended variables, including perceived risk and Zoom fatigue. This approach enabled the identification of influential nodes (variables) and their connections within the network, highlighting potential mediation pathways.

The network consisted of 10 nodes (representing variables) and 27 non-zero edges out of 45 possible connections, with a sparsity index of 0.40. This indicates a moderately dense network structure where variables are interconnected.

The centrality measures and weights matrix derived from the network analysis provided critical insights into the relational dynamics among variables within the extended Technology Acceptance Model (TAM). Centrality measures, including betweenness, closeness, strength, and expected influence, highlight the relative importance of each variable in mediating and influencing connections within the network (Table 3).

Variable	Network			
	Betweenness	Closeness	Strength	Expected influence
1. D1 Perceived usefulness	-0.487	-0.195	-0.731	-1.115
2. D2 Perceived ease of use	-0.044	0.120	-0.244	-0.079
3. D3 Perceived enjoyment	0.399	0.722	1.413	1.309
4. D4 Intention to use	0.620	1.153	1.009	0.971
5. D5 Actual use	-0.930	-0.089	0.110	0.218
6. D6 Compatibility	-0.487	0.289	0.264	0.347
7. D7 Attitude	2.391	1.569	1.359	1.264
8. D8 Self efficacy	-0.930	-0.794	-0.819	-0.560
9. D9 Emotional consequences of Zoom fatigue	0.177	-1.209	-1.142	-0.831
10. D10 Perceived risk	-0.708	-1.566	-1.220	-1.525

Table 3. Centrality measures per variable

"Attitude" (D7) exhibited the highest centrality values across betweenness (2.391), closeness (1.569), strength (1.359), and expected influence (1.264), underscoring its pivotal role as a mediator and connector among other TAM constructs. "Perceived Enjoyment" (D3) and "Intention to Use" (D4) also demonstrated high centrality scores, reflecting their significant influence in the network. Specifically, D3 had high strength (1.413) and expected influence (1.309), suggesting its strong direct and indirect relationships with other variables. Similarly, D4 had notable closeness (1.153) and strength (1.009), indicating its accessibility and influence within the network structure. Conversely, variables such as "Perceived Risk" (D10) and "Emotional Consequences of Zoom Fatigue" (D9) exhibited negative centrality values across most metrics, indicating weaker or inverse influences on the network's relational pathways. Despite this, the weight matrix revealed significant

direct connections between D10 and D9 (weight = 0.358), highlighting a notable pathway between perceived risk and the psychological impacts of Zoom fatigue.

The weights matrix further (Table 4) illustrated the direct relationships between variables. For instance, strong connections were observed between "Intention to Use" (D4) and "Actual Use" (D5) (weight = 0.452), as well as between "Perceived Enjoyment" (D3) and "Intention to Use" (D4) (weight = 0.350). These relationships validate the mediating roles of D3 and D4 within the extended TAM framework. Notably, "Attitude" (D7) was strongly connected to "Compatibility" (D6) (weight = 0.356), emphasizing its integrative function in aligning user perceptions and behaviors.

Variable	Network									
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
1. D1 Perceived usefulness	0.00 0	0.15 4	0.08 4	0.03 3	0.00 0	0.06 4	0.16 1	0.00 0	0.00 0	- 0.10 6
2. D2 Perceived ease of use	0.15 4	0.00 0	0.20 8	0.00 0	0.05 8	0.14 6	0.00 0	0.17 3	0.00 0	0.00 0
3. D3 Perceived enjoyment	0.08 4	0.20 8	0.00 0	0.35 0	0.07 9	0.10 1	0.15 7	0.22 9	0.00 0	0.00 0
4. D4 Intention to use	0.03 3	0.00 0	0.35 0	0.00 0	0.45 2	0.03 6	0.22 4	0.00 0	0.00 0	0.00 0
5. D5 Actual use	0.00 0	0.05 8	0.07 9	0.45 2	0.00 0	0.10 6	0.11 4	0.03 1	0.00 0	0.00 0
6. D6 Compatibili ty	0.06 4	0.14 6	0.10 1	0.03 6	0.10 6	0.00 0	0.35 6	0.07 5	0.00 0	0.00 0
7. D7 Attitude	0.16 1	0.00 0	0.15 7	0.22 4	0.11 4	0.35 6	0.00 0	0.06 1	0.11 9	0.00 0
8. D8 Self efficacy	0.00 0	0.17 3	0.22 9	0.00 0	0.03 1	0.07 5	0.06 1	0.00 0	0.00 9	0.00 0
9. D9 Emotional consequence s of Zoom fatigue	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.11 9	0.00 9	0.00 0	0.35 8
10. D10 Perceived	- 0.10	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.00 0	0.35 8	0.00 0

Variable	Network									
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10
risk	6									

Table 4. Weights matrix

Figure 1 depicts the network structure of the extended Technology Acceptance Model (TAM), illustrating the relationships between variables as nodes and edges. The thickness of the edges represents the strength of the connections, as quantified in the weight's matrix. Notably, key variables such as "Attitude" (D7), "Perceived Enjoyment" (D3), and "Intention to Use" (D4) are centrally positioned within the network, indicating their significant roles in mediating relationships between other constructs. Variables such as "Perceived Risk" (D10) and "Emotional Consequences of Zoom Fatigue" (D9) are positioned on the periphery, reflecting weaker or indirect connections to the core network components.

From the visual depiction in Figure 1 and the theoretical foundations of TAM, we observed critical pathways influencing "Actual Use" (D5). For example, "Compatibility" (D6) connects to "Perceived Enjoyment" (D3) and "Intention to Use" (D4), which in turn influence "Actual Use" (D5). This pathway aligns with TAM theory, where perceived usability and user attitudes are critical precursors to technology adoption behaviors (Davis, 1989).

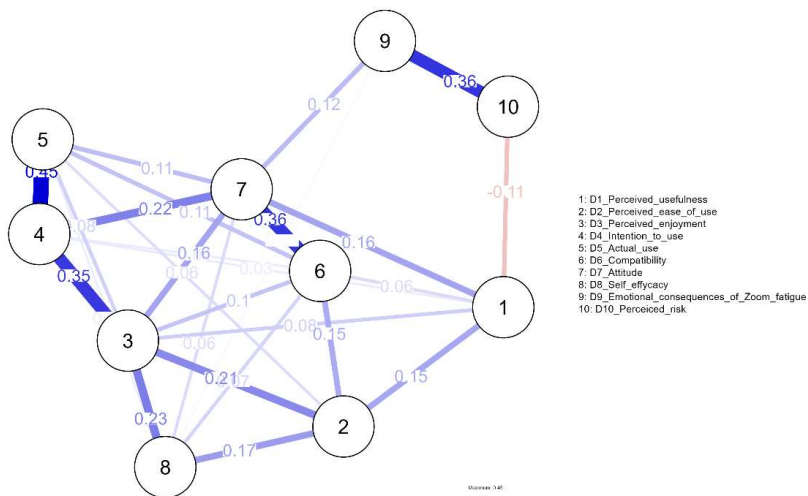


Figure 1. Network

Figure 2 provides a graphical representation of centrality measures,

including betweenness, closeness, strength, and expected influence for each variable in the network. "Attitude" (D7) emerges as the most central variable, exhibiting high scores across all metrics, which underscores its integrative role in the network. "Perceived Enjoyment" (D3) and "Intention to Use" (D4) also show elevated centrality values, confirming their importance in mediating relationships and facilitating technology acceptance.

In contrast, "Perceived Risk" (D10) and "Emotional Consequences of Zoom Fatigue" (D9) exhibit lower centrality values, reflecting their peripheral roles in the network. However, these variables remain relevant, particularly in their association with psychological and emotional barriers to technology adoption. For example, "Perceived Risk" (D10) has a strong direct connection to "Emotional Consequences of Zoom Fatigue" (D9), suggesting a pathway by which perceived risk may indirectly affect user behavior through emotional impacts.

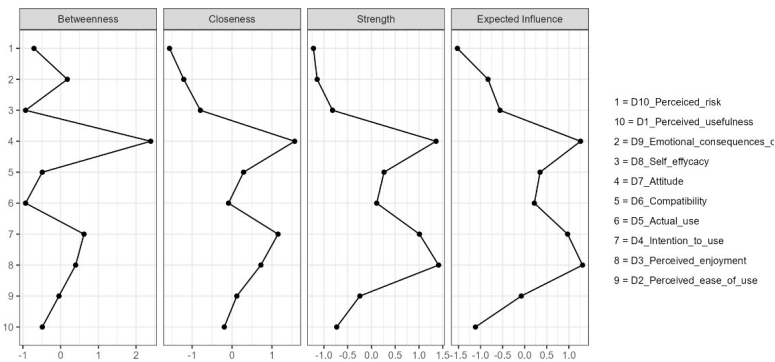


Figure 2. Centrality Plot

Next, a sequential mediation analysis statistical approach was used to understand the indirect effects of a predictor variable (X) on an outcome variable (Y) through multiple mediators arranged in a specific sequence (M_1, M_2, \dots, M_n). This analysis goes beyond simple mediation by exploring the pathways and mechanisms that link variables in complex, multistage processes. It is particularly useful in behavioral and psychological sciences, where outcomes are often influenced by both direct and indirect relationships.

One widely used tool for conducting sequential mediation analysis is the PROCESS macro developed by Andrew F. Hayes. Version 4.0 of this macro for SPSS and SAS provides a flexible and user-friendly framework for testing mediation, moderation, and conditional process models (Hayes, 2022). Among the various models available in PROCESS, Model 6 is specifically designed to assess sequential mediation, enabling researchers to examine the effects of multiple mediators in a predetermined order.

The sequential mediation analysis results provide a comprehensive understanding of the relationships between the predictor variable (Compatibility, D6D6D6), mediators (D3D3D3 - Perceived Enjoyment and D4D4D4 - Intention to Use), and the outcome variable (D5D5D5 - Actual Use).

The total effect of D6 on D5 (Effect=0.7405, $p < .001$) indicates that Compatibility significantly influences Actual Use. This effect encapsulates both direct and indirect influences, highlighting Compatibility's overall contribution to predicting technology adoption behaviors.

The direct effect (Effect=0.1907, $p = .0095$) of Compatibility on Actual Use, while significant, is smaller than the total effect, suggesting that a substantial proportion of the relationship is mediated by other variables (D3 and D4). This finding emphasizes the indirect mechanisms through which Compatibility exerts its influence.

Three specific indirect pathways were examined (Table 5):

1. **Ind1 (D6→D3→D5):** The indirect effect through Perceived Enjoyment (Effect=0.1396, $p < .05$) underscores the importance of enjoyment in translating Compatibility into Actual Use.
2. **Ind2 (D6→D4→D5):** The pathway via Intention to Use (Effect=0.1162, $p < .05$) highlights the role of intention as a crucial mediator.
3. **Ind3 (D6→D3→D4→D5):** The sequential pathway (Effect=0.2939, $p < .001$) accounts for the largest proportion of the total indirect effect, emphasizing the interconnectedness of enjoyment and intention in mediating the Compatibility-Actual Use relationship.

Effect Type	Path	Effect t	SE	t	p	LLC I	ULC I	Std. Effect t
Total Effect	D6→D5	0.7405	0.0610	12.1290	<.001	0.6200	0.8609	0.6706
Direct Effect	D6→D5	0.1907	0.0728	2.6210	.0095	0.0471	0.3343	0.1727
Indirect Effect	Total	0.5498	0.0651			0.4279	0.6813	0.4979
	Ind1 (D6→D3→D5)	0.1396	0.0696			0.0052	0.2852	0.1265
	Ind2 (D6→D4→D5)	0.1162	0.0463			0.0305	0.2171	0.1053
	Ind3	0.2939	0.0611			0.1780	0.4200	0.2666

Effect Type	Path	Effect	SE	t	p	LLC I	ULC I	Std. Effect
	(D6→D3→D4→D5)	9	5			8	3	2

Table 5. Sequential mediation analysis

Statistically, the significant indirect effects confirm the mediating roles of Perceived Enjoyment and Intention to Use. The confidence intervals for all pathways exclude zero, further validating the reliability of these findings. Psychologically, the results align with TAM theory, which posits that the perceptions of compatibility and enjoyment influence user intentions and behaviors. The strong sequential mediation (Ind3) underscores the interplay between emotional and cognitive factors in shaping technology adoption.

These results align with the theoretical underpinnings of the Technology Acceptance Model (TAM), which posits that user perceptions of compatibility and enjoyment are critical precursors to intention and subsequent behavior. Psychologically, this underscores the importance of designing technology systems that enhance user enjoyment and align with their existing workflows to foster positive attitudes and increase adoption rates. Statistically, the confidence intervals for all effects excluded zero, confirming the robustness of the findings. This reinforces the reliability of the sequential mediation pathways and highlights the utility of PROCESS Model 6 in capturing the nuances of multistage relationships.

In conclusion, the study demonstrates that Compatibility influences Actual Use through interconnected psychological mechanisms involving enjoyment and intention. These findings provide valuable insights for advancing TAM-based research and developing interventions that target specific mediators to enhance technology acceptance and usage.

Discussions

This study demonstrates that the integration of network analysis and sequential mediation analysis offers a robust methodological framework for exploring complex mediation relationships in behavioral research. By utilizing JASP for network visualization and SPSS Process Macro (Model 6) for sequential mediation analysis, the study successfully identified and validated key pathways within an extended Technology Acceptance Model (TAM). This dual approach was particularly valuable in addressing complex relationships where theoretical models are either highly intricate or underdeveloped.

The network analysis identified potential mediators and pathways by

calculating centrality metrics and visually mapping variable relationships. Constructs such as Perceived Enjoyment (D3) and Intention to Use (D4) emerged as pivotal nodes with high centrality values, indicating their influential roles within the network. These insights guided the hypothesis that Compatibility (D6) indirectly affects Actual Use (D5) through these mediators.

Sequential mediation analysis confirmed this hypothesis. The results revealed a significant total effect (Effect=0.7405, $p<.001$) of Compatibility on Actual Use, with indirect pathways accounting for a substantial portion of this effect (Indirect Effect=0.5498, $p<.001$). The sequential pathway (D6→D3→D4→D5) was particularly prominent (Effect=0.2939, $p<.001$), demonstrating how enjoyment and intention jointly mediate the relationship between compatibility and technology adoption behaviors.

These findings align with TAM theory, which posits that user perceptions of compatibility and enjoyment are critical for fostering positive attitudes and behavioral intentions. By incorporating network analysis, this study advances TAM research by offering a systematic way to identify and test nuanced relationships among constructs, even in the absence of a fully developed theoretical framework.

Conclusions and implications

The study provides compelling evidence that sequential mediation analysis can be effectively guided by insights derived from network analysis. The integration of these methods offers several advantages for behavioral sciences:

1. **Hypothesis generation through network analysis:** By identifying key variables and pathways visually and quantitatively, network analysis serves as a powerful tool for generating hypotheses about mediation relationships.
2. **Validation through sequential mediation analysis:** Using SPSS Process Macro (Model 6), these hypotheses can be rigorously tested, allowing researchers to decompose complex relationships into direct and indirect effects.
3. **Extended TAM application:** The study demonstrated that Compatibility indirectly influences Actual Use through sequential mediators such as Perceived Enjoyment and Intention to Use. This insight expands TAM's applicability by emphasizing the role of emotional and cognitive factors in technology adoption among preschool teachers.
4. **Methodological rigor:** The use of bootstrapped confidence intervals ensured robust statistical estimates, reinforcing the reliability of the findings. The results validate the integration of exploratory (network analysis) and confirmatory (sequential

mediation analysis) methodologies.

This study highlights the methodological synergy between network analysis and sequential mediation analysis. Researchers in behavioral sciences can adopt this approach to explore complex relationships, particularly when dealing with large datasets or incomplete theoretical frameworks. The visual and statistical insights from network analysis provide a strong foundation for designing sequential mediation models. For practitioners, these findings offer actionable strategies for enhancing technology acceptance. Specifically:

- **Designing user-centric systems:** enhancing compatibility and perceived enjoyment can significantly improve user attitudes and behavioral intentions, ultimately increasing Actual Use.
- **Mitigating barriers:** addressing factors such as emotional consequences (e.g., Zoom fatigue) and perceived risk can further optimize technology adoption in educational and professional contexts.

This study contributes to the ongoing evolution of TAM by incorporating constructs such as perceived risk and emotional consequences of technology use. The integration of these variables provides a more holistic understanding of the psychological mechanisms driving technology adoption.

The successful combination of network analysis and sequential mediation analysis in this study underscores their complementary strengths in uncovering and validating complex relationships. This approach bridges exploratory and confirmatory research, offering significant contributions to behavioral sciences. By demonstrating that sequential mediation relationships can be inferred and tested from network visuals, this study sets a precedent for future research in advancing theoretical and applied knowledge.

References

- Altin Gumussoy, C., Kaya, A., & Ozlu, E. (2018). Determinants of mobile banking use: an extended TAM with perceived risk, mobility access, compatibility, perceived self-efficacy and subjective norms. In *Industrial Engineering in the Industry 4.0 Era: Selected Papers from the Global Joint Conference on Industrial Engineering and Its Application Areas, GJCIE 2017, July 20–21, Vienna, Austria* (pp. 225-238). Springer International Publishing.
- Baby, A., & Kannammal, A. (2020). Network Path Analysis for developing an enhanced TAM model: A user-centric e-learning perspective. *Computers in Human Behavior*, 107, 106081.
- Bharadwaj, S., Khan, N. A., & Yameen, M. (2022). Unbundling employer branding, job satisfaction, organizational identification

- and employee retention: a sequential mediation analysis. *Asia-Pacific Journal of Business Administration*, 14(3), 309-334.
- Cădariu, I. E., & Rad, D. (2023). Predictors of Romanian Psychology Students' Intention to Successfully Complete Their Courses—A Process-Based Psychology Theory Approach. *Behavioral Sciences*, 13(7), 549.
- Caleon, I. S., Ilham, N. Q. B., Ong, C. L., & Tan, J. P. L. (2019). Cascading effects of gratitude: A sequential mediation analysis of gratitude, interpersonal relationships, school resilience and school well-being. *The Asia-Pacific Education Researcher*, 28, 303-312.
- Chen, C. C. (2013). The exploration on network behaviors by using the models of Theory of planned behaviors (TPB), Technology acceptance model (TAM) and C-TAM-TPB. *African Journal of business management*, 7(30), 2976.
- Cuc, L. D., Feher, A., Cuc, P. N., Szentesi, S. G., Rad, D., Rad, G., ... & Joldes, C. S. R. (2022). A parallel mediation analysis on the effects of pandemic accentuated occupational stress on hospitality industry staff turnover intentions in COVID-19 context. *International Journal of Environmental Research and Public Health*, 19(19), 12050.
- Cuc, L. D., Pantea, M. F., Rad, D., Trifan, V. A., & Țurlea, I. C. (2024). Does Culinary Nostalgia Shape Touristic Behaviour?. *The AMFITEATRU ECONOMIC journal*, 26(Special 18), 1126-1126.
- Cuc, L. D., Pantea, M. F., Rad, D., Trifan, V. A., & Țurlea, I. C. (2024). Does Culinary Nostalgia Shape Touristic Behaviour?. *The AMFITEATRU ECONOMIC journal*, 26(Special 18), 1126-1126.
- Davis, F. D. (1989). *Technology acceptance model: TAM*. Al-Suqri, MN, Al-Aufi, AS: *Information Seeking Behavior and Technology Adoption*, 205, 219.
- Delcea, C., Rad, D., Gyorgy, M., Runcan, R., Breaz, A., Gavrilă-Ardelean, M., & Bululoi, A. S. (2023). A network analysis approach to romanian resilience-coping mechanisms in the Covid-19 era. *Pharmacophore*, 14(4-2023), 57-63.
- Dicu, A. M., Cuc, L. D., Rad, D., Rusu, A. I., Feher, A., Isac, F. L., ... & Barbu, F. S. (2024, September). Exploration of Food Attitudes and Management of Eating Behavior from a Psycho-Nutritional Perspective. In *Healthcare* (Vol. 12, No. 19, p. 1934). MDPI.
- Dughi, T., Rad, D., Runcan, R., Chiș, R., Vancu, G., Maier, R., ... & Mihaela, M. C. (2023). A Network Analysis-Driven Sequential Mediation Analysis of Students' Perceived Classroom Comfort and Perceived Faculty Support on the Relationship between

- Teachers' Cognitive Presence and Students' Grit—A Holistic Learning Approach. *Behavioral Sciences*, 13(2), 147.
- Featherman, M., & Fuller, M. (2003, January). Applying TAM to e-services adoption: the moderating role of perceived risk. In 36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of the (pp. 11-pp). IEEE.
- Fosslien, L., & Duffy, M. W. (2020). How to combat zoom fatigue. *Harvard Business Review*, 29(1), 1-6.
- Gana, M., Rad, D., & Stoian, C. D. (2023). Family functioning, parental attachment and students' academic success. *Journal of Infrastructure, Policy and Development*, 8(1), 2565.
- Hossain, L., & de Silva, A. (2009). Exploring user acceptance of technology using social networks. *The Journal of High Technology Management Research*, 20(1), 1-18.
- Ibrahim, R., Leng, N. S., Yusoff, R. C. M., Samy, G. N., Masrom, S., & Rizman, Z. I. (2017). E-learning acceptance based on technology acceptance model (TAM). *Journal of Fundamental and Applied Sciences*, 9(4S), 871-889.
- Lee, M. C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic commerce research and applications*, 8(3), 130-141.
- Lile, R., Cuc, L. D., Pantea, M. F., & Rad, D. (2024). A Humanistic Approach to Recommender Systems: Implications for 5.0 Marketing Management. In *Romanian Management Theory and Practice: Navigating Digitization and Internationalization in the New Global Economy* (pp. 163-178). Cham: Springer Nature Switzerland.
- Malatji, W. R., Eck, R. V., & Zuva, T. (2020). Understanding the usage, modifications, limitations and criticisms of technology acceptance model (TAM). *Advances in Science, Technology and Engineering Systems Journal*, 5(6), 113-117.
- Malibari, M. A., & Bajaba, S. (2022). Entrepreneurial leadership and employees' innovative behavior: A sequential mediation analysis of innovation climate and employees' intellectual agility. *Journal of Innovation & Knowledge*, 7(4), 100255.
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal access in the information society*, 14, 81-95.
- Marcu, R., & Rad, D. (2024). The Domino Effect of Teacher Cognitive Presence Triggering Events and Resolution on Student's Grit. *Technium Soc. Sci. J.*, 59, 147.
- Marici, M., Rad, D., & Runcan, P. (2024). Investigating the indirect effects of appearance-related anxiety on instagram addiction: A

- sequential mediation analysis. *Journal of Infrastructure, Policy and Development*, 8(14), 9259.
- Mortenson, M. J., & Vidgen, R. (2016). A computational literature review of the technology acceptance model. *International Journal of Information Management*, 36(6), 1248-1259.
- Nesher Shoshan, H., & Wehrt, W. (2022). Understanding “Zoom fatigue”: A mixed-method approach. *Applied Psychology*, 71(3), 827-852.
- Pantea, M. F., Cilan, T. F., Cuc, L. D., Rad, D., Bâtcă-Dumitru, G. C., Şendroi, C., ... & Gomoi, B. C. (2024). Optimizing Romanian managerial accounting practices through digital technologies: A resource-based and technology-deterministic approach to sustainable accounting. *Electronics*, 13(16), 3206.
- Park, E., Baek, S., Ohm, J., & Chang, H. J. (2014). Determinants of player acceptance of mobile social network games: An application of extended technology acceptance model. *Telematics and Informatics*, 31(1), 3-15.
- Peper, E., Wilson, V., Martin, M., Rosegard, E., & Harvey, R. (2021). Avoid Zoom fatigue, be present and learn. *NeuroRegulation*, 8(1), 47-47.
- Rad, D. (2025). Advancements in Behavioral AI: A Bibliometric Analysis. In *AI Technologies and Advancements for Psychological Well-Being and Healthcare* (pp. 37-52). IGI Global.
- Rad, D., Cuc, L. D., Lile, R., Balas, V. E., Barna, C., Pantea, M. F., ... & Rad, G. (2022). A cognitive systems engineering approach using unsupervised fuzzy C-means technique, exploratory factor analysis and network analysis—A preliminary statistical investigation of the bean counter profiling scale robustness. *International Journal of Environmental Research and Public Health*, 19(19), 12821.
- Rad, D., Dixon, D., & Rad, G. (2020). Digital outing confidence as a mediator in the digital behavior regulation and internet content awareness relationship. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 11(1), 84-95.
- Rad, D., Dughi, T., Costin, A., Rad, G., Bocîi, L. S., & Mircea, I. I. (2020, November). A Network Analysis of the Basic Psychological Needs, A Self-determination Theory Application Under the Cognitive Systems Engineering Paradigm. In *International Workshop Soft Computing Applications* (pp. 448-461). Cham: Springer International Publishing.
- Rad, D., Egerau, A., Roman, A., Dughi, T., Balas, E., Maier, R., ... & Rad, G. (2022). A preliminary investigation of the technology acceptance model (TAM) in early childhood education and care.

- BRAIN. *Broad Research in Artificial Intelligence and Neuroscience*, 13(1), 518-533.
- Rad, D., Egerău, A., Roman, A., Dughi, T., Kelemen, G., Balaş, E., ... & Kiss, C. (2023). On the technology acceptance behavior of Romanian preschool teachers. *Behavioral Sciences*, 13(2), 133.
- Rad, D., Magulod Jr, G. C., Balas, E., Roman, A., Egerau, A., Maier, R., ... & Chis, R. (2022). A radial basis function neural network approach to predict preschool teachers' technology acceptance behavior. *Frontiers in Psychology*, 13, 880753.
- Rad, D., Marcu, R., Dicu, A., Cuc, L. D., Roman, D., Olteanu, L. L., ... & Gavrilă-Ardelean, L. (2024). Network Analysis of Bulimia and Eating Behavior Regulation in Subclinical Population. *Psychiatry International*, 5(3), 515-531.
- Rad, D., Redeş, A., Roman, A., Egerău, A., Lile, R., Demeter, E., ... & Chiş, R. (2023). The use of theory of planned behavior to systemically study the integrative-qualitative intentional behavior in Romanian preschool education with network analysis. *Frontiers in psychology*, 13, 1017011.
- Rad, D., Roman, A., Runcan, R., Toderici, O., Stoian, C. D., Sinaci, M., ... & Arion, F. (2024). Adapting To the Unseen: Understanding Workplace Learning Disruptions In Educational Counseling During The COVID-19. *Migration Letters*, 21(S8), 1236-1255.
- Redeş, A., Rad, D., Roman, A., Bocoş, M., Chiş, O., Langa, C., ... & Baci, C. (2023). The Effect of the Organizational Climate on the Integrative–Qualitative Intentional Behavior in Romanian Preschool Education—A Top-Down Perspective. *Behavioral Sciences*, 13(4), 342.
- Riedl, R. (2022). On the stress potential of videoconferencing: definition and root causes of Zoom fatigue. *Electronic Markets*, 32(1), 153-177.
- Runcan, R., Rad, D., Runcan, P., & Măduţa, C. (2023). A Network Analysis Approach toward Adaptive Overt Narcissism Network. *Behavioral Sciences*, 13(6), 468.
- Saber Chtourou, M., & Souiden, N. (2010). Rethinking the TAM model: time to consider fun. *Journal of Consumer Marketing*, 27(4), 336-344.
- Scherer, R., Siddiq, F., & Tondeur, J. (2019). The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education. *Computers & education*, 128, 13-35.
- Shelleby, E. C., Votruba-Drzal, E., Shaw, D. S., Dishion, T. J., Wilson, M. N., & Gardner, F. (2014). Income and children's behavioral functioning: A sequential mediation analysis. *Journal of Family Psychology*, 28(6), 936.

- Tang, D., Fan, W., Zou, Y., George, R. A., Arbona, C., & Olvera, N. E. (2021). Self-efficacy and achievement emotions as mediators between learning climate and learning persistence in college calculus: A sequential mediation analysis. *Learning and Individual Differences*, 92, 102094.
- Wallace, L. G., & Sheetz, S. D. (2014). The adoption of software measures: A technology acceptance model (TAM) perspective. *Information & Management*, 51(2), 249-259.

BIBLIOMETRIC INSIGHTS ON EDUCATIONAL ASPECTS OF WELLNESS TOURISM: PROMOTING HEALTH AND CULTURAL AWARENESS

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Abstract: *The tourism and wellness sectors are combined in the wellness tourism sector which can satisfy people's dual requirements for travel and health and promote a healthy way of life. (Y. Li & Wen, 2024). Wellness tourism provides physical, quality-of-life, psychological, and environmental health advantages (Liao et al., 2023). In an era of increasing stress, wellness has transformed into a lifestyle of self-discovery and the wellness tourism industry is growing at a pace (K. H. Chen et al., 2013). This research aims to expand knowledge about wellness tourism by exploring its structural dimensions and potential as a multidisciplinary educational tool. By examining its integration into educational frameworks, the study highlights wellness tourism as a valuable resource for teaching sustainable practices, cultural awareness, and holistic health principles. Thus, this study conducted a bibliometric analysis of wellness tourism publications by extracting the data from the Scopus database. 495 documents were considered for final analysis through biblioshiny and Vosviewer. Performance analysis such as most productive authors, journals, papers, annual production patterns, and science mapping such as bibliographic coupling, world collaboration, co-citation analysis, etc was conducted. The findings provide insights for researchers, educators, and industry professionals to advance the field and incorporate wellness tourism into academic curricula and training programs.*

Key words: *wellness tourism; health education; bibliometric analysis; cultural education; mental wellbeing; physical wellbeing; yoga; spirituality; sustainability.*

Introduction

The term "wellness" refers to a comprehensive state of mind. It is a condition of being healthy in every aspect of life. Wellness is a

developing travel market segment that includes individual or group travel to resorts and locations that specialize in enhancing physical and mental health. (Kazakov & Oyner, 2021). A multitude of scholars emphasize the complex nature of personal well-being, which includes environmental, social, and mental dimensions. Engaging in meaningful and healthful activities can bring harmony to one's mental, spiritual, physical, or biological health (Kotur, 2022). Due to intense social pressure, competitiveness, and a fast-paced life that has come with the recent rapid economic development, most individuals feel burned out which has led to an increase in persons with subhealth traits. Body, mind, and interpersonal interactions are the three areas that show signs of burnout. Overlooking this issue has negative consequences for work and personal life, diminishes social production efficiency, and threatens social stability. The importance of health and wellness activities has increased over the past 20 years, particularly in the wake of the pandemic (Liao et al., 2023). Living a healthy lifestyle involves more than just avoiding illness and managing stress. It also involves having a sense of fulfillment and purpose in life (DUNN, 1959). Wellness comprises mental, spiritual, environmental, and physical aspects. It enhances well-being by balancing the body, mind, and spirit through physical exercise, mental relaxation, and intellectual stimulation. (Rodrigues et al., 2010). The tourism business has capitalized on people's desire for well-being by enticing them to travel abroad to enhance their health. Tourism provides opportunities to explore new experiences outside of the workplace and routine life (K. H. Chen et al., 2014). The tourism and wellness sectors are combined in the wellness tourism sector which can satisfy people's dual requirements for travel and health and promote a healthy way of life. (Y. Li & Wen, 2024). Wellness tourism provides physical, quality-of-life, psychological, and environmental health advantages (Liao et al., 2023). Engaging in leisure activities boosts subjective well-being.

Research on wellness tourism and changing demand has shown that travelers' needs for well-being have evolved. According to (Joseph Sirgy, 2019), those who are seeking happiness and a good quality of life are searching for locations that may satisfy their demands for many forms of well-being, including mental, spiritual, and cultural.

Wellness tourism as an educational tool

Historically, tourism has been a tool for cultural learning and experience. Wellness tourism continues this tradition by educating travelers about local cultures, practices, and health traditions, thereby enhancing their overall experience and understanding of the destinations they visit (Topp, 2011).

Wellness tourism serves as an effective educational tool by facilitating

informal learning experiences that enhance health knowledge. The study highlights that wellness tourism can promote health education through the acquisition of knowledge related to physical and mental health, stress management, and nutrition. By engaging in wellness services, travelers can experience behavioral changes and improved health attitudes, ultimately contributing to better health outcomes (Savella & Kóródi, 2020). Wellness tourism can educate consumers about healthy lifestyles, nutritious practices, and safe travel experiences. By integrating wellness principles into tourism and hospitality education, people can develop skills to create innovative wellness products and services, ultimately leading to a more informed and health-conscious clientele. This approach fosters a deeper understanding of wellness trends within the industry (Okumus & Kelly, 2022). Wellness centres within hotels not only offer standard services like hydrotherapy and fitness but also focus on educating visitors about well-being practices and healthy lifestyle. This holistic approach enhances guests' subjective feelings of well-being and aligns with modern trends in the leisure industry. By integrating educational elements, hotels can achieve competitive advantages and contribute to the overall development of wellness tourism (Rančić Demir et al., 2021). The intersection of wellness tourism and education offers unique opportunities for enhancing the cultural competence, health, and personal growth of students. This integration involves combining educational, sports, medical, and biological technologies to promote a healthy lifestyle and social adaptation skills among students. Implementing wellness tourism practices in universities can improve students' physical fitness and health, contributing to their overall educational progress and personal development. By incorporating wellness tourism into curricular and extracurricular activities, educational institutions can significantly improve students' fitness levels and overall well-being, addressing urgent challenges in higher education (Malyshev et al., 2016).

There is a growing exploration of culture and art, yoga, spirituality, wellness, sports, hot springs, spas, and other domains that were not traditionally connected to wellness tourism. Due to this trend, more studies are concentrating on a holistic approach to well-being. (Dillette et al., 2021), Which highlights the expanding significance of wellness tourism in the travel sector (Kazakov & Oyner, 2021). The popularity of wellness tourism is rising on a national and international scale. (Sopha et al., 2019). The global wellness economy has grown at a phenomenal pace of 6.6% each year. It increased from USD 4.3 trillion in 2017 to USD 4.9 trillion in 2019 (Kandan Parakkal et al., 2024) . The rapidly evolving wellness sector caters to healthy people of all ages and emphasizes illness prevention and maintenance of health. (Sopha et al., 2019)

Research on wellness tourism is still lacking despite its growing popularity and various health and educational benefits (Meera & Vinodan, 2019). Additionally, even though it's a growing part of travel, the field is still in its early stages, therefore further research is necessary to provide a strong scientific foundation. (Tuzunkan, 2018). With the use of a bibliometric technique, this study attempts to assess the recent state of the topic by analyzing global research work. It also serves as a guide for new researchers interested in the topic.

This study reviews all of the articles published between 1996 and June 28, 2024, to guide future researchers who may be interested in the topic. It also attempts to evaluate the current status of the field by reviewing literature from around the globe using a bibliometric approach based on science mapping and performance analysis. Accordingly, there were very few research has been done that evaluates wellness literature using bibliometrics. Table 1 presents the bibliometric studies done on wellness tourism. It can be observed from the table that bibliographic coupling, world collaboration network, and thematic analysis have not been performed in any studies except in two studies. One of these studies has used bibliographic coupling, another has analyzed thematic analysis. However, this analysis was conducted on data extracted using only 1-2 keywords that may limit the publication's reach. Most of these studies have used the Web of Science database. Comparatively few studies have used the Scopus database. Additionally, Most of these studies have used Vos Viewer software for data analysis. None of these have used biblioshiny along with Vos Viewer. Thus, this study aims to fill these research gaps.

Title	Author	Time covered	Database, and analytical tool	Science Mapping	Gap
"Bibliometric analysis on wellness tourism – citation and co-citation analysis	(Suban, 2023)	1998-2021	Scopus, Vosviewer	Co-citation of sources, references, author	None of these studies have analyzed the bibliographic coupling, thematic analysis, or country collaboration network. Most of these studies have used either the Web of Science database,
Wellness tourism: a bibliometric analysis during 1998–2021	(Suban, 2022)	1998-2021	Scopus, Vosviewer	Keyword co-occurrence	
Wellness Tourism: A Bibliometric	(Martins et al., 2023)	2013-2023	Web of Science, Vosviewer	Keyword co-occurrence, co-authorship by country	

Analysis Approach					Comparatively few studies have used the Scopus database.
Visual analysis of the international wellness tourism WOS literature from 1992 to 2019	(Wang et al., 2021)	1992-2019	Web of Science,	Keywords occurrence, co-citation knowledge map.	Most of these studies have used Vos viewer software for data analysis. None of these have used biblioshiny along with Vos Viewer.
Wellness tourism services innovation: A bibliometric review and future research agenda	(W. Li et al., 2024)	2013-2023	Web of Science, CNKI Citespace software	co-author network map, institutional cooperation network, keyword clustering, evaluation index,	
Wellness Tourism Management Research A bibliometric analysis	(Gulyas & Molnar, 2023)	2012-2022	Web of Science and Scopus	Co-citation of all, coupling, keyword analysis co-citation analysis, bibliographic coupling, reference analysis, and keywords analysis.	Performance analysis has not been done in this paper, Only a single search term "Wellness tourism" was used to retrieve the data.
Bibliometric analysis of publications on wellness tourism	(Mohanani & Shekhar, 2022)	2006-2021	Web of Science, biblioshiny	Trending key, thematic map, word cloud	"Wellness" and "tourism" are the only keywords used to extract data."

Table 1: A literature review of bibliometric studies on wellness tourism

Objectives

- To identify the most productive authors, documents, countries, and sources.
- To assess the annual production of articles on wellness tourism over the years and production patterns.
- To evaluate the various themes based on their relevancy and density.
- To find out the most collaborative country
- To categorize the paper into various themes through co-citation analysis and bibliographic coupling.

It is expected that reviewing scientific publications will facilitate the planning of future research. The results of the study are also expected to contribute to the creation of scholarly knowledge by locating and evaluating publications and trends in this industry.

Research Method

Bibliometric analysis is a statistical method to analyze academic papers quantitatively to create indices of research performance and scientific activity. (Zyoud et al., 2015).

(Murgado-Armenteros et al., 2015)state that data from several bibliographic databases are required for bibliometric analysis. Several well-known databases are utilized in bibliometric analysis, including Web-of-Science, Google Scholar, and Scopus. However, when it comes to journal coverage and citation analysis, Scopus outperforms Web of Science and Google Scholar (Falagas et al., 2008; Zyoud et al., 2015). For citation analysis and bibliographic searches, Scopus is a useful substitute for the Web of Science. It can conduct similar search activities (Gaviria-Marin et al., 2019).

Scopus provides a wider selection of journals in comparison to Web-of-Science and PubMed, along with faster and more comprehensive citation analysis. (Falagas et al., 2008). Thus, this study extracts wellness tourism research metadata from Scopus by using the relevant keywords. The search focused on the article abstracts, title, and keywords.

A bibliometric analysis was conducted to compile and assess wellness tourism research studies. The bibliometric analysis was conducted manually using approaches such as bibliometrics. (Yoon & Lee, 2012), and meta-analysis (Kipper et al., 2020), scientometrics (Mingers & Leydesdorff, 2015). Science mapping analysis and performance analysis are two of the primary methodologies that are combined in bibliometric analysis. Science mapping analysis is a spatial depiction of the relationships between various scientific performers. On the other hand, performance analysis examines how research components contribute to a certain field. (Donthu et al., 2021). Both types of techniques are used in this study to give a comprehensive analysis of the WT. Performance analysis includes annual structure, top-cited articles, productive nations, authors, and universities. We use VOSviewer and biblioshiny to analyze the bibliographic coupling, world collaboration, thematic analysis, and co-citations of documents using scientific mapping (network analysis).

Keywords Identification

The search was conducted using the following Boolean string to locate publications with wellness tourism in the title, abstracts, or keyword list: TITLE-ABS-KEY ("Wellness tourism" OR "Spa tourism" OR "yoga tourism" OR "wellness traveler" OR "wellness tourist" OR "well-being tourism" OR "spiritual tourism" OR "Wellness" AND "Tourism") in

Scopus database.

Initial search

We conducted a bibliographic search for wellness tourism on June 28, 2024, using the Scopus database. Scopus is a well-organized database often utilized for quantitative investigations. (Donthu et al., 2021). Our study covers the publications published between 1996 and June 2024. The initial search yielded 1219 documents, which were further filtered based on the parameters outlined below.

Inclusion and exclusion

The search was restricted by document type (articles, review), publishing stage (final), source type (Journal), and language (English) when the filter was applied. The database was further reduced by selecting keywords such as Tourism, Wellness Tourism, Wellness, Spiritual Tourism, happiness, nature-based tourism, nature, subjective well-being, well-being tourism, well-being, recreational facility, health impact, life satisfaction, recreational activity, yoga tourism, health resorts, spas, yoga, quality of life, spirituality, health and wellness, wellbeing, health and wellness tourism, spa tourism to find more relevant papers to meet objectives of research. The screening procedure reduced the data set from 1219 documents to 495 articles. The analysis was conducted on 495 articles from the final data collection.

Results and discussion

Performance analysis

Descriptive information

Table 2 displays the scientific article production measured from 1996 to 2024. The 495 wellness tourism papers were published between 1996 and 2024, with an average publication age of 5.39 years. There were 19.4 citations on average per document. There were 495 papers total consisting of 469 articles and 26 review papers. The findings show 1108 authors with 1441 author keywords, comprising 109 single-authored papers.

Table 2 Descriptive analysis	
Time span	1996:2024
Sources	196
Papers	495
Growth Rate Per Annum %	12.18
Average Age of Document	5.39
Average citations per document	19.4
Author's Keywords (DE)	1441

Authors	1108
Single-authored docs	109
Authors of Single-authored docs	102
International co-authorships %	19.8
Co-Authors per Doc	2.67
No of articles	469
No review papers	26

Annual Publication Trends

This article examines research on wellness tourism published between 1996 and June 2024. An examination of the number of publications over time reveals changes in this field's research hotspots and trends for future development. Figure 1 illustrates that between 1996 and 2009, there were very few publications. 2010 was the first peak where number of publications rose from 4 to 20 articles. In 2011 it showed a little downfall with 12 publications. The research on wellness tourism experienced a phase of high expansion between 2011 and 2023 and reached its peak in 2023 with 83 articles. The annual quantity of articles published has remained higher than it was during the preceding period. There are only 25 articles in 2024 because articles published till June only are considered.

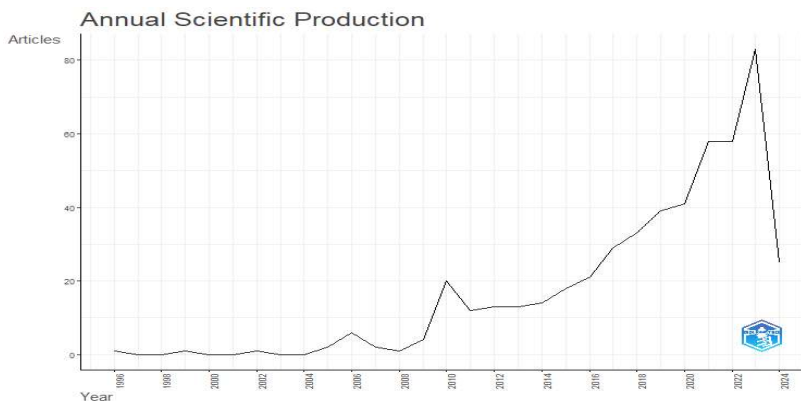


Figure 1. Annual production pattern

Most Prolific Authors

Table 3 displays the scientific productivity of authors, measured by their number of publications, h-index, and g-index. “Leet TJ” emerged as a most was the most prolific author based on the number of papers (NP) (7), h-index (6), and g-index (7) followed by “CHEN K-H” but he received the most citations among all these authors.

AUTHORS	NO OF PAPERS	G-INDEX	H-INDEX	TC
LEE TJ	7	7	6	174
CHEN K-H	6	6	6	293
SZROMEK AR	6	6	6	102
LI Y	6	6	4	149
CHANG F-H	5	5	5	255
HUANG L	5	5	4	201
PHUTHONG T	5	2	2	6
HAN H	4	4	4	97
HUDSON S	4	4	4	137
KOMPPULA R	4	4	4	179

Table 3: Most Productive Author

Analysis of most cited documents

There are 495 documents, out of which the top 10 articles based on citation received were presented in Table 4. The result of the performance analysis shows that “Health and Wellness Benefits of Travel Experiences: A Literature Review” was a highly productive article with 243 citations followed by “Wellness Tourists: in Search of Transformation” with 228 citations. Out of all the documents, 480 articles had fewer than 100 citations, with only 15 publications having more than 100 citations.

Title	Authors	Journal	Year	Total Citations	DOI
“Health and Wellness Benefits of Travel Experiences : A Literature Review	(C. C. Chen & Petrick, 2013)	Journal of Travel Research	2013	243	10.1177/0047287513496477
Wellness tourists: in search of transformation	(Voigt et al., 2011)	Tourism Review	2011	228	10.1108/16605371111127206
Health and medical	(Hall, 2011)	Tourism Review	2011	188	10.1108/16605371111127198

tourism: a kill or cure for global public health?					
Holiday recovery experiences , tourism satisfaction, and life satisfaction - Is there a relationship ?	(C. C. Chen et al., 2016)	Tourism Management	2016	143	10.1016/j.tourman.2015.09.016
Essential customer service factors and the segmentation of older visitors within wellness tourism based on hot springs hotels	(K. H. Chen et al., 2013)	International Journal of Hospitality Management	2013	139	10.1016/j.ijhm.2013.05.013
Yoga tourism as a niche within the wellness tourism market	(Lehto et al., 2006)	Tourism Recreation Research	2006	121	10.1080/02508281.2006.11081244
The effect of atmospheric cues and involvement on pleasure and relaxation: The spa hotel context	(Loureiro et al., 2013)	International Journal of Hospitality Management	2013	121	10.1016/j.ijhm.2013.04.011
Towards a picture of tourists' happiness	(Filep & Deery, 2010)	Tourism Analysis	2010	120	10.3727/108354210X12864727453061

Assessing the Perceived Restorative Qualities of Vacation Destinations	(Lehto, 2013)	Journal of Travel Research	2013	116	10.1177/0047287512461567
Testing the role of tourists' emotional experiences in predicting destination image, satisfaction, and behavioral intentions: A case of wellness tourism	(Sharma & Nayak, 2018)	Tourism Management Perspectives	2018	110	10.1016/j.tmp.2018.07.004

Table 4: Most cited documents

Productive Source Journals

There were 495 articles chosen for this review, and 196 journals published them. The first 12 extremely productive journals are listed in Table 5. “Sustainability (Switzerland)” with 32 published articles is the most productive publication among them. The “International Journal of Spa and Wellness”, with 31 publications, and the “International Journal of Religious Tourism and Pilgrimage” with 20 documents are in close succession. These journals' publications suggest that they are the most influential ones in the field of the wellness tourism sector, providing scholars with a valuable resource for their research in this field.

<i>Sources</i>	<i>Articles</i>
<i>“Sustainability (Switzerland)”</i>	<i>32</i>
<i>International Journal of Spa and Wellness</i>	<i>31</i>
<i>International Journal of Religious Tourism and Pilgrimage</i>	<i>20</i>
<i>Tourism Recreation Research</i>	<i>15</i>
<i>International Journal of Environmental Research and Public Health</i>	<i>12</i>

<i>Geojournal of Tourism and Geosites</i>	11
<i>Journal of Travel and Tourism Marketing</i>	11
<i>Tourism Management Perspectives</i>	10
<i>Tourism Review</i>	10
<i>Current Issues in Tourism</i>	9
<i>International Journal of Tourism Research</i>	9
<i>Journal Of Hospitality and Tourism Management”</i>	9

Table 5: Most Productive sources

Most cited countries

Table 6 demonstrates that the USA ranked first among all countries with over 1096 citations in wellness tourism research. China and the United Kingdom produced more than 900 citations. With average article citations of 22.5 and 46.9 respectively. But in terms of average article citations, the United Kingdom was most productive by receiving an average of 46.9 citations per document followed by the USA at 40.6 citations per article.

“Country	TC	Average Article Citations
<i>Usa</i>	1096	40.6
<i>China</i>	1035	22.5
<i>United Kingdom</i>	938	46.9
<i>Australia</i>	658	29.9
<i>India</i>	364	10.1
<i>Portugal</i>	354	27.2
<i>Spain</i>	328	13.7
<i>Finland</i>	277	23.1
<i>Japan</i>	199	22.1
<i>Italy</i>	181	20.1”

Table 6: Most cited countries

Science Mapping

World Collaboration

The collaboration network shows interactions and collaborations among authors of different countries on a particular topic. Table 7 lists the top 10 collaborations among countries on wellness tourism research. China and USA have the most collaboration work (6) following China with Australia (5), Australia with Korea (4), and China with Hong Kong (4). China and the USA collaborate the most with author countries on the list.

Figure 2 shows collaboration among countries globally. The blue colour

depicts the presence of publication in a particular country and the grey colour depicts the absence of publication in a particular nation. The countries that produce the most publications are represented by dark blue color and red lines indicate the collaboration networks of publishing countries. Countries like China, Hong Kong, Australia, the USA India, and Korea collaborated actively with other countries.

“From	To	No of Papers
China	USA	6
China	Australia	5
Australia	Korea	4
China	Hong Kong	4
India	USA	3
USA	Australia	3
USA	Hong Kong	3
USA	Korea	3
China	Korea”	2

Table 7 Collaboration between countries

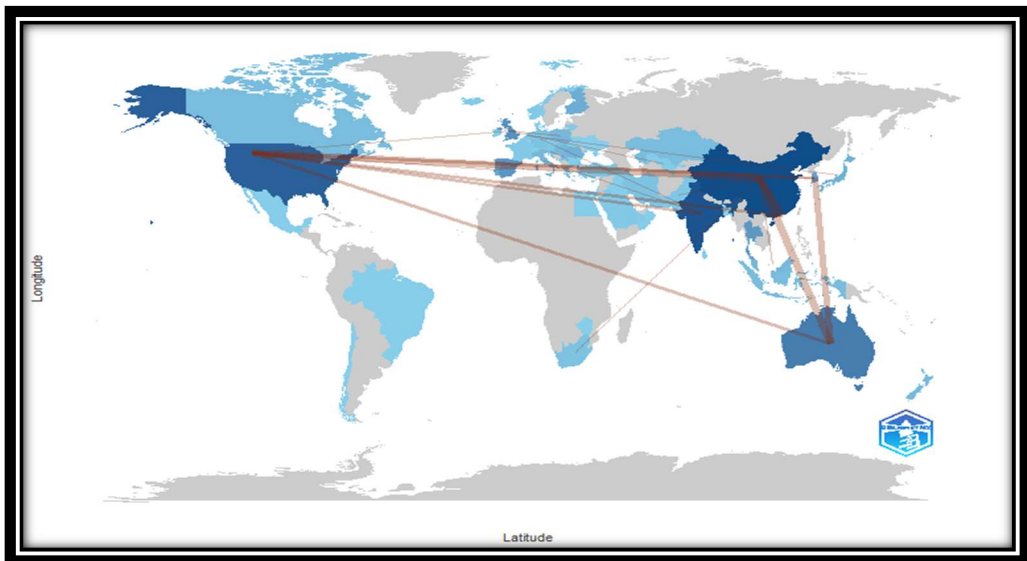


Figure 2 world collaboration network

Thematic analysis

Themes are subtle, abstract phrases, patterns, or procedures that make a phenomenon more understandable (Mishra & Dey, 2022). The thematic map uses a 2-Dimensional plot to show the typological motifs (Cobo et al., 2011). Relevance degree and Development degree are the two dimensions that divide the plot into 4 quadrants. Each theme is represented by a bubble on the plot as seen in Figure 3

The motor theme, which is an essential theme with high density and high centrality, is in the upper right quadrant. These themes highlight the most developed and relevant themes for wellness tourism research. Figure 3 shows four motor themes namely (Sustainable development, Quality of Life, and health impact); (tourism, human, and medical tourism); (health services, economies, and health services); and (male, female, and travel) are at the very core of the domain and most widely discussed topic.

The niche theme which has low relevance and high development, is located in the upper left quadrant. Figure 3 shows three Niche themes namely, (commerce, competition), (Austria, gis) and (genetic algorithm and health tourism) that may not have a substantial impact on the broader landscape.

The lower left quadrant contains themes that are either emerging or declining and have little development and significance. Figure 3 shows three themes in this quadrant namely, (sustainable tourism and planning), (forestry) and (mountain region, assessment method, and geotourism) that have less significance and poorly developed themes.

The basic theme is in the lower right quadrant of the plot showing high relevance and low development degree. Figure 3 shows two Basic themes namely, (decision making, geothermal energy, and spa tourism) and (tourist destination, tourism development, and tourist behavior) these are significant but underdeveloped regions. Scholars are advised to further study Basic themes because they are less developed and have high relevance in the domain.

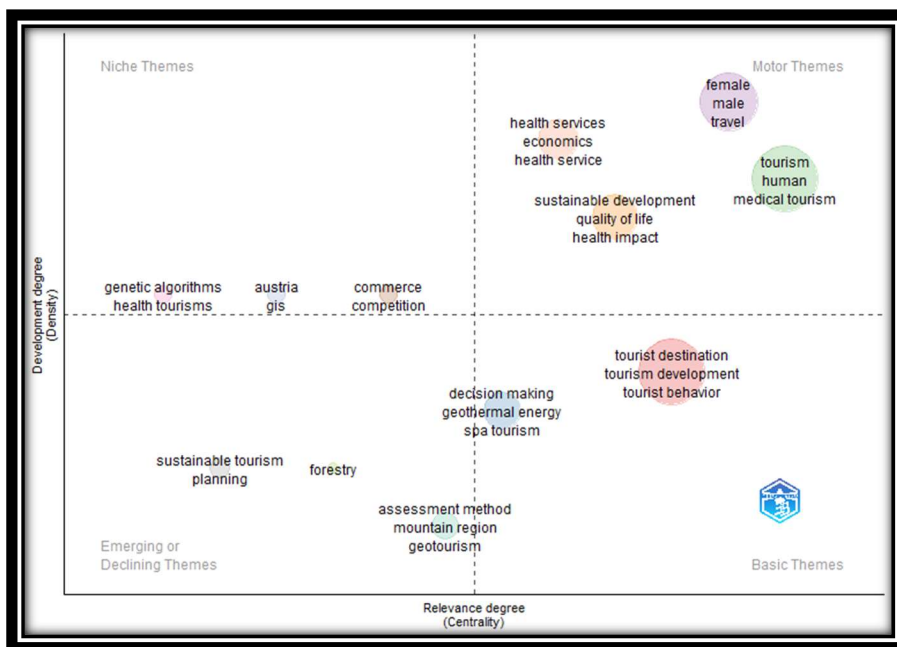


Figure 3 Thematic analysis

Co-citation analysis

Co-citation calculates the quantity of papers that have cited a certain group of articles (Culnan, 1987). “When a researcher cites any work of any given author along with the work of any other author in a new document” (Culnan, 1986). The top 50 papers were utilized as a starting point to determine how often other researchers cited two or more documents together. Figure 4 shows 3 clusters having a red, blue, and green color. Researchers working on the same theme can refer to the work of these authors of clusters for better understanding.

In Cluster 1 (Red color), 10 documents are listed indicating that in most of the research, other authors have cited the group of these 10 documents together. Cluster 1 has a Spiritual tourism theme thus scholars working on spiritual tourism can refer to the work of these authors.

In Cluster 2 (blue color), 31 documents are listed that are cited together by researchers. Well-being tourism and related fields are assessed in cluster 2. Scholars working on wellness tourism and related terms like spa tourism, spatial stigma, heritage tourism, tourist attitude, ethnic tourism, and health tourism can refer to the work of this cluster.

Cluster 3 (green colour) has 9 articles listed that are cited together by researchers. Psychological aspects of wellness tourism are discussed in this cluster. Scholars can refer to the work in their research related to the psychological aspects of wellness tourism.

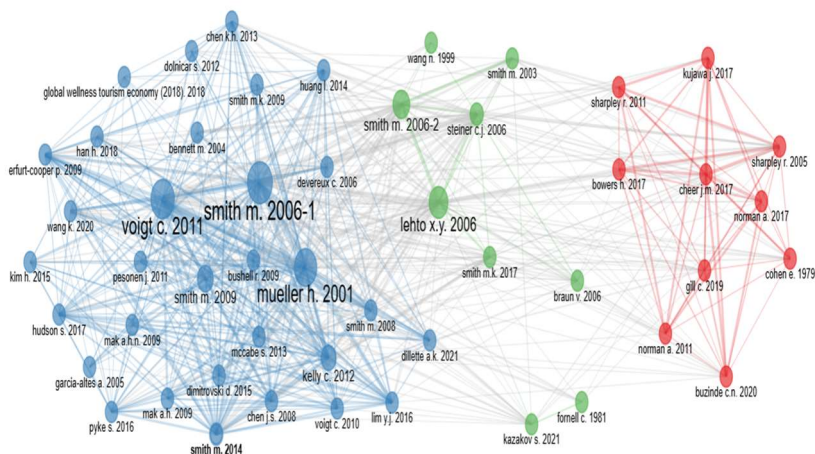


Figure 4: Co-citation analysis

Bibliographic coupling

Bibliographic coupling uses citation analysis to determine the degree of similarity between publications. This occurs when the bibliographies of two works both cite the same third work (Fayaz et al., 2022). The

"coupling strength" becomes stronger when more publications are cited jointly by two documents (Kleminski et al., 2022) Quantitative network analysis techniques enable the mapping of a study field and the identification of subgroups (clusters) of research by compiling the connections between all the publications in the field (Zupic & Cater, 2015).

Cluster 1 (red): Linking well-being and tourism

The first cluster is the largest, having 64 articles. The articles discussed the linkage between well-being and tourism. Health tourism, religious tourism, spa tourism, happiness, yoga tourism, tourist experiences, and social engagement were major themes in the articles. These articles discussed the way to improve wellness via tourism. The cluster provides us with a way to link wellness with tourism such as people travelling for yoga or spas which help in wellness. By travelling, social engagement will be more which is positively connected with emotional wellness.

Cluster 2 (green): Holistic Wellness by Tourism

The second cluster has 41 articles covering the holistic approach to wellness by tourism. The cluster covers various aspects such as psychotherapeutic healing, medical spa, international wellness tourism experience, forest bathing, medical tourism, health spa, stress reduction, eco-tourism, healing effects, quality of life, motivation, and satisfaction factors. These topics cover keywords to understand the ways to holistic wellness through tourism.

Cluster 3(blue): Experience of wellness tourism

The third cluster has 40 articles highlighting the factors exploring experiences of wellness tourism. The cluster discussed hotels' customer services, spiritual retreats, previous experiences, motivating factors, observational studies of wellness, and religious travelling experiences of various countries such as New Zealand, Croatia, China, Taiwan, Australia, Thailand, Queensland, Bama, Finland, Switzerland, and Turkey. The cluster helps to understand the reasons that can enhance the customer experience of wellness tourism.

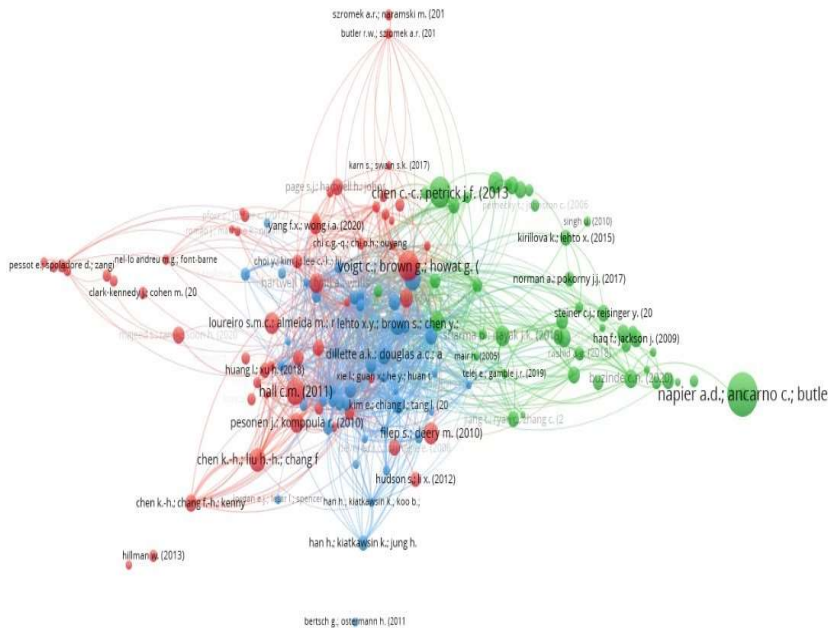


Figure 5 Bibliographic coupling

Conclusion

The current research contributes to a better knowledge of the current status of wellness tourism research. This study spans 28 years (from 1996 to June 28, 2024), providing a thorough overview of the field's publications. There were very few bibliometric analyses on wellness tourism. Data from 1996 to the present has been extracted from the Scopus database. We observed a rising trend in the publication from 2011. In terms of citations, Chen K-H is the most prolific author, whereas Lee TJ is the most prolific based on publishing and index. Most articles (32) on wellness tourism have been published by "Sustainability (Switzerland)". A paper titled "Health and Wellness Benefits of Travel Experiences: A Literature Review" published in "The Journal of Travel Research" in 2013 by (C. C. Chen & Petrick, 2013) has received the highest number of citations (243). The USA ranked first by getting 1096 citations. Furthermore, China is the nation that collaborates the most. It has collaborated with many countries and published the highest number of articles with USA (6), followed by Australia (5), Hongkong (4) with Korea (2). The thematic analysis highlighted the niche themes, motor themes, and basic and emerging themes. Furthermore, Co-citation analysis has formed 3 clusters focused on spiritual tourism, well-being tourism and related fields, and psychological aspects of wellness tourism. Similarly, the bibliographic coupling has three clusters. The

first cluster tries to link well-being with tourism, 2nd cluster discusses holistic wellness by tourism and 3rd cluster highlights the factors exploring experiences of wellness tourism.

Theoretical implications

This bibliometric analysis educates academicians on research trends, key themes, gaps collaborations, and thematic developments in wellness tourism, providing a foundation for future research. This study can help them to detect and comprehend new trends in the discipline, including terminology, and field reference studies related to this sector. This sheds light on the importance of the topic and may influence travel products in the future. The research introduces new theoretical pathways by proposing the incorporation of wellness tourism into academic curricula. It highlights its potential as a tool for teaching sustainable practices, cultural awareness, and health principles, enriching education theory with practical applications from the tourism sector. It broadens the theoretical understanding of how tourism serves not only as leisure but also as an informal educational medium. Tourism academics and professionals can use these findings to guide future studies on wellness tourism.

Managerial implications

Globalization has enabled and continues to expand health and wellness tourism.

The participating nations receive billions of dollars in revenue from this industry annually. To increase the wellness tourism business in the ASEAN area, member nations must collaborate and communicate more effectively. The rapid growth of the global wellness economy presents opportunities for businesses to tap into this lucrative market. The findings are significant for scientists, academics, policymakers, research center staff, and government officials.

Tourism companies should focus on visitors who are concerned about their health and well-being. To attract visitors from around the world, managers should carefully consider how to educate people about health consciousness and market their products by providing chances for them to experience new things, de-stress both physically and emotionally, and promote social development. Accreditation for healing therapies and practitioners ought to be given according to their qualifications and expertise. The value proposition of wellness destinations is composed of a package that should be customized based on the resources that are available in each area, the wellness demands, and market trends. It is also advised that travel agencies and tour operators offer integrated tourism packages that are comprehensive and wellness oriented. Furthermore, as the importance of wellness gains popularity, businesses should broaden their product offers to include those from lower

socioeconomic backgrounds.

Tourism managers can develop wellness packages that emphasize educational components, such as workshops on cultural wellness practices, stress management, nutrition, or mindfulness. This dual purpose of leisure and learning can help differentiate their offerings in a competitive market. Managers can use wellness tourism as a platform to advocate sustainable and local cultural practices. Initiatives like eco-friendly resorts, locally sourced wellness products, and cultural education can align their business objectives with global sustainability goals.

Educational institutions can design specialized programs or courses that integrate wellness tourism principles. These programs can focus on sustainable practices, cultural competence, and holistic health, providing students with unique skills and knowledge aligned with industry trends. The findings highlight the need for collaboration between wellness centers, educational institutions, and tourism operators. Developing partnerships to create integrated programs can lead to a more cohesive approach to promoting wellness tourism.

The study also suggests policymakers to support wellness tourism through initiatives such as infrastructure development, tax benefits for eco-friendly resorts, and funding for wellness-related educational programs. These efforts can foster regional development and promote a healthy lifestyle among the populace.

Limitations and Future Directions

The paper has some limitations, including relying on a single database instead of multiple sources for retrieval of data. While Scopus offers a huge number of research papers that reflect the subject, we believe that using multiple databases will provide more comprehensive coverage.

The wellness tourism literature excluded doctoral theses, conference proceedings, textbooks, books and unpublished papers. We evaluated only English-published publications, potentially undervaluing research undertaken in other languages. This study was only analyzed using the VOSviewer and biblioshiny. Other tools such as Bibexcel, Gephi, , Bibexcel, Tableau and CiteSpace II can be used together with VOSviewer and biblioshiny for future research. Future investigations may cover more wellness and health-related words. Sustainable wellness tourism is another area of research that can be explored further in future studies (Wolf et al., 2017). Future research directions should be investigated from the supply side to examine the distinctive characteristics of wellness sites and from the demand side to assess customer demands for additional wellness tourism products (Dini & Pencarelli, 2022). I.e. Future academics may find the results useful in identifying research topics in wellness research that could gain

popularity in the coming years. As a result, this study can be used as a beginning point by academics and professionals interested in introducing wellness tourism.

References

- Chen, C. C., Huang, W. J., & Petrick, J. F. (2016). Holiday recovery experiences, tourism satisfaction and life satisfaction - Is there a relationship? *Tourism Management*, 53. <https://doi.org/10.1016/j.tourman.2015.09.016>
- Chen, C. C., & Petrick, J. F. (2013). Health and Wellness Benefits of Travel Experiences: A Literature Review. *Journal of Travel Research*, 52(6). <https://doi.org/10.1177/0047287513496477>
- Chen, K. H., Chang, F. H., & Kenny, C. W. (2013). Investigating the wellness tourism factors in hot spring hotel customer service. *International Journal of Contemporary Hospitality Management*, 25(7). <https://doi.org/10.1108/IJCHM-06-2012-0086>
- Chen, K. H., Chang, F. H., & Tung, K. X. (2014). Measuring wellness-related lifestyles for local tourists in Taiwan. *Tourism Analysis*, 19(3). <https://doi.org/10.3727/108354214X14029467968682>
- Cobo, M. J., López-Herrera, A. G., Herrera-Viedma, E., & Herrera, F. (2011). An approach for detecting, quantifying, and visualizing the evolution of a research field: A practical application to the Fuzzy Sets Theory field. *Journal of Informetrics*, 5(1). <https://doi.org/10.1016/j.joi.2010.10.002>
- Culnan, M. J. (1986). The Intellectual Development of Management Information Systems, 1972–1982: A Co-Citation Analysis. *Management Science*, 32(2). <https://doi.org/10.1287/mnsc.32.2.156>
- Culnan, M. J. (1987). Mapping the intellectual structure of MIS, 1980–1985: A co-citation analysis. *MIS Quarterly: Management Information Systems*, 11(3). <https://doi.org/10.2307/248680>
- Dillette, A. K., Douglas, A. C., & Andrzejewski, C. (2021). Dimensions of holistic wellness as a result of international wellness tourism experiences. *Current Issues in Tourism*, 24(6). <https://doi.org/10.1080/13683500.2020.1746247>
- Dini, M., & Pencarelli, T. (2022). Wellness tourism and the components of its offer system: a holistic perspective. In *Tourism Review* (Vol. 77, Issue 2). <https://doi.org/10.1108/TR-08-2020-0373>
- Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, 133. <https://doi.org/10.1016/j.jbusres.2021.04.070>

- DUNN, H. L. (1959). High-level wellness for man and society. *American Journal of Public Health*, 49(6). <https://doi.org/10.2105/ajph.49.6.786>
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2). <https://doi.org/10.1096/fj.07-9492lsf>
- Fayaz, N., Khandai, S., Zupic, I., & Kaur, A. (2022). GOING BACK TO THE ROOTS: A BIBLIOMETRIC AND THEMATIC ANALYSIS OF WOMEN ENTREPRENEURSHIP. *Dynamic Relationships Management Journal*, 11(2). <https://doi.org/10.17708/DRMJ.2022.v11n02a07>
- Filep, S., & Deery, M. (2010). Towards a picture of tourists' happiness. *Tourism Analysis*, 15(4). <https://doi.org/10.3727/108354210X12864727453061>
- Gaviria-Marin, M., Merigó, J. M., & Baier-Fuentes, H. (2019). Knowledge management: A global examination based on bibliometric analysis. *Technological Forecasting and Social Change*, 140. <https://doi.org/10.1016/j.techfore.2018.07.006>
- Gulyas, G., & Molnar, E. I. (2023). Wellness Tourism Management Research A bibliometric analysis. *Management and Marketing*, 18(2). <https://doi.org/10.2478/mmcks-2023-0010>
- Hall, C. M. (2011). Health and medical tourism: A kill or cure for global public health? In *Tourism Review* (Vol. 66). <https://doi.org/10.1108/16605371111127198>
- Joseph Sirgy, M. (2019). Promoting quality-of-life and well-being research in hospitality and tourism. *Journal of Travel and Tourism Marketing*, 36(1). <https://doi.org/10.1080/10548408.2018.1526757>
- Kandan Parakkal, A., Vazhakkatte Thazhathethil, B., & George, B. (2024). The Physical, Mental, Spiritual, and Environmental (PMSE) Framework for Enhancing Wellness Tourism Experiences and Its Validation in the Context of Kerala, India. *Administrative Sciences*, 14(7), 140. <https://doi.org/10.3390/admsci14070140>
- Kazakov, S., & Oyner, O. (2021). Wellness tourism: a perspective article. In *Tourism Review* (Vol. 76, Issue 1). <https://doi.org/10.1108/TR-05-2019-0154>
- Kipper, L. M., Furstenuau, L. B., Hoppe, D., Frozza, R., & Iepsen, S. (2020). Scopus scientific mapping production in industry 4.0 (2011–2018): a bibliometric analysis. *International Journal of Production Research*, 58(6). <https://doi.org/10.1080/00207543.2019.1671625>

- Kleminski, R., Kazienko, P., & Kajdanowicz, T. (2022). Analysis of direct citation, co-citation and bibliographic coupling in scientific topic identification. *Journal of Information Science*, 48(3). <https://doi.org/10.1177/0165551520962775>
- Kotur, A. S. (2022). Exploring the wellness dimensions of wine tourism experiences: a netnographic approach. *International Journal of Wine Business Research*, 34(4). <https://doi.org/10.1108/IJWBR-07-2021-0040>
- Lehto, X. Y. (2013). Assessing the Perceived Restorative Qualities of Vacation Destinations. *Journal of Travel Research*, 52(3). <https://doi.org/10.1177/0047287512461567>
- Lehto, X. Y., Brown, S., Chen, Y., & Morrison, A. M. (2006). Yoga tourism as a niche within the wellness tourism market. *Tourism Recreation Research*, 31(1). <https://doi.org/10.1080/02508281.2006.11081244>
- Li, W., D., M., Yuanhao, Q., & Z., Y. (2024). WELLNESS TOURISM SERVICES INNOVATION: A BIBLIOMETRIC REVIEW AND FUTURE RESEARCH AGENDA. *CACTUS*, 5(2). <https://doi.org/10.24818/cts/5/2023/2.02>
- Li, Y., & Wen, T. (2024). Psychological mechanism of forest-based wellness tourism decision-making during the prevention and control of COVID-19. *Forest Policy and Economics*, 160. <https://doi.org/10.1016/j.forpol.2023.103140>
- Liao, C., Zuo, Y., Xu, S., Law, R., & Zhang, M. (2023). Dimensions of the health benefits of wellness tourism: A review. In *Frontiers in Psychology* (Vol. 13). <https://doi.org/10.3389/fpsyg.2022.1071578>
- Loureiro, S. M. C., Almeida, M., & Rita, P. (2013). The effect of atmospheric cues and involvement on pleasure and relaxation: The spa hotel context. *International Journal of Hospitality Management*, 35. <https://doi.org/10.1016/j.ijhm.2013.04.011>
- Malyshev, A. A., Khodasevich, L. S., Maznichenko, M. A., & Romanov, S. M. (2016). Integration of educational and sports technologies in youth wellness tourism. *European Journal of Contemporary Education*, 18(4). <https://doi.org/10.13187/ejced.2016.18.452>
- Martins, P., Neves De Jesus, S., Pocinho, M., & Pinto, P. (2023). Well-being Wellness Tourism: A Bibliometric Analysis Approach. 11(4), 203–217. <https://doi.org/10.34623/p5ve-gw38>
- Meera, S., & Vinodan, A. (2019). Attitude towards alternative medicinal practices in wellness tourism market. *Journal of Hospitality and Tourism Insights*, 2(3). <https://doi.org/10.1108/JHTI-06-2018-0037>

- Mingers, J., & Leydesdorff, L. (2015). A review of theory and practice in scientometrics. In *European Journal of Operational Research* (Vol. 246, Issue 1). <https://doi.org/10.1016/j.ejor.2015.04.002>
- Mishra, S., & Dey, A. K. (2022). Understanding and Identifying 'Themes' in Qualitative Case Study Research. In *South Asian Journal of Business and Management Cases* (Vol. 11, Issue 3). <https://doi.org/10.1177/22779779221134659>
- Mohanan, M., & Shekhar, S. K. (2022). Bibliometric analysis of publications on wellness tourism. *Turyzm/Tourism*, 32(2). <https://doi.org/10.18778/0867-5856.32.2.04>
- Murgado-Armenteros, E. M., Gutiérrez-Salcedo, M., Torres-Ruiz, F. J., & Cobo, M. J. (2015). Analysing the conceptual evolution of qualitative marketing research through science mapping analysis. *Scientometrics*, 102(1). <https://doi.org/10.1007/s11192-014-1443-z>
- Okumus, B., & Kelly, H. L. (2022). Wellness Management in Hospitality and Tourism. In *Wellness Management in Hospitality and Tourism*. <https://doi.org/10.23912/978-1-915097-24-8-5275>
- Rančić Demir, M., Petrović, M. D., & Blešić, I. (2021). Leisure Industry and Hotels: The Importance of Wellness Services for Guests' Well-Being. In *World Sustainability Series*. https://doi.org/10.1007/978-3-030-59820-4_9
- Rodrigues, Á., Kastenholz, E., & Rodrigues, A. (2010). Hiking as a relevant wellness activity - an exploratory study of hiking tourists in portugal. *Journal of Vacation Marketing*, 16(4). <https://doi.org/10.1177/1356766710380886>
- Savella, O., & Kórodi, M. (2020). EGÉSZSÉGTURIZMUS, MINT EGÉSZSÉGMAGATARTÁS-FORMÁLÓ SZÍNTÉR – JÖVŐBENI KUTATÁSI IRÁNYOK BEMUTATÁSA. *Economica*, 9(3). <https://doi.org/10.47282/economica/2018/9/3/4127>
- Sharma, P., & Nayak, J. K. (2018). Testing the role of tourists' emotional experiences in predicting destination image, satisfaction, and behavioral intentions: A case of wellness tourism. *Tourism Management Perspectives*, 28. <https://doi.org/10.1016/j.tmp.2018.07.004>
- Sopha, C., Jittithavorn, C., & Lee, T. J. (2019). Cooperation in health and wellness tourism connectivity between Thailand and Malaysia. *International Journal of Tourism Sciences*, 19(4). <https://doi.org/10.1080/15980634.2019.1706027>
- Suban, S. A. (2022). Wellness tourism: a bibliometric analysis during 1998–2021. *International Journal of Spa and Wellness*, 5(3). <https://doi.org/10.1080/24721735.2022.2107815>

- Suban, S. A. (2023). Bibliometric analysis on wellness tourism – citation and co-citation analysis. *International Hospitality Review*, 37(2). <https://doi.org/10.1108/ihr-11-2021-0072>
- Topp, E. (2011). *International Tourism Trend Analysis: Tourism as a Learning Experience and Educational Tool*.
- Tuzunkan, D. (2018). Wellness tourism: What motivates tourists to participate? *International Journal of Applied Engineering Research*, 13(1).
- Voigt, C., Brown, G., & Howat, G. (2011). Wellness tourists: In search of transformation. *Tourism Review*, 66. <https://doi.org/10.1108/166053711111127206>
- Wang, L., Togtokhbuyan, L., & Yadmaa, Z. (2021). Visual analysis of the international wellness tourism WOS literature from 1992 to 2019. *International Journal of Spa and Wellness*, 4(1). <https://doi.org/10.1080/24721735.2020.1830527>
- Wolf, I. D., Ainsworth, G. B., & Crowley, J. (2017). Transformative travel as a sustainable market niche for protected areas: a new development, marketing and conservation model. *Journal of Sustainable Tourism*, 25(11). <https://doi.org/10.1080/09669582.2017.1302454>
- Yoon, B., & Lee, S. (2012). Managing technological knowledge for supporting R&D activities: Scientometrics-based approach. *Knowledge Management Research and Practice*, 10(3). <https://doi.org/10.1057/kmrp.2012.18>
- Zupic, I., & Čater, T. (2015). Bibliometric Methods in Management and Organization. *Organizational Research Methods*, 18(3). <https://doi.org/10.1177/1094428114562629>
- Zyoud, S., Al-Jabi, S., Sweileh, W., & Waring, W. (2015). Scientific research related to calcium channel blockers poisoning: Bibliometric analysis in Scopus, 1968–2012. *Human & Experimental Toxicology*, 34(11).

MOTIVATION MUSIC INVENTORY RELIABILITY AND VALIDITY, FOR A ROMANIAN VERSION, IN A LARGE STUDENT SAMPLE

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Abstract: *The present study sought to investigate second time the MUSIC inventory reliability and structure validity but, in a larger sample. Published research using multiple samples indicated that MUSIC inventory had excellent Cronbach's Alpha values for each scale and the structure validly was considered acceptable by more authors, even there have been found higher correlations between its scales. The hypothesis was that the students' perceptions measured using MUSIC inventory would prove the reliability and construct validity of the translated version. The sample of this study consisted of a voluntary group of 215 students, mainly enrolled in the Master's Programs: Educational Management - first and second year and Psychopedagogy of Early Education - first and second year. The study had a cross-sectional design. The structure of the study is similar to the previous one, with the intention to make their results comparable. Also, the same statistical analyses were performed: reliability analysis (Cronbach's Alpha), factor analysis and correlation analysis. Interpretation of results from this study suggested that the hypothesis of the study was again only partially confirmed, reliability was proved by Cronbach Alpha coefficients to be excellent (between ,946 - ,970) for all scales. Related to the construct validity of the inventory, results not confirmed the theoretical structure. Due to high correlation among all MUSIC items, inventory theoretical structure is susceptible not working properly in all samples.*

Key words: *MUSIC inventory; motivation; reliability; validity.*

Background

Intrinsic and extrinsic motivation are the main factors that guide pupils academic behavior and has significant impact on improving their academic results (Afzal & Ali, 2010).

The specific literature on this topic is well represented and most studies' findings suggest that motivation in school has a positive effect on academic results. Because of this, numerous authors were working on the development of motivation scales. Some of most known of them are:

Ryan and Deci (intrinsic motivation), Guay, Vallerand and Blanchard (Situation Motivation Scale), Harter (Scale of Intrinsic Versus Extrinsic Orientation in the Classroom) (Nortje, 2021). Motivation dimensions were also studied in a recent small qualitative research (Kiliç et al., 2021). Main findings from this research suggest that there are four dimensions that influence children motivation in class. These dimensions (in the order mentioned by authors) are: learning teaching, lessons characteristics, evaluation, environment material factors. As can be seen, academic literature related to motivation is abundant (Wentzel & Ramani, 2016) and many new other scales or questionnaires for motivation assessment are still proposed. One of them is the MUSIC inventory developed by Brett D. Jones (Jones, 2022). More studies published results that confirm the good validity of the Music Inventory (Jones et al., 2019, 2021; Jones & Sigmon, 2017; Jones & Skaggs, 2016, Jones & Wilkins, 2023; Pace et al., 2016). In a previous study on a smaller sample the structure of this inventory was verified using more statistical analyses, among them: Cronbach Alpha, Factor Analysis (Igna, 2023). Results from this study suggested that the hypothesis of the study was only partially confirmed, reliability was proved by excellent or good Cronbach Alpha coefficients (above 0.9) for Usefulness and Interest scales, (between 0.7-0.9) for the remaining three scales, but, on the other hand, construct validity of the inventory was not confirmed. One explanation for this result was speculated that could be the small number of people that were in the sample. In the present study the sample size is much bigger so the previous limitation is overcome. The structure of the study is similar to the previous one, with the intention to make their results comparable. Validity and reliability are important aspects for every questionnaire and should be a matter of concern for every author (Bolarinwa, 2015).

Hypothesis

Students' perceptions measured using MUSIC inventory would prove the reliability and construct validity of the translated version applied to 215 Romanian students.

Research Methods

Sample

It consisted of 215 people, with an average age of 34.27 years (SD = 9,670); minimum age was 21 years and maximum 55 years, the group included 204 females and 11 males, students in the Master's Programs: Educational Management - first and second year and Psychopedagogy of Early Education - first and second year and three students in the field of science of education. These individuals' classes were invited to complete the questionnaire of this research. The questionnaire was

electronically distributed by Google Forms.

	Specializarea							Total
	ME anul 1	ME anul 2	PETSM anul 1	PETSM anul 2	PIPP anul 1	PIPP anul 2	PIPP anul 3	
Sex Feminin	67	42	36	56	1	1	1	204
Masculin	6	3	0	1	0	0	1	11
Total	73	45	36	57	1	1	2	215

Table 1. Sex * Specialization Crosstabulation

Instruments

The MUSIC inventory proposes a motivation model with five main components: empowerment, utility, success, interest and care. The MUSIC motivation model (Jones, 2009, 2018) can be used in any field at any class level. Later, the inventory was modified and were developed shorter versions (of 20 or 19 items) but in this study the original 26 items inventory was used. The inventory uses a 1 to 6 rating scale (from „Strongly disagree” to „Strongly agree”), each number being associated a verbal description. Each principle is measured by a number of items:

- Empowerment score = (item 2 + item 8 + item 12 + item 17 + item 26) / 5
- Usefulness score = (item 3 + item 5 + item 19 + item 21 + item 23) / 5
- Success score = (item 7 + item 10 + item 14 + item 18) / 4
- Interest score = (item 1 + item 6 + item 9 + item 11 + item 13 + item 15) / 6
- Caring score = (item 4 + item 16 + item 20 + item 22 + item 24 + item 25) / 6

The inventory was used in several large studies (Jones et al., 2021, 2022; Jones & Wilkins, 2023) and also in recent ones (Resendiz-Calderón et al., 2024; Suzuki et al., 2024)

For this research the MUSIC inventory was translated by two translators in Romanian; these translations were merged through a synthesis by a committee (two translators, previously mentioned, and an expert in the field) and finally, the Romanian version was translated again in English by another translator and a second expert in the field.

Research design

This study follows a cross-sectional design.

Results

More analyses were needed to test the hypothesis, in order to perform

them it was necessary that answers from the survey be converted into numerical variables (for conversion was used the table from Instructions, Annex 1) and scores for all five principles/scales calculated (details in „Instruments”). These calculated scores were used in the descriptive statistics, reliability analysis, factor analysis and in the correlation analysis.

	Empowerment score	Usefulness score	Success score	Interest score	Caring score
N Valid	215	215	215	215	215
N Missing	0	0	0	0	0
Mean	5,2763	5,4549	5,3674	5,4395	5,5977
Median	5,4000	5,8000	5,5000	5,8333	6,0000
Mode	6,00	6,00	6,00	6,00	6,00
Std. Deviation	,82402	,84575	,80803	,86390	,84326
Minimum	1,00	1,00	1,00	1,00	1,00
Maximum	6,00	6,00	6,00	6,00	6,00

Table 2. Descriptive Statistics for the 5 scales of the MUSIC inventory

	N	Cronbach Alpha	Number of items
Empowerment score	215	,949	5
Usefulness score	215	,957	5
Success score	215	,946	4
Interest score	215	,970	6
Caring score	215	,963	6
All 26 questions	215	,988	26

Table 3. Reliability Statistics - Cronbach's Alpha

In this study were used same criteria as those provided by Kline (2016) to evaluate the alpha values of the five MUSIC scales: above 0.9 / excellent, 0.7 - 0.9 / good, between 0.6 -0.7 / acceptable, and below 0.6 / unacceptable.

In order to test the hypothesis, each scale of the MUSIC inventory was analysed with Reliability analysis (Cronbach Alpha). A separate Reliability analysis was performed, including all 26 items; and, for this last analysis the Cronbach Alpha value obtained was ,988 (last row in Table 3).

	Component	
	1	2
TM_1_nr	,864	-,261
TM_2_nr	,793	,217
TM_3_nr	,888	-,140
TM_4_nr	,867	-,195
TM_5_nr	,884	-,132
TM_6_nr	,904	-,163
TM_7_nr	,893	,132
TM_8_nr	,858	,309
TM_9_nr	,931	-,066
TM_10_nr	,867	,217
TM_11_nr	,895	-,015
TM_12_nr	,844	,383
TM_13_nr	,918	-,041
TM_14_nr	,823	,326
TM_15_nr	,920	-,134
TM_16_nr	,912	-,148
TM_17_nr	,880	,328
TM_18_nr	,892	,239
TM_19_nr	,930	-,035
TM_20_nr	,920	-,094
TM_21_nr	,899	-,004
TM_22_nr	,903	-,174
TM_23_nr	,879	-,110
TM_24_nr	,838	-,220
TM_25_nr	,853	-,278
TM_26_nr	,869	,132

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Table 4. Factor analysis for the MUSIC inventory scales - Component Matrix

The factor analysis of the MUSIC inventory was performed without specifying in the analysis to be done for 5 factors (as its theoretical model indicates); the analysis identified only 2 components/factors. First factor had the highest load for each item.

		Empowerment_ score	Usefulness_ score	Success_ score	Interest_ score	Caring_ score
Empowerment_ score	Pearson Correlation	1	,869**	,901**	,859**	,834**
	Sig. (2- tailed)		,000	,000	,000	,000
	N	215	215	215	215	215
Usefulness_ score	Pearson Correlation	,869**	1	,882**	,945**	,918**
	Sig. (2- tailed)	,000		,000	,000	,000
	N	215	215	215	215	215
Success_ score	Pearson Correlation	,901**	,882**	1	,866**	,851**
	Sig. (2- tailed)	,000	,000		,000	,000
	N	215	215	215	215	215
Interest_ score	Pearson Correlation	,859**	,945**	,866**	1	,925**
	Sig. (2- tailed)	,000	,000	,000		,000
	N	215	215	215	215	215
Caring_ Score	Pearson Correlation	,834**	,918**	,851**	,925**	1
	Sig. (2- tailed)	,000	,000	,000	,000	
	N	215	215	215	215	215

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5. Correlations for the MUSIC inventory scales

Correlation analysis between the 5 Scales of MUSIC inventory indicated positive and statistically significant relationships among all scales.

A second Correlations analysis was performed (table not presented), including responses from all 26 items of the MUSIC inventory, all correlations were positive and statistically significant, the same as the correlations between MUSIC inventory scales (Table 5).

Discussion

Hypothesis of this study is only partially confirmed; in this study, the same as in other previous ones, the MUSIC inventory proved to be a reliable questionnaire. The Cronbach Alpha coefficients are excellent (above 0.9) for all scales (see Table 3). But, the same as in the previous study that used a smaller sample of Romanian students, the construct validity of the inventory is not confirmed.

The same as in the previous study on the Romanian students and differently from other studies (Jones et al., 2019) in this study, correlation coefficients are much higher. A separate correlation analysis was performed to assess the relationship among all items. As already mentioned in the results, all correlations between all items were positive and statistically significant.

In the previous study the factor analysis indicated only four factors but, in this study, the same analysis indicated only two factors and, only the first factor encompassed the highest load from each item (see Table 4). The statistical software has the option to impose a specific number of scales/components but this option was not used during the statistical analysis because its purpose was to check if the 5-scale structure would result without imposing it as a condition. If the condition was imposed, to check for 5 scales (the analysis was performed but the table not included in this paper), still the first factor presented the highest load for all items and results not supported the theoretical structure of the MUSIC inventory. Also, in this study some items seem to be problematic because have a high load on both factors (example: items 8, 12, 14, 17).

In this study, that used a sample of Romanian students, the same as in the first study that used a similar but smaller sample, correlation analysis and factor analysis results cannot be used as arguments to support the expected construct validity of the MUSIC inventory. One explanation for these results could be the behavior of this sample. Looking at the values of mean, mode and median available in Table 2 can be observed that these values are at the maximum (mode) or close to it (mean and median). Because the translation was carefully accomplished by a group of translators and two specialists in this area, remains as a further study verify if on a different sample results could confirm the construct validity of the MUSIC inventory.

Conclusion

Considering previous studies, The MUSIC inventory is considered an

reliable instrument that has good reliability and structure validity but, in both studies on the Romanian sample the structure validity was not confirmed. Although it is an instrument easy to apply, its use perhaps could be useful, just as a measure of precaution, to be followed by a factor analysis, before trying to analyse the relationships between scores of MUSIC scales and other variables.

MUSIC Inventory, Annex 1

- To be administered while the student is enrolled in college
- Use the instructions below. Title the survey following the directions in a prior page of this User Guide. Also, use the directions on a prior page for how to format the 1 to 6 scale.

Instructions

Thinking about the [insert name of major or program] courses you have taken and are currently taking in your academic major (i.e., [insert specific majors]), please rate your level of agreement or disagreement with the following statements using the following scale:

1 Strongly disagree	2 Disagree	3 Somewhat disagree	4 Somewhat agree	5 Agree	6 Strongly agree
---------------------------	---------------	---------------------------	------------------------	------------	---------------------

There are no right or wrong answers for these questions. Please answer them honestly. Some of the questions might seem repetitive, but it is important that you answer them all to obtain the best possible results.

Also, note that the word "coursework" refers to anything that you did in these courses, including assignment, activities, readings, etc.

- _____ 1. The coursework holds my attention.
- _____ 2. I have the opportunity to decide for myself how to meet course goals.
- _____ 3. In general, the coursework is useful to me.
- _____ 4. The instructors are available to answer my questions about the coursework.
- _____ 5. The coursework is beneficial to me.
- _____ 6. The instructional methods used in the courses hold my attention.
- _____ 7. I am confident that I can succeed in the coursework.
- _____ 8. I have the freedom to complete the coursework my own way.
- _____ 9. I enjoy the instructional methods used in the courses.
- _____ 10. I feel that I can be successful in meeting the academic challenges in the courses.
- _____ 11. The instructional methods engage me in the courses.
- _____ 12. I have options in how to achieve the goals of the courses.
- _____ 13. I enjoy completing the coursework.
- _____ 14. I am capable of getting a high grade in the courses.
- _____ 15. The coursework is interesting to me.
- _____ 16. The instructors are willing to assist me if I need help in a course.
- _____ 17. I have control over how I learn the course content.
- _____ 18. Throughout the courses, I have felt that I could be successful on the coursework.
- _____ 19. I find the coursework to be relevant to my future.
- _____ 20. The instructors care about how well I do in their courses.
- _____ 21. I will be able to use the knowledge I gain in the courses.
- _____ 22. The instructors are respectful of me.
- _____ 23. The knowledge I gain in the courses is important for my future.
- _____ 24. The instructors are friendly.
- _____ 25. I believe that the instructors care about my feelings.
- _____ 26. I have flexibility in what I am allowed to do in the courses.

(Jones, 2022)

References

- Afzal, H., & Ali, I. (2010). A Study of University Students Motivation and Its Relationship with Their Academic Performance. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.2899435>
- Bolarinwa, O. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal*, 22(4), 195. <https://doi.org/10.4103/1117-1936.173959>
- Igna, C. V. (2023). Reliability and validity of a translated MUSIC inventory in a small sample. *JOURNAL PLUS EDUCATION*, 32(1/2023), 181–191. <https://doi.org/10.24250/jpe/Vol.32/1/2023/CI>
- Jones, B. D. (2022, noiembrie). User Guide for Assessing the Components of the MUSIC® Model of Motivation. The MUSIC Model of motivation. <https://www.themusicmodel.com/questionnaires/>
- Jones, B. D., Byrnes, M. K., & Jones, M. W. (2019). Validation of the MUSIC Model of Academic Motivation Inventory: Evidence for Use With Veterinary Medicine Students. *Frontiers in Veterinary Science*, 6, 11. <https://doi.org/10.3389/fvets.2019.00011>
- Jones, B. D., Krost, K., & Jones, M. W. (2021). Relationships Between Students' Course Perceptions, Effort, and Achievement in an Online Course. *Computers and Education Open*, 2, 100051. <https://doi.org/10.1016/j.caeo.2021.100051>
- Jones, B. D., Miyazaki, Y., Li, M., & Biscotte, S. (2022). Motivational Climate Predicts Student Evaluations of Teaching: Relationships Between Students' Course Perceptions, Ease of Course, and Evaluations of Teaching. *AERA Open*, 8, 233285842110731. <https://doi.org/10.1177/23328584211073167>
- Jones, B. D., & Sigmon, M. L. (2017). Validation Evidence for the Elementary School Version of the MUSIC® Model of Academic Motivation Inventory. *Electronic Journal of Research in Education Psychology*, 14(38), 155–174. <https://doi.org/10.14204/ejrep.38.15081>
- Jones, B. D., & Skaggs, G. (2016). Measuring Students' Motivation: Validity Evidence for the MUSIC Model of Academic Motivation Inventory. *International Journal for the Scholarship of Teaching and Learning*, 10(1). <https://doi.org/10.20429/ijstl.2016.100107>
- Jones, B. D., & Wilkins, J. L. M. (2023). Validating the MUSIC Model of Academic Motivation Inventory: Evidence for the Short Forms of the College Student Version. *Journal of Psychoeducational Assessment*, 41(1), 22–35. <https://doi.org/10.1177/07342829221121695>

- Kiliç, M. E., Kiliç, M., & Akan, D. (2021). Motivation in the classroom. *Participatory Educational Research*, 8(2), 31–56. <https://doi.org/10.17275/per.21.28.8.2>
- Kline, R. B. (2016). *Principles and practice of structural equation modeling* (Fourth edition). The Guilford Press.
- Nortje, A. (2021, martie 29). Measuring Intrinsic Motivation: 24 Questionnaires & Scales [Post]. *Positive Psychology*. <https://positivepsychology.com/intrinsic-motivation-inventory/>
- Pace, A. C., Ham, A.-J. L., Poole, T. M., & Wahaib, K. L. (2016). Validation of the MUSIC ® Model of Academic Motivation Inventory for use with student pharmacists. *Currents in Pharmacy Teaching and Learning*, 8(5), 589–597. <https://doi.org/10.1016/j.cptl.2016.06.001>
- Resendiz-Calderón, C. D., Farfan-Cabrera, L. I., Cazares-Ramírez, I. O., Nájera-García, P., & Okoye, K. (2024). Assessing benefits of computer-based video training and tools on learning outcomes and motivation in mechanical engineering education: Digitalized intervention and approach. *Frontiers in Education*, 9, 1292405. <https://doi.org/10.3389/educ.2024.1292405>
- Suzuki, Y., Matsuba, R., & Kubota, S.-I. (2024). Development of a Motivation Implementation Checklist for College Courses. 7548–7552. <https://doi.org/10.21125/inted.2024.1994>
- Wentzel, K. R., & Ramani, G. (Ed.). (2016). *Handbook of social influences in school contexts: Social-emotional, motivation, and cognitive outcomes*. Routledge, Taylor & Francis Group.

CURRICULAR DESIGN AND METHODOLOGY TO SUPPORT THE INCLUSIVE PEDAGOGY APPROACH

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Abstract: *This study aims to explore curricular adjustments that support an inclusive pedagogy approach within university settings, focusing on how learning objectives, teaching methods, and learning activities can be adapted to meet the diverse needs of students. The research examines the practical implementation of these adjustments and investigates the challenges and opportunities for fostering an inclusive learning environment. By analyzing the experiences of both university teachers and students, this study seeks to contribute strategies that promote equitable participation and learning for all. The research utilizes a mixed-methods approach, integrating both quantitative and qualitative data to offer a comprehensive analysis. The quantitative component involved administering two distinct questionnaires—one for university teachers and another for students—at the University of Bucharest, with 19 teachers and 54 students participating. The questionnaires, structured on a 5-point Likert scale, collected data on the perception of inclusive pedagogical practices. The qualitative component included in-depth interviews with five participants, analyzed through content analysis to identify key themes related to student learning needs, inclusive participation, and classroom diversity. Findings from this study highlight the importance of differentiated instruction, collaborative work, flexible assessment, and the integration of technology in supporting inclusive practices. The research underscores the need for continued professional development for university teachers and emphasizes the value of fostering student autonomy and empowerment in an inclusive classroom. This research seeks to provide valuable insights for developing strategies that enhance inclusivity in higher education.*

Key words: *inclusive pedagogy; curricular adjustments; university settings; diverse learning needs.*

Introduction

Inclusive pedagogy is a transformative approach to teaching and learning that emphasizes equity, diversity, and accessibility in the educational process (Guðjónsdóttir & Óskarsdóttir, 2016). In an

increasingly multicultural and diverse world, it is imperative that educational systems cater to the varied needs of all students, regardless of their socio-economic background, cognitive abilities, or cultural identity. The core of inclusive pedagogy is rooted in the belief that every student has the right to a quality education (Shields & Hesbol, 2020) and that learning environments should be designed to accommodate the differences among them. This inclusive approach not only benefits students with disabilities but also enhances the learning experience for all by promoting a deeper sense of community, respect, and mutual understanding (Danowitz & Tuitt, 2011; Bhardwaj & Mittal, 2024).

Curricular design and methodology play a central role in supporting inclusive pedagogy (Florian & Black-Hawkins, 2011). The curriculum should not be a one-size-fits-all framework; instead, it must be flexible and adaptable to address the diverse ways students learn, engage, and interact with content. Effective curricular design is about creating an environment where every student can access learning materials (Soufghalem, 2024), participate in classroom activities, and demonstrate their knowledge in a manner that reflects their individual strengths. Inclusive pedagogy requires university teachers to move beyond traditional teaching practices and incorporate a variety of strategies to ensure that all students, regardless of their abilities, are fully included in the learning process.

In order to support this pedagogical approach, the methodology must be equally diverse, encompassing strategies such as differentiated instruction, collaborative learning, flexible assessments, and the use of technology (Tomlinson, 2014). These methods enable teachers to meet the individual needs of students, offering them multiple pathways to success. Furthermore, the development of inclusive curricula and teaching practices is not a static process; it requires constant reflection, adaptation, and ongoing professional development for university teachers. The aim is to create a university environment where all students feel valued, supported, and capable of achieving their full potential (Marin et al. 2020).

1. Key aspects regarding curricular design and methodology that support inclusive pedagogy

There are several principles of curricular design and methodology that support inclusive pedagogy, that are presented in the literature and they all target exploring how these approaches can be effectively implemented to create a learning environment that fosters inclusion, diversity, and academic success for all students. Through the exploration of these practices, it is demonstrated the importance of a curricula that is both flexible and responsive to the diverse needs of learners, and the methodologies that ensure equitable access to learning for everyone.

The first key aspect when it comes to curricula design is related to differentiated instruction is a central tenet of inclusive pedagogy, as it directly addresses the diverse learning needs, preferences, and abilities of students (Hall et al. 2003; Loreman, 2017). It involves creating multiple pathways for students to access and engage with content, ensuring that all learners can benefit from the material at their level (Navarro et al. 2016). Differentiation can take various forms: varying the complexity of tasks based on student ability, offering multiple formats (e.g., written, oral, visual), or adjusting the pace of learning to allow some students more time to grasp concepts. Teachers may use flexible grouping strategies to pair students in ways that offer both challenge and support. This approach encourages individualized learning while still maintaining the integrity of collective classroom goals. By providing students with opportunities to engage in tasks that cater to their preferred learning styles, whether through visual aids, group discussions, hands-on activities, or digital tools, differentiated instruction allows for a more inclusive environment where each student's unique needs are met (Westbrook et al. 2013).

Secondly, collaborative and group work is vital in inclusive pedagogy as it encourages peer-to-peer learning, fosters social interaction, and promotes the development of various soft skills such as communication, cooperation, and problem-solving (Zhou & Colomer, 2024). Group work can be particularly beneficial in promoting inclusivity, as it enables students to engage with diverse perspectives and learn from their peers. In a well-structured inclusive classroom, group work should be designed in such a way that all students have opportunities to contribute (Huri et al. 2024). This can be achieved by assigning roles that reflect students' strengths, allowing flexibility in participation methods, and ensuring that each student is both supported and challenged within the group dynamic. Group work also creates a collaborative environment where students can provide and receive peer feedback, which enhances their sense of belonging and engagement. Additionally, such environments can help reduce feelings of isolation among students who may otherwise struggle with individual tasks, thus fostering a sense of community and mutual respect (Roy, 2024).

Furthermore, flexible assessment methods are essential in inclusive pedagogy because traditional assessments, such as written exams or multiple-choice tests, often fail to fully capture the diverse abilities and learning styles of students (Westwood, 2018). These methods may include project-based learning, oral presentations, digital portfolios, self-assessments, and peer evaluations, all of which provide students with varied opportunities to demonstrate their understanding. Such assessments can be adapted to suit different abilities, allowing for a more personalized approach to evaluating student progress (Tai et al. 2023).

For example, students with learning disabilities might demonstrate their knowledge through oral presentations rather than written reports, or they might be given additional time to complete assignments. Formative assessments, which occur throughout the learning process, are particularly beneficial in this context as they allow teachers to continuously gauge student understanding, offer targeted feedback, and make adjustments to instructional strategies as needed. This approach encourages a more holistic understanding of student learning, rather than relying solely on high-stakes testing (Darling-Hammond & Snyder, 2000).

Also, the integration of technology is an essential strategy for promoting inclusivity in the classroom. Assistive technologies, such as speech-to-text software, screen readers, and specialized communication devices, can help students with disabilities access learning materials and engage with content more effectively (Ahmad, 2015). Furthermore, digital tools such as learning management systems (LMS), multimedia resources, and interactive platforms allow students to access learning materials at their own pace, catering to different learning preferences (Karagianni & Drigas, 2023). For example, videos, podcasts, and interactive simulations provide students with alternative means of engaging with content, while apps and online games can help reinforce learning in a more interactive and engaging way. Additionally, technology can support personalized learning by offering adaptive platforms that adjust to a student's pace or skill level. By making use of these digital tools, university teachers can create more inclusive learning environments where every student, regardless of their abilities or disabilities, can access the resources they need to succeed.

Moreover, culturally responsive teaching is a key component of inclusive pedagogy, ensuring that the curriculum is relevant, respectful, and reflective of the diverse cultural backgrounds and experiences of students (Samuels, 2018). A culturally responsive curriculum incorporates diverse perspectives, histories, and traditions, making learning more meaningful and relatable for students. This approach challenges stereotypes and fosters an environment of respect and inclusion. Teachers can integrate culturally relevant materials into their lessons, such as books by diverse authors, case studies that highlight various cultural contexts, and discussions that encourage students to explore their own cultural identities (Kieran & Anderson, 2019). Furthermore, culturally responsive teaching involves being aware of the power dynamics in the classroom and striving to create an equitable space where all students feel heard and valued. By embedding diverse cultural perspectives into the curriculum, university teachers help students develop a broader understanding of the world, promoting tolerance, empathy, and global citizenship.

For inclusive pedagogy to be effectively implemented, it is crucial that teachers receive ongoing professional development. This includes not only training in differentiated instruction and inclusive assessment methods but also equipping university teachers with the skills to foster social and emotional learning, emotional intelligence, and the use of assistive technologies (Florian & Linklater, 2010). Teachers should be encouraged to reflect on their teaching practices and to continually adapt their approaches to meet the evolving needs of their students. Professional development programs should focus on fostering a deep understanding of diversity and inclusion, addressing potential barriers to learning, and promoting equity within the classroom (Kubacka & D'Addio, 2020). Teachers who are well-trained in these areas are more likely to create classrooms where all students feel supported and can achieve their full potential (Marin, 2021). Moreover, professional development should encourage collaboration among university teachers, allowing them to share best practices, experiences, and resources for creating inclusive environments.

Not least, inclusive pedagogy promotes student empowerment and autonomy by encouraging students to take an active role in their learning. This approach helps students develop self-regulation, critical thinking, and problem-solving skills, all of which are crucial for lifelong learning (Cappiali, 2023). University teachers can support student autonomy by offering choices in how students engage with content, allowing them to select learning activities that align with their strengths and interests. Additionally, setting personalized learning goals enables students to take ownership of their academic progress and feel more invested in their learning (Quaye & Harper, 2007). By encouraging self-directed learning, teachers help students develop the confidence and independence needed to tackle challenges both inside and outside the classroom (Dymond, 2018). This approach not only supports academic success but also nurtures skills such as resilience, time management, and self-motivation, which are essential for success in both education and life.

2. Research Approach

2.1. Objectives of the Study

The primary aim of this research is to explore curricular adjustments that support an inclusive pedagogy approach within university settings. This involves adapting the learning objectives of courses to align with the principles of inclusivity, incorporating learning activities that encourage inclusive participation, and modifying teaching methods to address the diverse needs of students. The study will investigate how these adjustments are implemented in practice and identify challenges and opportunities for fostering an inclusive learning environment. By

examining the experiences of both university teachers and students, the research aims to contribute to the development of strategies that promote equitable participation and learning for all.

2.2. Methodology and Participants

This study employed a mixed-methods approach, integrating quantitative and qualitative methodologies to provide a comprehensive analysis. The quantitative component involved administering two distinct questionnaires—one for university teachers and another for students. A total of 19 university teachers and 54 students from the University of Bucharest participated. The research adopted a descriptive analytical framework (Gerbic & Stacey, 2005) incorporating both institutional contexts and individual perspectives. The questionnaires included four statements rated on a 5-point Likert scale, ranging from "strongly agree" (1) to "strongly disagree" (5).

For the qualitative component, data analysis involved content analysis of interview transcripts to distill and interpret key findings (Brenner, 2012). Five participants (n=5) were selected for in-depth interviews, with respondents anonymized using numerical codes (e.g., I1 to I5). The interviews were recorded, transcribed, and shared with participants for validation to ensure accuracy. Data were subsequently coded and categorized into recurring themes, such as identifying students' learning needs, embracing diverse learning approaches, facilitating open and non-judgmental discussions on cultural and social disparities, and fostering diversity in the classroom. Participation in the study was voluntary, and ethical approval was secured from the institutional review board to safeguard the rights of participants.

This article centers on the third dimension of a broader research study conducted as part of the Erasmus+ project Coaching Academics as Learners for Inclusive Teaching in Optimal Networks (COALITION; project no: KA220-HED-18399197). The overarching project aimed to explore university instructors' readiness for inclusivity in higher education through the following dimensions:

- Accessibility and availability of resources in universities to facilitate inclusion.
- Willingness of university instructors to adopt an inclusive pedagogical approach.
- Curriculum adjustments supporting an inclusive pedagogical approach, including curriculum design, methodology, and assessment.
- Attitudes, skills, and concerns of university instructors in fostering inclusive learning for diverse audiences.

This study specifically focuses on the third dimension—curriculum adjustments to support an inclusive pedagogical approach—

emphasizing curriculum design, teaching methodology, and assessment strategies.

3. Results

Curricular adjustments to support the inclusive pedagogy approach involve designing learning activities that foster inclusive participation by addressing diverse needs through collaborative tasks, differentiated formats, and real-world scenarios. University teachers are encouraged to engage in ongoing professional training, equipping them with strategies like universal design for learning (UDL), differentiated instruction, and cultural competence to adapt materials and assessments effectively. Promoting students' autonomy is essential, empowering them to take ownership of their learning through reflective practices, self-assessments, and flexible pathways. This includes guiding students toward progressive autonomy in planning and managing their work, using tools like planners and personalized study plans to develop time management and critical thinking skills. Group learning activities are also integral, as they encourage collaboration, foster interaction among diverse peers, and enhance inclusivity through balanced roles and structured feedback. Together, these adjustments create a learning environment that values diversity, supports individual growth, and nurtures equitable participation. The data from the student and teacher surveys are presented below from a comparative perspective, enriched by insights from teacher interviews, which highlight the advantages and challenges of curriculum design and the implementation of an inclusive pedagogical approach.

3.1. Adaptation of the learning objectives of the courses to the needs of an inclusive pedagogical approach

The perspectives of students and teachers on the integration of an inclusive pedagogical approach into the curriculum exhibit considerable alignment, with both groups recognizing the importance of such an approach. Regarding the statement, "My teachers adapt the learning objectives of the courses to the needs of an inclusive pedagogical approach," 42.12% of students agreed, and 15.07% strongly agreed, indicating a positive perception of efforts to adapt learning objectives. This underscores the role of inclusive pedagogy in ensuring that educational content is accessible and beneficial to all students, regardless of their abilities or backgrounds, thereby fostering an environment conducive to active participation and effective learning. However, 10.96% of students disagreed, and 2.05% strongly disagreed with this statement, highlighting the persistent need to advocate for equipping all university teachers with the requisite competencies and pedagogical skills to address the challenges of implementing inclusive education effectively.

Similarly, the teacher survey revealed mixed responses to the statement, “I adapt my course learning objectives to inclusive pedagogical approaches.” While 49.27% of teachers agreed and 12.04% strongly agreed, suggesting a significant proportion of university teachers actively embrace inclusive practices, 35.08% neither agreed nor disagreed, and 9.95% disagreed, with 3.66% strongly disagreeing. These findings suggest variability in the adoption of inclusive pedagogical practices, underscoring the need for further professional development and institutional support to ensure the consistent application of inclusive teaching strategies across educational settings.

STUDENTS				TEACHERS					
<i>My teachers adapt the learning objectives of the courses to the needs of an inclusive pedagogy approach</i>				<i>My teachers adapt the learning objectives of the courses to inclusive pedagogical approaches</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent		Frequency	Percent	Valid Percent
Valid	Strongly disagree	1	1,4	1,9	1,9	Neither agree nor disagree	5	23,8	26,3
	Disagree	4	5,6	7,4	9,3	Agree	13	61,9	68,4
	Neither agree nor disagree	7	9,7	13,0	22,2	Strongly agree	1	4,8	5,3
	Agree	24	33,3	44,4	66,7	Total	19	90,5	100,0
	Strongly agree	18	25,0	33,3	100,0				
	Total	54	75,0	100,0					

Table 1 Adapting the learning objectives of the courses to the needs of an inclusive pedagogy approach

The responses from students reflected a slightly varied perspective regarding the statement, “My teachers include learning activities related to the inclusive pedagogy approach.” A total of 37.67% of students agreed with the statement, while 16.10% strongly agreed, suggesting that a significant proportion of students perceive efforts by their teachers to integrate inclusive pedagogy into learning activities. However, 27.40% of students selected neither agree nor disagree, indicating a level of neutrality or uncertainty about this practice. Meanwhile, 16.44% disagreed, and 2.40% strongly disagreed, highlighting that some students perceive a lack of inclusion of such activities, thereby pointing to the need for more consistent implementation of inclusive practices in educational settings.

<i>My teachers include learning activities related to inclusive pedagogy approach</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Disagree	4	5,6	7,4	7,4
	Neither agree nor disagree	7	9,7	13,0	20,4
	Agree	25	34,7	46,3	66,7
	Strongly agree	18	25,0	33,3	100,0
	Total	54	75,0	100,0	

Table 2 Students perspective on university teachers’ inclusion of

learning activities related to inclusive pedagogy approach

The respondents recognized that the term “inclusive” encompasses a broad and multifaceted meaning. As one participant noted: “The word 'inclusion' is very big, so I would include other elements that were not only inclusion in terms of issues of people with different cognitive abilities, but I would include other kinds of elements: more ethnic... and racial issues, which is one of the big problems we are facing in the future and which is very much linked to other kinds of differences; gender, of course, very important; also, very important, linked to the social stratum” (I1). To implement the principles of inclusive education effectively, it is essential to employ diverse teaching methods that accommodate the varied needs of students. A single group may comprise individuals with special needs as well as students of different genders, nationalities, religious backgrounds, and social statuses, all of which require tailored approaches to facilitate equitable learning and development.

Preparing university teachers for inclusive education practices necessitates providing them with training, resources, and ongoing support to address diverse student needs effectively. This includes understanding varying learning styles, adapting curricula and assessments, fostering a positive and inclusive classroom environment, and utilizing assistive technologies where needed. One respondent emphasized this point, stating: “I would support increasing the emphasis on analysing students' needs and developing skills to adapt teaching style and materials according to these identified needs, while maintaining academic rigor in the field of study” (I5).

Additionally, teachers must be open to change to ensure they provide meaningful learning experiences. As one respondent explained: “Well, I would certainly make some changes, maybe some simpler exercises to be able to reach this scope as a step to achieve before reaching the other step that most pupils can already achieve, but in a very discreet way. I think that a student with certain needs may even feel embarrassed, so I wouldn't want him/her to... feel embarrassed” (I2). However, while integrating inclusive practices, university teachers must remain focused on ensuring that students achieve the intended learning outcomes of the course. Another respondent articulated this balance, stating: “It is really important to focus on the course's intended learning outcomes and make sure that this is what is achieved with the examinations. I am afraid we are way too narrow-minded” (I5).

The respondents acknowledged that implementing inclusive education principles while ensuring successful learning outcomes is a complex and demanding process. It requires teachers to possess both specific pedagogical knowledge and the ability to adapt their practices to meet

individual learners' needs effectively. One participant emphasized the importance of developing mastery in working with groups that include students with special needs through both experience and deliberate practice: “And then maybe it requires practicing, but to learn how to distribute the power among everyone” (I4). This highlights the need for continuous professional development and reflective teaching practices to create inclusive, equitable, and effective learning environments.

3.2. *Adaptation of teaching to meet the needs of diverse students*

In response to the statement “I adapt my teaching to meet the needs of diverse students,” 59.69% of the surveyed teachers agreed, while 17.80% strongly agreed. A smaller percentage (18.85%) expressed neutrality, selecting neither agree nor disagree, and only 2.09% of the respondents indicated either disagreement or strong disagreement.

Similarly, students were asked to reflect on the adaptability of their teachers with the statement “My teachers adapt the way they present new information to meet the diverse needs of students.” Among the student respondents, 37.59% agreed, and 15.86% strongly agreed. However, 23.79% neither agreed nor disagreed, while 17.93% disagreed and 4.83% strongly disagreed. These findings highlight a general acknowledgment of efforts toward inclusivity in teaching practices, while also suggesting areas for improvement in addressing the diverse needs of students.

STUDENTS						TEACHERS					
<i>My teachers adapt the way they present new input to cater to a diverse student needs</i>						<i>Curricular design and methodology - I adapt my teaching to cater for diverse students' needs</i>					
		Frequency	Percent	Valid Percent	Cumulative Percent			Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	1	1,4	1,9	1,9	Valid	Neither agree nor disagree	4	19,0	21,1	
	Disagree	5	6,9	9,3	11,1		Agree	14	66,7	73,7	
	Neither agree nor disagree	4	5,6	7,4	18,5		Strongly agree	1	4,8	5,3	
	Agree	24	33,3	44,4	63,0		Total	19	90,5	100,0	
	Strongly agree	20	27,8	37,0	100,0						
	Total	54	75,0	100,0							

Table 3 Adapting the way university teachers present new input to cater to a diverse student needs

The teachers emphasized that successfully adapting teaching to meet the needs of diverse students requires variation in both instructional strategies and methods of assessment. Employing a mix of individual and group activities, both on-site and remotely, with the integration of digital tools, was considered essential. One respondent highlighted this perspective: “I think variation is key, to use seminars for examination as well as individual examinations, take-home assignments, group assignments, or maybe a blog that they may be writing together. Optimally, varied forms and methods should be used to be able to assess students.” (I3).

In addition to diversifying teaching and assessment methods, it is critical for university teachers to regularly question their initial assumptions about students or situations, as such assumptions may often be misleading. One participant noted, “That [checking assumptions] is the most important thing to do as an activity in inclusive sessions.” (I4). This view aligns with the understanding that inclusive education is a systematic and iterative process, where ongoing professional development and consistent application of inclusive practices can yield positive outcomes. These outcomes not only support students in acquiring knowledge and skills but also contribute to shaping their attitudes toward learning, people, and life.

Implementing inclusive education principles requires attention to accessibility at all stages of the academic journey, including examinations. Special consideration must be given to individuals with physical disabilities to ensure equitable access to educational opportunities. However, some challenges persist, as one respondent observed: “Examinations are often scheduled for you, and that has to be on that day in facilities available for people with physical disabilities. I have little influence on that. Of course, I can bring that up with the institute and faculty, but that is a much longer process. At other universities, for example, that is really arranged by other people, and teachers don’t have to do anything about it. At our university, I haven’t seen that yet, so that might be something that needs to be improved.” (I2).

To effectively apply inclusive education principles, university teachers must possess specific qualities, including a commitment to lifelong learning, sensitivity, and emotional intelligence. As one respondent reflected: “Well, work training, of course, so empathy, sensitivity, and knowledge of the difficulties that students with a certain diversity may have. Training on what kind of feelings they are having, thoughts, and to what extent I can contribute to soften that or to remove that barrier, that of course, and then techniques to contribute to participation while respecting whatever it is, right?” (I3).

University teachers acknowledged that reaching every student can be

challenging, and success may not be immediate. However, persistence in exploring diverse approaches remains critical. One respondent shared their experience: “I don’t always manage to reach everyone. In some cases, it is somehow easier to understand why they don’t get involved—for example, in the case of optional, elective subjects (where they come with different expectations or, somehow, they arrive by chance—to be with their peers, etc.) or those who are not in their major. In the case of those who get very involved and give me top marks in teacher evaluations, I was constantly told my strengths were lots of examples, practical activities, simulation of ‘professional life’ situations—conflicts with parents, children’s refusal to get involved in tasks, etc.—and the open approach, appropriate communication.” (I1).

These reflections underline the complexity of fostering inclusive education, highlighting the importance of adaptive teaching strategies, professional development, and the ongoing pursuit of innovative practices to meet diverse student needs.

3.3. Design of learning activities that take into account learning differences in different ways

The perspectives of students and faculty university diverge regarding the dissemination of information about the curriculum throughout the study process.

Regarding the statement, "Design learning activities that take into account learning differences in different ways (e.g., oral, written, online, face-to-face)," 53.58% of teachers agreed, 26.32% strongly agreed, and 13.68% neither agreed nor disagreed. A smaller percentage, 5.79%, disagreed, and 0.53% strongly disagreed.

In contrast, when students were asked, "My teachers design learning activities that take into account learning differences in different ways (e.g., oral, written, online, face-to-face, etc.)," 46.92% agreed, 21.23% strongly agreed, and 14.04% neither agreed nor disagreed. However, 13.36% of students disagreed, and 4.45% strongly disagreed with the statement. These findings indicate a noticeable gap between faculty perceptions and students' experiences in the design of inclusive learning activities.

STUDENTS					TEACHERS						
<i>My teachers create group learning activities that allow us to collaborate in an inclusive community of learning (e.g., peer feedback activities, challenging the taking for granted assumptions/ values)</i>					<i>I create group learning activities that allow students to collaborate in an inclusive community of learning (e.g., peer feedback activities, challenging the taking for granted assumptions and values)</i>						
		Freque ncy	Perc ent	Vali d Perc ent	Cumul ative Percent			Freque ncy	Perc ent	Vali d Perc ent	Cumul ative Percent
Va	Disag	4	5,6	7,4	7,4						

lid	ree					Valid	Neither agree nor disagree	3	14,3	15,8	15,8	
	Agree	17	23,6	31,5	53,7		Agree	12	57,1	63,2	78,9	
	Strongly agree	25	34,7	46,3	100,0		Strongly agree	4	19,0	21,1	100,0	
	Total	54	75,0	100,0			Total	19	90,5	100,0		

Table 4 Using group learning activities that allow students to collaborate in an inclusive community of learning

The use of diverse approaches in the study process not only enhances the variety and engagement of the curriculum but also improves its overall quality, fostering students' sustained interest in the content and promoting independent learning. Lecturers highlighted their use of various strategies to address learning differences, as illustrated by one respondent who shared, "I offer different approaches. So, I very much like the flipped classroom model, where theory is studied independently at home, and then I combine that with short web lectures, assignments, and reading from the textbook. The material is the same, but presented in different formats, including visuals. I also use YouTube videos, as many teachers explain topics well with accompanying visuals." (I2). To address the needs, characteristics, and abilities of each student, lecturers emphasized the importance of individualized attention, as one respondent noted: "I think it's also important to offer specific attention in your teaching, particularly regarding diversity." (I4). While individual attention in large groups can be challenging, some respondents argued that occasional practical or psychological support can be sufficient: "Sometimes, students may just need emotional support or reassurance that they are not alone, or even something as simple as an A3 printer." (I5).

An effective strategy for supporting inclusive education is the integration of additional support staff, such as teacher assistants, which is common in general education but less so in higher education. The demand for such support is growing, as highlighted by one lecturer who suggested: "Maybe it would be helpful if there were assistants who understand the needs of these students and help them navigate through their studies." (I3). Additionally, the allocation of financial resources to support students with special needs was also seen as an important strategy. Academics explained that they carefully choose teaching methods that cater to the specific needs of students requiring additional

support. For instance, one lecturer shared how they adapted their teaching for students with physical conditions who could not attend long seminars, noting, “I try to differentiate between students who learn differently or need extra time or feedback. This is not inclusive in the sense of gender or culture, but from a didactic perspective, it is inclusive.” (I2).

Modern technology, particularly lesson recordings, was identified as a relevant solution to address students' diverse learning needs. While some lecturers believed that all lectures should be recorded for inclusivity, others expressed mixed opinions. One respondent noted, “for inclusivity, all lectures should be recorded and made available to students, with better quality than we do now.” (I3). However, the same lecturer later explained that they do not record every lecture but only when necessary: “I don’t pre-emptively ask students who might need recordings, but if a student struggles, I adjust and record the lesson for them.” (I3). This approach highlights the flexibility and responsiveness required in implementing inclusive teaching practices.

4. Conclusions

The findings from the surveys and interviews reveal that significant progress has been made in adapting curricula to support inclusive pedagogy, though challenges remain. Both students and teachers recognize the importance of inclusive education and the need for adjustments to learning objectives, teaching methods, and learning activities. While a majority of teachers report adapting their teaching to meet the diverse needs of students, student feedback suggests there is still room for improvement, with some students indicating a lack of perceived inclusivity in certain courses (Stodolsky & Grossman, 2000; Brookfield, 2015). This highlights the necessity for ongoing professional development for university teachers, ensuring that inclusive practices are consistently applied across all teaching settings (Jordan et al. 2009; Marin, E. (2016).

The integration of various learning formats, such as oral, written, online, and face-to-face methods, is an essential strategy for addressing the diverse learning needs of students. Teachers who utilize a variety of approaches, including flipped classrooms and multimedia resources, are better able to engage students and create inclusive learning environments (Andujar & Nadif, 2022). However, the disparity between teacher perceptions and student experiences underscores the importance of continual reflection and adaptation in teaching practices. It is essential to tailor teaching strategies to ensure all students, particularly those with special needs, can participate fully and benefit from the learning process (Reyna et al. 2016).

The design of group learning activities and collaborative tasks plays a

crucial role in fostering an inclusive community of learning (Zubiri-Esnaola et al. 2020). These activities not only support peer interaction but also encourage the development of critical thinking and communication skills, all while promoting an equitable learning environment. Nevertheless, challenges persist in balancing individual attention with the demands of large group settings, pointing to the need for additional support, such as teaching assistants, and the integration of technology to facilitate learning (Garrison & Kanuka, 2004; Laurillard, 2013).

In conclusion, while there are clear advantages to adapting curricula to support inclusive pedagogy, further efforts are needed to ensure consistent and effective implementation. This requires both institutional commitment and individual university teachers' responsibility in embracing inclusive teaching practices, fostering an environment where all students, regardless of their background or abilities, can thrive.

References

- Ahmad, F. K. (2015). Use of assistive technology in inclusive education: making room for diverse learning needs. *Transcience*, 6(2), 62-77.
- Andujar, A., & Nadif, F. Z. (2022). Evaluating an inclusive blended learning environment in EFL: A flipped approach. *Computer Assisted Language Learning*, 35(5-6), 1138-1167.
- Bhardwaj, P., & Mittal, K. (2024). Innovative Pedagogical Practice for Diversity, Equity, and Inclusion. The completion of this edited volume, "Diversity, Equity & Inclusion", 173.
- Brenner, M. E. (2012). Interviewing in educational research. In *Handbook of complementary methods in education research* (pp. 357-370). Routledge.
- Brookfield, S. D. (2015). *The skillful teacher: On technique, trust, and responsiveness in the classroom*. John Wiley & Sons.
- Cappiali, T. M. (2023). A Paradigm Shift for a More Inclusive, Equal, and Just Academia? Towards a Transformative-Emancipatory Pedagogy. *Education Sciences*, 13(9), 876.
- Danowitz, M. A., & Tuitt, F. (2011). Enacting inclusivity through engaged pedagogy: A higher education perspective. *Equity & Excellence in Education*, 44(1), 40-56.
- Darling-Hammond, L., & Snyder, J. (2000). Authentic assessment of teaching in context. *Teaching and teacher education*, 16(5-6), 523-545.
- Dymond, D. S. (2018). Promoting student empowerment through autonomy supportive practices: Examining the Influence of

- professional development for primary grade teachers. University of Missouri-Saint Louis.
- Florian, L., & Black-Hawkins, K. (2011). Exploring inclusive pedagogy. *British educational research journal*, 37(5), 813-828.
- Florian, L., & Linklater, H. (2010). Preparing teachers for inclusive education: using inclusive pedagogy to enhance teaching and learning for all. *Cambridge journal of education*, 40(4), 369-386.
- Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The internet and higher education*, 7(2), 95-105.
- Gerbic, P., & Stacey, E. (2005). A purposive approach to content analysis: Designing analytical frameworks. *The Internet and Higher Education*, 8(1), 45-59.
- Guðjónsdóttir, H., & Óskarsdóttir, E. (2016). Inclusive education, pedagogy and practice. *Science education towards inclusion*, 7-22.
- Hall, T., Strangman, N., & Meyer, A. (2003). Differentiated instruction and implications for UDL implementation. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved July, 29, 2010.
- Huri, A. S., Sahae, J. P., Prince, A. M., & Srivastava, R. (2024). Collaborative Learning Communities: Enhancing Student Engagement And Academic Achievement. *Educational Administration: Theory and Practice*, 30(5), 7031-7036.
- Jordan, A., Schwartz, E., & McGhie-Richmond, D. (2009). Preparing teachers for inclusive classrooms. *Teaching and teacher education*, 25(4), 535-542.
- Karagianni, E., & Drigas, A. (2023). New Technologies for Inclusive Learning for Students with Special Educational Needs. *International Journal of Online & Biomedical Engineering*, 19(5).
- Kieran, L., & Anderson, C. (2019). Connecting universal design for learning with culturally responsive teaching. *Education and Urban Society*, 51(9), 1202-1216.
- Kubacka, K., & D'Addio, A. C. (2020). Targeting teacher education and professional development for inclusion. *Journal of international cooperation in education*, 22(2/3), 89-106.
- Laurillard, D. (2013). *Rethinking university teaching: A conversational framework for the effective use of learning technologies*. Routledge.
- Loreman, T. (2017). *Pedagogy for inclusive education*. In *Oxford research encyclopedia of education*.

- Marin, E. (2016). Teacher education for inclusion-The premises for implementing a new initial teacher training programme. *Specialusis ugdymas*, 2(35), 9-37.
- Marin, E. (2021). The influence of a course in inclusive education on changing pre-service teachers' readiness to work with students with SEN. *Educatia* 21, (21), 13-21.
- Marin, E., Stîngu, M., & Iucu, R. (2020). Good Practices and Experiences for Inclusion in Higher Education in Romania. In *The Social Dimension of Higher Education in Europe* (pp. 116-138). Brill.
- Navarro, S., Zervas, P., Gesa, R., & Sampson, D. (2016). Developing teachers' competences for designing inclusive learning experiences. *Educational Technology and Society*, 19(1), 17-27.
- Quaye, S. J., & Harper, S. R. (2007). Faculty accountability for culturally inclusive pedagogy and curricula. *Liberal education*, 93(3), 32-39.
- Reyna, J., Davila, Y. C., & Meier, P. (2016, June). Enhancing the flipped classroom experience with the aid of inclusive design. In *EdMedia+ Innovate Learning* (pp. 1795-1807). Association for the Advancement of Computing in Education (AACE).
- Roy, P. K. (2024). *Master the Art of Cooperative Learning: Unlock the Power of Student Collaboration, Maximize Classroom Potential, and Build Stronger Learning Communities*. Roy PK.
- Samuels, A. J. (2018). Exploring Culturally Responsive Pedagogy: Teachers' Perspectives on Fostering Equitable and Inclusive Classrooms. *Srate Journal*, 27(1), 22-30.
- Shields, C. M., & Hesbol, K. A. (2020). Transformative leadership approaches to inclusion, equity, and social justice. *Journal of School Leadership*, 30(1), 3-22.
- Soufghalem, A. (2024). Globalization and Education: Designing Culturally Inclusive Curricula for a Connected World. *International Journal of Post Axial: Futuristic Teaching and Learning*, 192-202.
- Stodolsky, S. S., & Grossman, P. L. (2000). Changing Students, Changing Teaching¹. *Teachers College Record*, 102(1), 125-172.
- Tai, J. H. M., Dollinger, M., Ajjawi, R., Jorre de St Jorre, T., Krattli, S., McCarthy, D., & Prezioso, D. (2023). Designing assessment for inclusion: An exploration of diverse students' assessment experiences. *Assessment & Evaluation in Higher Education*, 48(3), 403-417.
- Tomlinson, C. A. (2014). *The differentiated classroom: Responding to the needs of all learners*. Ascd.

- Westbrook, J., Durrani, N., Brown, R., Orr, D., Pryor, J., Boddy, J., & Salvi, F. (2013). *Pedagogy, curriculum, teaching practices and teacher education in developing countries* (p. 7). London: Department for International Development.
- Westwood, P. (2018). *Inclusive and adaptive teaching: Meeting the challenge of diversity in the classroom*. Routledge.
- Zhou, T., & Colomer, J. (2024). *Cooperative Learning Promoting Cultural Diversity and Individual Accountability: A Systematic Review*. *Education Sciences*, 14(6), 567.
- Zubiri-Esnaola, H., Vidu, A., Rios-Gonzalez, O., & Morla-Folch, T. (2020). *Inclusivity, participation and collaboration: Learning in interactive groups*. *Educational Research*, 62(2), 162-180.

THE MOST IMPORTANT QUALITIES OF A MENTOR IN A TEACHING CAREER

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Abstract: *Mentorship within the teaching profession is integral to fostering professional development, equipping mentees with guidance, support, and reflective practices essential for their growth. This article examines the critical qualities of effective mentors, including empathy, integrity, advanced communication skills, adaptability, and reflective practices. Empathy forms the foundation of trust, while active listening deepens the mentor-mentee connection. Integrity and authenticity enhance credibility, inspiring ethical behavior in mentees. Effective communication ensures the seamless transfer of knowledge and facilitates problem-solving, while flexibility allows mentors to provide personalized guidance. Reflective practice underpins continuous improvement for both mentors and mentees, solidifying mentorship as a collaborative and transformative experience. These attributes collectively enrich the mentorship process, equipping educators to navigate the multifaceted challenges of the teaching profession.*

Key words: *mentorship; empathy; communication skills; reflective practice; adaptability; professional development.*

Qualities that make an effective mentor in education

Mentoring plays a critical role in the development of educators, offering a framework for professional growth and enhancing both teaching skills

and reflective practices. As Stan (2018) emphasizes, mentorship is a dual process, where both the mentor and mentee grow. Mentorship in teaching is uniquely challenging, requiring a blend of empathy, communication, and professional expertise (Stan, 2018). This paper analyzes the core qualities that make an effective mentor in education, drawing on insights from scholarly work and practical guides.

1. Empathy and active listening. Empathy serves as a foundational quality in effective mentoring within education, shaping the mentor-mentee relationship by fostering a sense of support, trust, and openness. A mentor's ability to empathize – to truly understand and feel the mentee's experiences and challenges – creates a nurturing environment, where mentees feel safe to express their vulnerabilities and professional uncertainties. According to Johnson and Ridley (2018), empathy is not merely a passive trait, but an active skill that mentors must cultivate, in order to build authentic relationships. They assert that empathy in mentoring involves perceiving the mentee's emotions and professional struggles with sensitivity, which forms the bedrock for mutual trust. Trust, in turn, is essential for effective mentoring, as it provides a secure space, where mentees can openly share their concerns, reflect on their practices, and seek guidance without fear of judgment or repercussions (Johnson & Ridley, 2018).

A significant aspect of empathy in mentoring is the practice of active listening, which Johnson and Ridley (2018) emphasize as critical for deepening understanding and connection. Active listening goes beyond merely hearing words; it requires mentors to engage fully, showing through verbal and nonverbal cues that they are genuinely interested in what the mentee is saying. This approach not only validates the mentee's feelings and experiences, but also encourages open dialogue, fostering a collaborative environment conducive to meaningful growth. Through active listening, mentors can better understand the underlying concerns of their mentees, thereby strengthening the professional bond and enhancing the mentorship's overall effectiveness (Johnson & Ridley, 2018).

Expanding on these ideas, Hudson (2013) argues that empathy in mentoring requires understanding the unique contexts in which each mentee operates, recognizing that each individual brings a distinct set of experiences, challenges, and strengths to the relationship. Hudson posits that empathy involves not only emotional attunement but also a contextual awareness, that allows mentors to tailor their guidance to the specific needs and circumstances of the mentee. For example, a mentor working with a new teacher in a low-resource school might need to demonstrate empathy by acknowledging the stress of managing large class sizes with limited materials, offering practical advice grounded in these particular challenges. By adapting their guidance to fit the realities

that mentees face, mentors can provide more relevant, actionable support, that aligns with the mentees' professional journey, thereby fostering resilience and growth.

Moreover, Hudson (2013) suggests that empathy in mentoring creates a pathway for mutual development, benefiting both the mentor and mentee. When mentors actively listen and empathize with their mentees' challenges, they gain fresh perspectives that can enhance their own professional insights and practices. This dynamic of reciprocal learning underscores the value of empathy as a two-way process that enriches both participants, transforming mentoring into a collaborative effort rather than a one-sided relationship. Hudson's research indicates that mentors who consistently engage in empathetic, active listening create a mentorship culture that values the mentee's voice and individuality, which ultimately promotes a deeper, more authentic connection that supports long-term professional growth for both parties (Hudson, 2013).

2. Integrity and authenticity. Another important quality in mentorship is integrity. According to Johnson and Ridley (2018), integrity in mentorship involves a commitment to honest and ethical communication. Mentors must model authentic behavior, providing truthful feedback and demonstrating professional values. This integrity builds credibility, which in turn helps mentees develop a sense of responsibility and ethical standards within their own practices (Johnson & Ridley, 2018).

Authenticity, as Schön (1983) discusses in *The Reflective Practitioner*, involves mentors engaging in reflective practices that reveal their true teaching philosophy and values. Reflective mentors not only guide the mentees, but also share personal insights into professional challenges, making the mentoring process transparent and relatable. Schön's concept of the reflective practitioner highlights how mentors can serve as role models, showing mentees how to navigate the complexities of teaching through honesty and openness (Schön, 1983).

3. Flexibility and adaptability. Flexibility is a mentoring relationship feature, as each mentee's needs and goals may vary. Hudson (2013) emphasizes that mentors should adapt their approaches to suit the individual mentee's developmental stage and learning style. Flexibility allows mentors to shift strategies based on feedback, maintaining relevance and effectiveness in their guidance (Hudson, 2013). This adaptive approach is particularly crucial in education, where teaching environments and policies are constantly evolving (Fullan, 2007).

Fullan (2007) explains that educational change is a dynamic process, requiring educators to continuously adapt. Mentors who demonstrate flexibility not only model adaptability, but also help mentees prepare for inevitable changes in the educational landscape. By embodying this adaptability, mentors encourage mentees to view change as an

opportunity for growth, fostering resilience in their professional careers (Fullan, 2007).

4. Communication skills. Effective communication stands as a cornerstone of successful mentoring, playing a main role in shaping the quality and impact of the mentor-mentee relationship. Clutterbuck (2004) posits that effective communication in mentoring is multifaceted, encompassing not only the mentor's ability to share knowledge but also the essential skills of active listening, thoughtful questioning, and the delivery of constructive feedback. Clutterbuck emphasizes that when mentors communicate effectively, they create an open, collaborative space where expectations are clear, goals are aligned, and mentees feel supported in their professional development. This clarity and openness foster a positive mentorship experience, where mentees are encouraged to engage actively, ask questions, and experiment with new approaches to their work (Clutterbuck, 2004). A critical element of effective communication in mentorship is the mentor's ability to listen actively. This involves paying full attention to the mentee's concerns and responses, reflecting on their words, and refraining from interrupting or prematurely offering solutions. By practicing active listening, mentors signal respect for the mentee's perspective and demonstrate their commitment to understanding the mentee's unique challenges and goals. Clutterbuck (2004) suggests that active listening enhances the mentor's ability to provide advice that resonates with the mentee's needs, as mentors can better gauge which areas require more guidance or encouragement. Active listening reinforces the mentor's role as a supportive figure, allowing mentees to feel validated and empowered to explore their professional capabilities without hesitation.

Questioning also is a key aspect of effective communication, as mentors must skillfully pose questions that provoke critical thinking and reflection. Rather than simply providing direct answers, effective mentors use open-ended questions to stimulate mentees' self-assessment and problem-solving skills, guiding them to find personalized solutions to their challenges. Clutterbuck (2004) notes that mentors who ask purposeful, relevant questions not only encourage mentees to reflect on their actions and decisions but also help them gain insight into their strengths, weaknesses, and areas for improvement. This questioning approach promotes a deeper level of learning, as it leads mentees to engage more fully in their developmental process, becoming active participants in their growth rather than passive recipients of advice.

Providing constructive feedback is another fundamental communication skill that mentors must master to enhance the mentorship experience. Constructive feedback involves delivering observations in a supportive, balanced manner that highlights both strengths and areas for improvement. Clutterbuck (2004) emphasizes that feedback should be

specific, actionable, and framed positively to foster a growth mindset in the mentee. By focusing on practical suggestions and reinforcing positive behaviors, mentors can help mentees build confidence while addressing challenges. This approach not only aids the mentee's development but also strengthens the trust and rapport between mentor and mentee, as feedback delivered with sensitivity and encouragement enhances the overall relationship dynamic.

In the context of educational mentorship, Stan (2018) highlights the importance of communication skills in enabling mentors to translate complex pedagogical concepts into clear, accessible guidance, that mentees can readily apply in their teaching practices. Stan argues that effective communication in educational settings requires mentors to simplify educational theories and adapt their language and examples to match the mentee's experience level. This clarity allows mentees to understand abstract theories within the context of their day-to-day teaching challenges, making it easier for them to implement new strategies in the classroom. By breaking down complex ideas into practical steps, mentors can enhance the mentee's confidence, equipping them with tools to improve their instructional techniques and classroom management skills (Stan, 2018).

Clear communication in educational mentorship fosters an environment where mentees feel comfortable asking questions, seeking clarification, and experimenting with new teaching methods. Stan (2018) emphasizes that mentors who communicate openly and transparently contribute to building a culture of continuous learning and reflection, where mentees are encouraged to refine their practices and explore innovative approaches to pedagogy. This open communication not only supports mentees' immediate development, but also lays the foundation for lifelong learning and adaptability in their teaching careers, as they become accustomed to reflecting on their methods and seeking feedback. In sum, communication skills are essential in mentoring relationships, particularly in education, where mentors must convey complex ideas in ways that are clear, accessible, and actionable. Through active listening, effective questioning, and constructive feedback, mentors can create an environment that supports mentees' professional growth and confidence. As Clutterbuck (2004) and Stan (2018) highlight, communication skills enable mentors to bridge the gap between theory and practice, ensuring that mentees gain both the knowledge and the practical tools needed to excel in their teaching roles. This effective communication not only strengthens the mentor-mentee relationship, but also enhances the overall quality and impact of the mentoring process.

5. Supportive and non-directive guidance. An effective mentor empowers mentees to develop their own teaching styles rather than

imposing rigid directives. Hudson (2013) suggests that mentors should act as facilitators, encouraging mentees to explore their personal approaches to teaching. This non-directive guidance fosters independence, allowing mentees to build self-confidence and professional identity (Hudson, 2013).

Lave and Wenger's theory of Situated Learning (1991) reinforces this approach, as they argue that learning occurs through legitimate peripheral participation. Mentors who encourage mentees to gradually take on more responsibility facilitate a more natural and effective learning process. By allowing mentees to engage actively in their own development, mentors create a supportive environment that emphasizes growth through experience (Lave & Wenger, 1991).

6. Reflective practice. Reflective practice represents a fundamental component of effective mentorship, serving as a mechanism through which mentees can cultivate self-awareness, critical thinking, and a continuous improvement mindset. Schön (1983) introduces the concept of the "reflective practitioner", emphasizing that professionals who engage in reflective practice actively evaluate their decisions and actions, analyzing both successes and failures to glean insights that guide future behavior. This ongoing self-assessment is particularly valuable in mentorship, as mentors who model reflective practices provide mentees with a blueprint for self-improvement. By demonstrating how to thoughtfully analyze and learn from professional experiences, mentors help mentees adopt a reflective approach to their own work, fostering a culture of lifelong learning and self-enhancement (Schön, 1983).

Reflective practice in mentorship enables mentees to move beyond routine execution of tasks toward a more thoughtful, intentional approach to their teaching. Schön (1983) argues that reflective practitioners are not only knowledgeable but also adaptable, constantly refining their methods in response to situational demands and feedback. Mentors who engage in reflective practice make a powerful impact on mentees by revealing how introspection can inform and enhance their teaching. For instance, a mentor might share insights from a recent lesson that did not go as planned, explaining how they identified areas for improvement and adjusted their approach. This transparency shows mentees that even experienced educators face challenges, but that growth comes from a willingness to learn and adapt rather than from always achieving perfect results. The importance of reflective practice is further supported by Hattie (2009), who underlines the role of evidence-based reflection in effective teaching. In "Visible Learning", Hattie synthesizes research on educational practices and concludes that self-reflection allows educators to identify which methods yield the best outcomes, thus directly enhancing student achievement. Hattie (2009) argues that reflection is a vital tool for understanding the impact of

various teaching strategies, as it encourages educators to assess the effectiveness of their practices systematically. For mentors, engaging in reflective practice and sharing evidence-based findings with mentees sets a strong example of professional accountability. By adopting an evidence-based approach, mentors demonstrate that reflection is not only introspective, but also data-informed, reinforcing the idea that teaching should be a dynamic process rooted in ongoing assessment and refinement. Through reflective practice, mentors encourage mentees to become more self-directed learners who are capable of evaluating their teaching independently. Hattie (2009) highlights that when mentors model a reflective approach, they instill in mentees a sense of responsibility for their own professional development. This autonomy empowers mentees to analyze their methods critically and make informed adjustments based on their observations and student feedback. Such an approach aligns with the concept of "visible learning," where educators make their thought processes explicit and evaluate teaching outcomes systematically. For mentees, observing reflective practice in their mentors offers a practical framework for assessing their own effectiveness, helping them understand that successful teaching is a continuous cycle of action, reflection, and adjustment. Reflective practice in mentorship allows for a personalized approach to teaching, where mentees are encouraged to explore their unique strengths and challenges rather than conform to a one-size-fits-all model. Schön (1983) emphasizes that reflective practitioners tailor their responses to the particularities of each context, and mentors who embrace this philosophy guide mentees to find individual solutions rather than replicating generalized methods. For instance, a mentor might prompt a mentee to reflect on how their personality or background influences their classroom management style, leading to insights that form a personalized teaching strategy. This approach enables mentees to cultivate a professional identity that is both authentic and adaptable, built on continuous self-assessment rather than rigid adherence to prescriptive methods.

Thus, reflective practice serves as a vital tool in mentorship, helping mentees develop self-awareness, critical thinking, and an evidence-based approach to teaching. Mentors who model reflective practice not only enhance their own effectiveness but also inspire mentees to adopt a growth-oriented mindset that values ongoing learning and adaptation. As Schön (1983) and Hattie (2009) illustrate, reflective practice encourages educators to view each teaching experience as an opportunity for improvement, ultimately fostering a resilient, informed, and adaptive teaching style. This reflective approach benefits both the mentor and mentee, as it cultivates a professional community of educators who are committed to their own development and, by

extension, to the success of their students.

7. Mutual growth and reciprocity. The mentorship relationship should benefit both mentor and mentee, fostering mutual growth. Hudson (2013) notes that a successful mentorship is one where mentors not only provide guidance, but also gain fresh perspectives and insights from their mentees. This reciprocal learning process keeps mentors engaged and continuously improving, enhancing their own teaching practices (Hudson, 2013). Clutterbuck (2004) reinforces this idea, suggesting that mentoring relationships should be viewed as partnerships rather than hierarchical interactions. When mentors see mentees as collaborators, they create an environment of respect and shared learning, which can have long-term benefits for both parties' professional development (Clutterbuck, 2004).

Key challenges in the mentoring career

While mentoring is a profoundly rewarding field, it is not without its challenges. Several common issues can hinder the effectiveness of the mentoring process, potentially impacting both the mentor's and mentee's professional growth. Among these challenges, three prominent issues are: (1) lack of clear boundaries and role clarity, (2) ineffective communication, and (3) limited reflective practice. Each of these issues can diminish the quality of the mentoring relationship if not addressed.

1. Lack of clear boundaries and role clarity. One of the most frequent challenges in mentoring is the absence of clearly defined boundaries and roles, which can lead to confusion, misalignment, and even dependency in the mentoring relationship. Johnson and Ridley (2018) emphasize that mentors need to establish clear roles from the outset, outlining their responsibilities and limitations to ensure a structured relationship. Without well-defined boundaries, mentees may develop unrealistic expectations of their mentors, potentially relying on them too heavily for personal and professional support. This can lead to burnout for mentors, as well as limit the mentee's independence and growth, ultimately undermining the purpose of the mentorship (Johnson & Ridley, 2018). Clutterbuck (2004) further explains that unclear boundaries may also create ethical dilemmas. In educational mentorship, for instance, mentors may find themselves navigating dual relationships—both as supporters and evaluators of mentees' performance. Without a clear framework, mentors might inadvertently cross professional lines, which could lead to discomfort or mistrust within the relationship. Clutterbuck suggests that establishing early agreements on boundaries and expectations helps create a safe, productive mentoring environment that benefits both parties. For this reason, it is good to have a plan!

2. Ineffective communication. Communication difficulties represent another common issue in mentoring, often resulting from either poor

listening skills or a lack of openness. According to Clutterbuck (2004), effective mentoring requires not just the ability to share knowledge, but also the skill to listen actively, ask relevant questions, and provide constructive feedback. Mentors who struggle with communication may inadvertently impose their own views rather than adapting their advice to the unique needs of the mentee. This "mentor-driven" approach can hinder the mentee's development, as they may feel that their own voice and experiences are undervalued.

Stan (2018) argues that ineffective communication is particularly detrimental in the educational field, where mentors need to explain complex pedagogical concepts in an accessible manner. If mentors fail to adjust their language or delivery, mentees may become disengaged or struggle to apply what they learn in practical situations. Poor communication also reduces the mentor's ability to provide useful feedback, which is critical for mentee growth. By not addressing communication issues, mentors risk diminishing the overall impact of the mentorship and limiting the mentee's confidence and competence in their professional journey.

3. Limited reflective practice. A lack of reflective practice can be another major obstacle in the mentoring process, reducing the mentor's ability to assess and refine their approach over time. Schön (1983) highlights that reflective practice enables mentors to analyze their decisions and actions critically, learning from their experiences to improve future mentoring interactions. When mentors do not engage in self-reflection, they may repeat ineffective patterns, overlook valuable lessons from past experiences, and miss opportunities to adapt their methods to meet the mentee's evolving needs. Schön posits that reflective mentors are more likely to create a dynamic, responsive relationship, fostering mentee growth through adaptable guidance.

Hattie (2009) supports the importance of reflection in teaching and mentoring, noting that self-assessment allows mentors to understand which practices yield positive outcomes for mentees. Without reflective practice, mentors may struggle to identify the most effective strategies for supporting their mentees, relying instead on routines or assumptions. This lack of adaptability can stifle the mentee's development and inhibit the mentoring relationship's progress. As Hattie suggests, reflective practice is essential for mentors who aim to engage in evidence-based, effective mentoring that continuously benefits both mentor and mentee.

Conclusions

Effective mentorship in the teaching profession is characterized by a synthesis of key qualities that underpin the mentor-mentee relationship: empathy, integrity, adaptability, advanced communication skills, and reflective practice. These attributes not only facilitate the professional

development of mentees but also contribute to the overall quality and sustainability of the educational profession.

Empathy and active listening, as described by Johnson and Ridley (2018), form the foundation of trust within the mentoring relationship. By fostering an open and supportive environment, mentors enable mentees to express their concerns and reflect on their practices without fear of judgment. Hudson (2013) further emphasizes the importance of contextual awareness in mentoring, which allows mentors to tailor their guidance to the unique challenges faced by individual mentees. Integrity and authenticity, highlighted by Schön (1983), ensure that mentorship is grounded in ethical and transparent practices. By modeling professional values and sharing personal insights, mentors not only build credibility but also serve as role models, inspiring mentees to adopt ethical standards in their own professional conduct. Adaptability, as outlined by Hudson (2013) and Fullan (2007), is critical in the ever-evolving landscape of education. Mentors who demonstrate flexibility in their approaches address the diverse needs of mentees and equip them to navigate the dynamic nature of teaching environments. This adaptability fosters resilience and prepares mentees to embrace change as an opportunity for growth. Advanced communication skills, as discussed by Clutterbuck (2004), are essential for facilitating effective knowledge transfer. Active listening, thoughtful questioning, and constructive feedback enable mentors to foster a collaborative and reflective mentoring relationship. Stan (2018) argues that clear communication is particularly significant in educational mentorship, as it bridges the gap between theoretical concepts and practical application, enhancing the mentee's ability to implement effective teaching strategies. Reflective practice, central to the work of Schön (1983) and supported by Hattie (2009), is a cornerstone of effective mentorship. Reflective mentors model a growth-oriented approach, encouraging mentees to critically assess their practices and embrace continuous improvement. Hattie (2009) emphasizes that evidence-based reflection enhances teaching effectiveness and directly impacts student outcomes, making it a vital component of mentorship. The reciprocal nature of mentorship, as noted by Hudson (2013) and Clutterbuck (2004), benefits both mentors and mentees. Mentors gain fresh perspectives and refine their own practices, while mentees develop confidence and professional competence. This mutual growth underscores the transformative potential of mentorship, which extends beyond individual relationships to impact the broader educational community.

However, as identified by Johnson and Ridley (2018), challenges such as unclear boundaries, ineffective communication, and limited reflective practice can hinder the effectiveness of mentorship. Addressing these challenges requires intentional planning and a commitment to fostering

a structured, ethical, and reflective mentoring environment. Mentorship is not merely a tool for professional development but a collaborative and transformative process that enriches the teaching profession. By integrating the qualities outlined in the literature, mentorship can contribute to the cultivation of a professional community committed to continuous learning, innovation, and ethical practice, ultimately benefiting educators, students, and society at large.

References

- Az önreflexió. http://life-coach.blog.hu/2011/01/22/az_onreflexio_1. (accesat: 2023. december 15.)
- Bagdy E. (2009). Pszichoterápia, tanácsadás, szupervízió, coaching: azonosságok és különbségek. In Kulcsár É. (coord.). Tanácsadás és terápia. ELTE, Eötvös Kiadó. Budapest.
- Bakos F. (2007). Idegen szavak és kifejezések szótára. Akadémiai Kiadó. Budapest.
- Borgen, W. A., Pollard, D. E., Amundson, N. E., Westwood, M. J. (1995). Képességek összefoglalása: Munka-pályatanácsadó szakpszichológusi képzés anyag. Kézirat.
- Buda B. (1986). A közvetlen emberi kommunikáció szabályszerűségei. Animula. Budapest.
- Buda B. (2009). A lelki segítség alapkérdései. In Kulcsár É. (coord.). Tanácsadás és terápia. ELTE, Eötvös Kiadó. Budapest.
- Clutterbuck, D. (2004). Everyone Needs a Mentor: Fostering Talent at Work. CIPD Publishing.
- Dávid M. (2012). A tanácsadás és konfliktuskezelés elmélete és gyakorlata. Szent István Társulat, az Apostoli Szentszék Könyvkiadója. Budapest.
- Dobos Á., Tisza G., Tóth J. J. (2011). Reflektivitás – pedagógus tréningek tükrében. Felnőttképzési Szemle, vol. V., nr. 1–2.
- Fonyó I., Pajor A. (coord.) (2000). Fejezetek a konzultáció pszichológiájának témaköréből. ELTE Bárczi Gusztáv Gyógypedagógiai Főiskolai Kar. Budapest.
- Fullan, M. (2007). The New Meaning of Educational Change. Routledge.
- Hattie, J. (2009). Visible Learning: A Synthesis of Over 800 Meta-Analyses Relating to Achievement. Routledge.
- Hudson, P. (2013). Mentoring as Professional Development: Growth for Both Mentor and Mentee, in PROFESSIONAL DEVELOPMENT IN EDUCATION, 39(5), 771-783.
- Johnson, W. B., Ridley, C. R. (2018). The Elements of Mentoring. New York. Palgrave Macmillan.
- Lave, J., Wenger, E. (1991). Situated Learning: Legitimate Peripheral Participation. Cambridge University Press.

Schön, D. A. (1983). *The Reflective Practitioner: How Professionals Think in Action*. Basic Books.

Stan, L. (2018). *Mentoratul în educație: Ghid practic pentru formatori și mentori*. București. Editura Universitară.

**ARTIFICIAL INTELLIGENCE AND TEACHING-
LEARNING PROCESS IN EDUCATION INSTITUTIONS IN
NIGERIA: A STUDY OF UNDERGRADUATE STUDENTS OF
DELTA STATE UNIVERSITY, ABRAKA**

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Abstract: *In recent years, there has been a growing interest in the application of artificial intelligence (AI) in education. AI is currently used in many areas of education, including administration in schools, learning adaptations, and expanding the accessibility of education. Although AI has a lot of potential benefits, there are obstacles that must be conquer before it can be put into practice. This study examined the relationship between AI and the teaching-learning process in education in Nigeria, specifically focusing on undergraduates at Delta State University, Abraka. A cross-sectional study approach was used in this study, which obtained data from 437 undergraduate students. A stratified sampling technique was used to select a sample of the respondents. To analyze the data for the study, the t-test, correlation, and linear regression analysis were employed. This study demonstrated the robust and beneficial relationship between artificial intelligence and the teaching-learning process in education in Nigerian. However, there are also difficulties with using AI in education. These difficulties include students' excessive reliance on technology, concerns about data security and privacy, unequal access, prejudice and discrimination, technological difficulties, and the decline of human values. The study concluded that in order to prepare their students for the challenges of the AI revolution, Nigerian educational institutions should educate and nurture their students. The use of AI has the potential to improve teaching-learning process, personalize learning to students' needs, and boost administrative effectiveness in school management. Ensuring fairness and inclusivity and the future of teaching in*

the AI age are crucial when creating AI-based educational systems.

Key words: *education; artificial intelligence; teaching-learning process; challenges; Nigeria.*

Introduction

Mentoring plays a critical role in the development of educators, offering a framework for professional growth and enhancing both teaching skills and reflective practices. As Stan (2018) emphasizes, mentorship is a dual process, where both the mentor and mentee grow. Mentorship in teaching is uniquely challenging, requiring a blend of empathy, communication, and professional expertise (Stan, 2018). This paper analyzes the core qualities that make an effective mentor in education, drawing on insights from scholarly work and practical guides.

Since John McCarthy first used the term artificial intelligence (AI) in 1956 at a Dartmouth College workshop, in which scholars discuss the opportunities and difficulties of building thinking machines, the field has advanced significantly. When funding from the United States and United Kingdom governments became extremely selective in 2004, AI research eventually came to a standstill. However, seven years later, the Japanese government took the initiative to fund AI projects, which rekindled the field. Yet by the late 1980s, funding was once more restricted because investors were unfamiliar with where the research was going. Investment and enthusiasm in AI surged in the 2020s due to advancements in machine learning and teaching (Kubassova et al., 2021). Since then, AI has advanced significantly in tandem with the introduction of potent computer hardware and innovative data management tools.

It is impractical to dispute the influence of the recent, quick developments in artificial intelligence research and applications in the fields of industry, medicine, and education. For instance, IBM's Watson is used in the field of education to improve students' real-time data gathering. This has changed the field of education and will continue to do so by making learning and teaching more advantageous, engaging, and effective. AI will eventually be incorporated into the classroom through a slow but effective process that will improve both the teaching and learning of both the teacher and the student. This is demonstrated by TeacherBots and OzoBots, which improve the abilities and skills of pupils while providing them with the knowledge they need for their individual studies (Zouhaier, 2023). In a similar vein, Kuok-Ho (2024) asserts that AI is the catchphrase in a world where machines and information technology are used more and more to perform a variety of tasks. Numerous industries, including education, have been impacted by

AI. In response to this new technological advance trend, the education sector has been quick to launch a wide range of courses on AI. In the meanwhile, it gains from the development and acceptance of AI, especially in the fields of education and learning.

A computer system that possesses AI is capable of performing human-like functions like learning, adapting, synthesizing, self-correcting, and using data for intricate processing jobs. It is the capacity of robots or computers to carry out operations like learning, reasoning, solving problems, and speaking that normally call for human intelligence. AI has multiple applications, including web search, self-driving cars, and speech recognition. The goal of this quickly developing branch of software engineering is to develop systems that are capable of doing tasks that are beyond the scope of human performance (Chen, Chen, & Lin, 2020). Education has undergone a dramatic change as a result of AI, which has made the transition from teacher-driven to student-centered easier. The students, who stand to gain the most from teaching and learning, have already noticed and experienced some of the changes. There has been a noticeable shift in the education sector towards student-centered learning and away from teacher-focused instruction. There is a growing interest in allowing students to take charge of their own education and actively participate in the process of learning as an alternative to traditional teaching methods where teachers serve as the primary authority and source of knowledge in the classroom. Teachers set the tempo, the activities, and the standards for the learning process when it comes to teacher-centered learning. Although it has the benefit of preserving order and guaranteeing that important topics are covered, it restricts student participation, teamwork, and innovation (Tang, 2021). In student-driven learning, teachers take on the role of guides or coaches as opposed to being the only source of information. This type of instruction can improve both the development of critical skills and competencies and the accessibility of education. The development of AI has the potential to support learning that prioritizes students by offering feedback, and individualized and adaptable learning experiences. It also aids educators or lecturers in creating resources and activities that successfully involve students and effectively satisfy their needs (Tang, 2021).

AI opens up possibilities for universities to add novel courses. This trains the specialists that are sorely required in AI-related areas and equips students with the skills to take on novel tasks in the age of AI. Universities and colleges can better position themselves by offering courses that are timely and attractive as a result of riding the AI wave (Chiu et al., 2022). Academic institutions can either provide AI as an academic subject or program that introduces students to the fundamental ideas and methods of AI, including deep learning, heuristic search,

unpredictability, engaging in games, and knowledge illustration and deductive thinking, or they can offer AI's spin-offs and specialized fields, like machine translation, visual processing, cyber-security, and information analytics (Tang, 2022). AI simultaneously transforms educational institutions teaching and learning, rendering it more engaging and focused on the needs of the students. AI technologies can lower cultural and language barriers, facilitate online and hybrid education, and provide academic possibilities to underprivileged and marginalized communities. It offers a crucial conduit for expanding the variety of learning styles and enhancing accessibility to higher education worldwide (Kuok-Ho, 2024). As a result, AI affects education across the board and at all levels, not just postsecondary education alone.

According to Kamath and Pai (2022), AI will generate more employment opportunities than it will eliminate by 2025, but these new positions will demand higher skill levels than their predecessors. Educational institutions, governments, and employers of labor should think about the best ways to create educational initiatives that give people the skills they require to thrive in today's marketplace as novel talents become apparent. Consequently, educational establishments must equip their students for professions in these sectors. More research is needed on the novel instructional roles, which call for a different set of graduate qualities. These roles place a focus on creative thinking and imagination, and a set of skills and abilities that are almost never replicated by technology. For example, students can receive guidance on how to use ChatBots to identify lapses in computer code or to receive critiques of the structure of an academic paper. Table 1 provides an overview of the various AI tools and how they enhance educational experiences.

AI Tools/ Frameworks	Contribution to Educational Process
AI-based Voice Assistants	Respond to queries from students, assist with assignments, impart knowledge, and conduct information searches.
Smart Education Framework	Help instructors create a particular course.
Wrist-Worn Wearables	Encourage interactive learning by providing activities to keep students intrigued.
Smart Glasses	Augmented reality learning is made possible by the ability to encasing digital content onto reality, document lectures and field research, and gain knowledge of students' learning processes to help teachers adapt their

	approaches to teaching to meet the needs of all students.
Virtual Reality Headsets	Create learning environments that are immersive, bringing abstract ideas to life and encouraging hands-on learning.
Interactive Tools	Use multimedia to give students a comprehensive grasp of a subject; use analytics to monitor students' advancement in their learning; and permit utilizing gamification.
Intelligent Tutoring Systems	Make use of AI tutors that can work with students, participate in turn-by-turn dialogues, and adjust to the debates. They can also provide pertinent feedback to inspire students on a personal basis, keep an eye on the connection between sentiments and acquiring knowledge, and offer encouragement to students when necessary.
Virtual Learning Environment	Offer materials, connections, and operations inside a framework while accounting for the various evaluation phases.
Natural Language AI Chatbots	Assist with language-related assignments, give students opinions, and make finding data easier

Table 1: AI Tools and their Educational Contributions
Source: Kuok-Ho (2024): Implications of AI in Education.

The methods of instruction and the relationship between students and teachers have changed significantly since education was first established. This change will be primarily ascribed to technology's ongoing intervention. Thanks to AI, education has become even more collaborative as teachers and students work together to achieve better results. According to Kandula (2020), (AI is currently providing educators and educational institutions new ways to assess how students are performing and to deliver content in a quick, tailored, and focused manner. The modern educational system has been able to draw a diverse range of learners and instructors to engage in technology-based learning by disseminating knowledge through social media sites or websites. With no restrictions on space, time, or student population, online learning is becoming more and more popular every day. Online learning offers several advantages, including adaptability, reduced expenses, and an extensive variety of content. However, it is still continuously evolving to maintain standard of education. AI is becoming a growing trend in the field of education. Everyone can see in greater numbers that it is crucial to accomplishing contemporary educational objectives and

presents a plethora of fascinating opportunities for learners to gain knowledge (Mureşan, 2023).

AI can also be used to develop engaging virtual aids and tutorials, which are programmes that can respond to queries from students, offer more clarification, and mentor them via their educational journey in contemporaneous fashion. Consequently, students can gain extra encouragement and advance knowledge at their own pace with immediate instruction to support their educational endeavours through instructional videos (Sanksshep, 2023). Nevertheless, according to Nuryadin (2023), there are a number of significant obstacles preventing AI from being widely used in education. These include students' excessive reliance on technology, concerns about security and confidentiality of data, access disparities, discrimination and prejudice, technological difficulties, and the erosion of value systems in educational settings. Research on AI and the method of instruction and learning in education has been carried out all over the world, but mostly in developed nations (Chen et al., 2020; Kandula, 2020; Mureşan, 2023; Zouhaier, 2023; Kuok-Ho, 2024), to name a few. In contrast, less developed countries, Nigeria included have the opposite situation, which leaves a research gap that the current study aims to close. Based on the aforementioned, this study investigated the association between AI and the teaching-learning process in Nigerian education, paying special attention to undergraduate students at faculty of management and social sciences, Delta State University' Abraka. In order to fulfil the study's objective, this null hypothesis was analyzed:

H₁: There is a significant relationship between artificial intelligence and teaching-learning process in education in Nigeria with particular reference to the undergraduate students of the faculty of management and social sciences, Delta State University, Abraka.

Research methods

This study used a cross-sectional research design, but the challenge was obtaining a large but well-defined population. To address this issue while saving time and money, a web-based survey with direct email communication was used. To increase response rates, a letter was sent to university administration requesting support for instructors and student involvement, a flyer was distributed to the faculty of social and management sciences and posted on notice boards, and the request for responses was promoted on the university's closed-circuit screens as required. An email notification was sent to everyone who took part through the e-Plugs email list. Out of the 500 students who received emails, 437 students, or 87.4% of the total, responded. In addition, 228 (45.6%) were female and 209 (41.8%) of the students who answered the survey were male students. Along with biographical information, a 25-

item designed survey with strongly agreed (A) to strongly disagreed (E) options was employed. In the initial segment of the questionnaire, participants were asked to provide personal information such as their age, gender, department, faculty, and academic standing. The relationship between AI and the teaching-learning process in education in Nigeria is examined in the second section. The instrument was validated before it was used by three (3) specialists from the political science and public administration departments, Delta State University, Abraka. To determine the instrument's dependability, pilot testing was done. The instrument was given to twenty undergraduate students at Delta State University Abraka and tested using the Smart Learning Style Criterion and the Cronbach Alpha reliability test.

Construct	No. of items	Composite Reliability	Cronbach's Alpha	Average Variance Extract
Artificial intelligence	10	.813	.759	.663
Teaching-learning process	10	.847	.784	.691

Table 1: Reliability Results
Source: Field Survey, 2024

Table 1 showed that the composite reliability values for the two constructs range from 0.813 to 0.847, while Cronbach's alpha values range from 0.759 to 0.784. The composite and Cronbach's alpha coefficients exceed the cutoff of 0.70, indicating construct reliability (Hair et al., 2017). The Average Variance Extract (AVE) discriminant validity figures, which are also above the 0.50 threshold, back up the reliability findings (Hair et al., 2017). As a result, the study's two constructs had high internal consistency and reliability. The study's hypothesis analysis was carried out using T-test, correlation, and linear regression analyses with the help of Statistical Package for Social Sciences (SPSS) software version 23.0,

Results

The connection between the dependent and independent variables was investigated using bivariate analysis. If $p < 0.05$, reject the hypothesis due to insufficient evidence of an association; if $p > 0.05$, consent to the hypothesis as there is strong evidence of an association between the variables. This decision rule applies to results from bivariate assessments.

Variables		Artificial intelligence	Teaching-learning process
Spearman's rho	Artificial intelligence	Correlation Coefficient	1
		Sig. (2-tailed)	.836**
		N	437
	Teaching-learning process	Correlation Coefficient	.836**
		Sig. (2-tailed)	.000
		N	437

** . Correlation is significant at the 0.05 level (2-tailed)

Table 2: Results of the Correlation between Artificial Intelligence and Teaching-Learning Process in Education
Source: SPSS Output, 2024

Table 2 illustrates the link between AI and the teaching-learning process in education in Nigeria using Spearman's correlation coefficients ($\rho = 0.836$, $N = 437$, and $P = 0.000$). This finding implies that there is a substantial and beneficial relationship between AI and the teaching-learning process in the educational system. This finding implies that AI can support teaching-learning process in education in Nigeria. However, in a study like this, correlation computation is unfit to determine a cause or effect. To ascertain the effect of AI on the teaching-learning process in education in Nigeria, a linear regression technique was utilized.

Model	DF	Sum of Squares	Mean Square	F- Value	Pr > F
Error	1	21.6483	5.0000	27.5820	<.0005
Corrected	436	9.7695	0.8705		
Total	437	31.4178			

Table 3: Summary of Linear Regression Analysis
Source: SPSS Output, 2024

If the calculated value of F is higher than the tabulated value of F ($F_{cal} > F_{tab}$), we disapprove of the null hypothesis; if not, we consent to it. The F tabulated at the 95% level of significance ($\alpha = 0.05$) is as follows: $F_{0.05, (1, 437)} = 5.5753$. The calculated value of F, 27.5820, is higher than the tabulated value of F, which is 5.5753. With a 95% confidence level, the study's regression results verify that AI improves the teaching-

learning process in Nigerian schools. The findings demonstrated that AI significantly affects the teaching-learning process in Nigerian schools. AI as a teaching-learning approach makes learning more personalized, gives immediate feedback, and boosts evaluation effectiveness. Therefore, by integrating AI into online educational platforms, it is possible to tailor lessons and content to the unique need and skill levels of each student. Furthermore, a number of factors some of which were tested at the Faculty of Management and Social Sciences, Delta State University Abraka, Nigeria have been identified in Western literature as potential barriers to the teaching-learning process via AI tools.

Challenges to Teaching-Learning Process via Artificial Intelligence	Mean	Standard Deviation	Remarks
Over dependence on technology by students	5.276	0.099	Supported
Data privacy and security issue	5.084	0.124	Supported
Inequality of access issue	4.830	0.105	Supported
Bias and discrimination issues	4.589	0.150	Supported
Technical challenges	4.250	0.174	Supported
Loss of human values in teaching process	3.724	0.143	Supported

Table 4: Challenges Associated with the Application of AI in the Educational Context in Nigeria

Source: SPSS Output, 2024

When using AI by students in the faculty of management and social sciences, Delta State University, they faced a variety of difficulties. These included students' excessive reliance on technology, concerns about data security and privacy, unequal access, prejudice and discrimination, technological difficulties, and the erosion of human values. Given that the mean scores ranged from 3.724 to 5.276, it is clear that the obstacles that were identified had a major detrimental effect on the teaching-learning process in education in Nigeria. Finding out whether male and female students have different perspectives on the obstacles posed by the use of AI in education in Nigeria is crucial at this point; the result is displayed in Table 5 below.

S/N	Variables	Group	N	Mean	SD	Cat.T	Crit.T
1	Over dependence on technology by students	Male	209	5.237	.458	1.522	1.827
		Female	228	5.176	.507		
2	Data privacy and security issue	Male	209	5.163	.572	1.539	1.851
		Female	228	5.005	.589		
3	Inequality of access issue	Male	209	5.100	.645	1.517	1.866
		Female	228	5.261	.600		
4	Bias and discrimination issues	Male	209	4.446	.608	1.506	1.842
		Female	228	4.597	.634		
5	Technical challenges	Male	209	4.372	.620	1.551	1.825
		Female	228	4.500	.633		
6	Loss of human values in teaching process	Male	209	4.290	.621	1.547	1.838
		Female	228	4.248	.630		

Table 5: The Opinion of Male and Female Students on Challenges Associated with the Application of AI in the Educational Context in Nigeria

Source: SPSS Output, 2024

All calculated "t" values (1.522, 1.539, 1.517, 1.506, 1.551, and 1.547) are less than the critical "t" value of 1.825 as shown in Table 5 above. This indicates that there is no difference in the opinions expressed by men and women students regarding challenges related to the use of AI in education in Nigeria.

Discussion of findings

This study surveyed the relationship between AI and the Nigerian educational system's teaching-learning process. The study's findings demonstrated an enduring and beneficial relationship between AI and the teaching-learning process in Nigerian educational system. This finding is consistent with Nuryadin's (2023) assertion that AI holds significant potential for enhancing the effectiveness and quality of education. AI contributes to more objective evaluations, more individualized learning for students, and effective administrative procedures. An inventive and comprehensive educational future is made possible by the use of AI in the classroom. This finding supports Kuok-Ho's (2024) assertion that AI has been used in education for a variety of objectives. AI is being used by smart content to produce electronic textbook instructions and adaptable learning platforms that are currently

being implemented at all educational levels, from the elementary schools, to post-secondary and corporate settings. AI systems that can target instructions based on the abilities and shortcomings of a student and adjust to their unique learning needs are known as intelligent tutoring systems.

The study's findings also revealed that AI has a significant impact on the teaching and learning process in Nigerian schools. According to previous research by Nuryadin (2023), Sanksshep (2023), and Kuok-Ho (2024), AI has played an important role in determining the teaching-learning process in education in recent years. The positive impact of AI on teaching and learning in Nigerian educational systems was consistent with previous findings. Chin (2018) argues that AI has significantly altered human behavior, including living, working, learning, and teaching. Consequently, rather than having only surface-level effects, AI entails serious changes in the teaching and learning process. Nuryadin (2023) argues that AI has changed not only how we learn and teach, but also how schools operate. Learning management systems, for example, use AI to handle student information, monitor attendance, and prepare lessons. The intensified administrative procedure will allow teachers to devote more energy to teaching. Furthermore, AI is used to improve educational accessibility. AI models enable students with specific needs to benefit from an educational experience that is tailored to their needs. AI is capable of helping students with disabilities related to learning through text-based or voice-based support, improving their ability to follow lessons. Artificial Intelligence (AI) holds significant promise for enhancing the effectiveness and quality of education in the rapidly evolving field. AI contributes to more objective assessments, more individualized learning for students, and more effective administrative procedures. An inventive and equitable educational future is made possible by the use of AI in the classroom.

Analyzing the challenges of implementing AI in Nigerian educational systems revealed that they impact the teaching-learning process. These challenges included students' over-reliance on technology, concerns about data security and privacy, unequal access, prejudice and discrimination, technological difficulties, and a decline in human values. The study also revealed the perspectives held by male and female students about the challenges posed by the use of AI in education in Nigeria. This is consistent with Suvrat and Roshita's (2019) findings, which found no significant difference in male and female teachers' perspectives on the impact of AI on student learning. However, Schiff (2021) agrees that excessive of AI is bad. This is because allowing students to fully utilize the capabilities of AI systems can be

counterproductive, contributing to student boredom and even reducing their artistic abilities. Therefore, as AI permeates the educational field, educators must urge students to use it to enhance their learning rather than become overly reliant on it.

Conclusion

The findings of this research show that AI has an effect on teaching-learning process in Nigerian educational systems. The study's findings offer strong proof that AI and the teaching-learning process in education have causal connections and are positively correlated. Overall, the findings demonstrate that there is a substantial and favorable correlation between AI and the teaching-learning process in education in Nigeria. According to the findings, AI has a stronger and positive influence on the teaching-learning process in Nigerian educational systems. The study's findings indicate that there are obstacles to the use of AI in education in Nigeria, including students' excessive reliance on technology, concerns about data privacy and security, unequal access, bias and discrimination, technological difficulties, and a decline in human values. This study indicates that there is no gender differences in the opinions expressed about the difficulties related to the use of AI in Nigerian educational systems.

The development of smart learning system is one area in which AI has been applied in Nigerian educational systems. This system analyses student data using AI to provide learning guidelines based on each student's unique needs. This system increases the effectiveness of learning and boosts performance in school by allowing students to learn at their own discretion and style. In addition, AI aids lecturers in skill development, student distribution of study materials, and performance evaluation via computer-based assessments. In conclusion, in order to prepare their students for the challenges posed by the AI tools, Nigerian educational institutions must educate and nurture their student population. Utilizing AI in education has a lot of potential advantages. While AI has the potential to improve education, provide individualized learning opportunities for students, and boost administrative effectiveness in schools, it is crucial to maintain equity and inclusivity when creating AI-based educational systems and worries about the privacy of student information, the decline in human connection, and the future of teaching in the AI age. Make sure AI is used in education in a way that upholds human values and fosters social relationships that are crucial to learning. AI can also help in developing an innovative educational setting that completely cultivates the skills necessary for success in a world characterized by constant digital transformation. These skills include personalizing learning, constantly and constructive

evaluation, fostering interpersonal relationships, promoting imagination and critical thinking, and cultivating complex skills for problem-solving.

Implications for Higher Education in Nigeria

In developed countries, AI has received a lot of attention in the field of education; however, in developing countries, like Nigeria, the situation is the opposite. More research on the relationship between AI and the teaching-learning process in Nigerian educational systems is therefore necessary in light of the aforementioned situation. The primary objective of this study was to address the wider calls in the discourse on AI to comprehend and expand knowledge about the field in order to provide a deeper awareness of the subject as it relates to Nigeria educational systems. The results emphasize how important it is for educational establishments in Nigeria to integrate AI-related expertise and skills into their curricula through AI training and project-based learning. More specifically, AI programming courses could be offered by Nigerian educational establishments. Using examples from the real world in project-based learning can give undergraduate students hands-on expertise in developing AI skills. This will give them the essential skills they need to succeed in a future workplace driven by AI. Adopting AI in Nigerian educational institutions requires creating a welcoming atmosphere that allays fears.

Limitations and Future Research Directions

This study's limitations stem from its narrow focus on a single Nigerian university and small sample size. Consequently, the study's results may not be universally applicable to other educational institutions in Nigeria or around the globe, nor are the participants and findings sufficiently representative. In light of this, it is recommended that future researchers conduct a comprehensive study of this scope in order to close the gaps that have been identified. Future studies could make greater use of a wider range of samples and qualitative methods to obtain deeper insights. Additionally, qualitative techniques like focus groups as well as interviews could reveal in-depth perspectives that would supplement the quantitative findings. Other limitations include a low rate of response and failure to generate an entirely random sample.

References

- Chen, L., Chen, P., & Lin, Z. (2020). Artificial intelligence in education: A review. *IEEE Access*, 8, 75264 - 75278. <https://doi.org/10.1109/access.2020.2988510>.

- Chin, R. T. (2018). Education in the artificial intelligence era. Retrieved from <https://qswownews.com/education-in-the-artificial-intelligence-era> on May 12, 2024.
- Chiu, T. K. F., Meng, H., Chai, C. S., King, I., Wong, S., & Yam, Y. (2022). Creation and evaluation of a pretertiary artificial intelligence (AI) curriculum. *IEEE Transactions on Education*, 65, 30–39. <https://doi.org/10.1109/te.2021.3085878>.
- Hair, J. F. Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling*. London: sage.
- Kamath, S., & Pai, R. (2022). A study on the impact of artificial intelligence on society. *International Journal of Applied Science and Engineering*, 10(1), 31 - 39. <http://dx.doi.org/10.30954/2322-0465.2.2021.3>
- Kandula, N. (2020). Role of artificial intelligence in education. *Alochana Chakra Journal*, 9(9), 305 – 309.
- Kubassova, O., Shaikh, F., Melus, C., & Mahler, M. (2021). History, current status, and future directions of artificial intelligence. Mahler: Academic Press. pp. 1 - 38. <https://doi.org/10.1016/B978-0-12-820239-5.00002-4>.
- Kuok-Ho, D. T. (2024). Implications of artificial intelligence for teaching and learning. *Acta Pedagogica Asiana*, 3(2), 65 – 79. <https://doi.org/10.53623/apga.v3i2.404>
- Mureşan, M. (2023). Impact of artificial intelligence on education. *RAIS Conference Proceedings*, June 8-9, pp. 81- 85. <https://doi.org/10.5281/zenodo.8132828>.
- Nuryadin, R. M. (2023). The use of AI in education: Literature review. *Indonesian Journal of Primary Education*, 7(2), 143 – 158. <http://ejournal.upi.edu/index.php/IJPE/index>
- Sanksshep, M. (2023). How is AI being used in education. Retrieved from <https://www.aiplusinfo.com/blog/how-is-ai-being-used-in-education> on May 12, 2024.
- Schiff, D. (2021). Out of the laboratory and into the classroom: The future of artificial intelligence in education. *AI & Society*, 36, 331 – 348. <https://doi.org/10.1007/s00146-020-01033-8>
- Suvrat, J., & Roshita, J. (2019). Role of artificial intelligence in higher education- an empirical investigation. *International Journal of Research and Analytical Reviews*, 6(2), 144 – 150.
- Tang, K. H. D. (2021). Engaging students in the development of an atmospheric science course: A discourse analysis. *Asian Journal of Education and Social Studies*, 19, 1 – 9. <https://doi.org/10.9734/ajess/2021/v19i330463>.
- Tang, K. H. D. (2022). Impacts of COVID-19 on primary, secondary and tertiary education: A comprehensive review and

- recommendations for educational practices. *Educational Research for Policy and Practice*, 22, 23-61. <https://doi.org/10.1007/s10671-022-09319-y>.
- Tang, K. H. D. (2023). Student-centered approach in teaching and learning: What does it really mean? *Acta Pedagogia Asiana*, 2(2), 72 – 83.
- Zouhaier, S. (2023). The impact of artificial intelligence on higher education: An empirical study. *European Journal of Educational Sciences*, 10(1), 17 - 33. <http://dx.doi.org/10.19044/ejes.v10no1a17>.

SCHOOL DROPOUT AMONG ADOLESCENTS - SCHOOL SATISFACTION AND SELF-EFFICACY

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Abstract: *Dropping out of school is a topical phenomenon, being considered not only an act of dropping out of formal education, but also a risky behavior with multiple negative implications on the psychological, social and economic development of adolescents. Adolescence is a period of transition, characterized by a series of biological, cognitive, emotional and social changes. During this period, young people face a number of challenges and the decisions they make can have a long-term impact on the quality of their lives. Dropping out of school is thus a significant threat to adolescents' well-being, both now and in the future. School drop-out has a high incidence in many societies and is an important indicator of the educational health of a country. It affects not only the individual but also the community, contributing to a cycle of poverty and social exclusion. When students drop out of high school, this usually has a negative impact both on their personal development and on society, as they are exposed to an increased risk of unemployment, health problems and social integration difficulties. The aim of this article is to present the causes of school drop-out among adolescents and to present statistically the drop-out rates in different regions/schools, especially in Romania. The average of the 27 EU countries has a 78.5% school enrolment rate according to 2008 data, while our country has a 78.3% share, respectively the early school leaving rate is 14.9% in the EU and 15.9% in Romania. As a result of the analysis we can state that there is a strong link between the variables participation in education and the early school leaving rate, and a perfect link between the educational attainment and the unemployment rate. In Romania school dropout rates continue to rise, ranking first in the European Union in this respect. Thus, as the Social Monitor shows, in 2022 the dropout rate at the country level was 15.6% while the average at the European Union level was 10% and has continued to decrease in recent years.*

Key words: *adolescent; school dropout; school satisfaction; self-efficacy.*

Introduction

School drop-out includes all students who drop out of school before formally completing their education, and is a phenomenon with multiple implications at both individual and social levels. The process is dynamic and cumulative, suggesting that school drop-out is not an isolated act, but the result of a series of ongoing experiences and influences that accumulate over time. The literature emphasizes the progressive nature of this phenomenon, highlighting the fact that dropping out rarely occurs as a sudden decision, but rather as the culmination of a multifactorial process, in which the interaction of numerous factors leaves its mark on the student's final decision to leave the education system (Peditzi M.L., Fadda R., Lucarelli L., 2022). Various taxonomies and theoretical models have been developed to analyze and classify the determinants of early school leaving. These include individual, family, school, and community factors, each of which contributes to some extent to creating the context conducive to dropping out. For example, individual factors can include lack of academic motivation, learning difficulties or mental health problems, while family factors can range from poor socio-economic status to lack of emotional support. At the same time, school factors, such as a poor student-teacher relationship or a rigid curriculum, and social factors, such as community pressures or limited employment opportunities, may also influence this decision (Gonzalez-Rodriguez D., Vieira M.J., Vidal J., 2019). Although the literature presents a diversity of perspectives on the determinants of school dropout, there is a general consensus on its complex and cumulative nature. Studies have shown that no single factor is sufficient to explain the phenomenon, but rather a combination of interrelated factors contribute to the dropout decision. This complex interplay between variables underlines the need for a holistic approach to dropout prevention, focusing on interventions that address multiple dimensions of the learner's life and developmental environment. Thus, a multidimensional understanding of school dropout is essential for the formulation of effective educational policies and strategies that support school retention and reduce the incidence of this phenomenon (Gonzalez-Rodriguez D., Vieira M.J., Vidal J., 2019).

Numerous reviews of the literature (Peditzi M.L., Fadda R., Lucarelli L., 2022; Gonzalez-Rodriguez D., Vieira M.J., Vidal J., 2019; Lyche C., 2010) have investigated which of these factors contribute significantly to the increased risk of school dropout among adolescents, identifying individual, institutional, socio-economic, relational, family and school factors as the main determinants of early school leaving. Among the most important individual factors (Bocsi V., Varga A., Fehevari A.,

2023) are school outcomes (including academic failure, repetition and low performance), risk behaviors (such as drug and alcohol use, involvement in crime and strained interpersonal relationships with peers), personal attitudes (such as beliefs, life goals, values and level of self-awareness), socio-economic conditions and health status (both physical and mental). Certain factors appear to have a stronger influence than others: academic performance, absenteeism, socio-cultural and economic status, family structure, quality of peer relationships, risk behaviors and mental health exert a significant impact on the risk of dropping out (Lyche C., 2010). Relevant psychological variables in this context include levels of anxiety, depression, stress and students' general mental health, all of which are associated with an increased risk of dropping out of school.

General information

Adolescent students' satisfaction with school

Overall life satisfaction, a commonly used indicator of happiness, is a person's cognitive appraisal of the overall quality of his or her life. In the case of young people, this assessment is thought to be mainly influenced by the child's level of satisfaction in the five core domains: family, friends, living environment, self and school. In recent years, there has been a significant increase in the number of international studies devoted to assessing children's well-being, reflecting the growing concern to understand and improve it. This trend is partly due to the recognition of the importance of child well-being in relation to key areas of policy intervention, particularly in the education sector. Recent studies highlight not only the relevance of well-being for children's personal and social development, but also its impact on children's educational performance, mental and physical health, and social integration. Research on children's well-being is essential for the formulation of educational policies that holistically respond to the needs of students. In a global context in which social, economic and technological challenges can profoundly affect children's development, assessing children's well-being becomes an essential tool for identifying risk factors and promoting effective interventions. This increased focus on children's well-being in international studies supports the development of an integrated perspective on education, in which the focus is not only on academic achievement but also on students' quality of life as a whole (Marquez J., Main G., 2020).

Students' satisfaction with school is described as a personal cognitive appraisal of the value they attribute to their school life. In this context, school satisfaction can be a significant way of optimizing students' mental and physical well-being. For adolescents, levels of school satisfaction also reflect the quality of interpersonal relationships with

peers and school staff, as well as other relevant psychosocial experiences (Lund J., 2011). Children spend a large proportion of their time at school, making it essential to address factors that can enhance their enjoyment and satisfaction in this environment. Suldo et al. have emphasized the importance of considering school satisfaction as a way to improve students' mental and physical well-being (Suldo S.M., Bateman L, McMahan M., 2014). Research has shown that high levels of school satisfaction and overall life satisfaction are associated with personal well-being and psychological health in adolescents, reflected in self-acceptance, positive relationships with others, and clarity of goals in life. In the study by Tomyn and Cummins, a significant correlation was found between adolescents' school satisfaction, the quality of relationships with teachers, and their sense of safety in school (Tomyn A.J., Cummins R.A., 2011). In addition, another study examined the link between school satisfaction and subjective well-being among adolescents, concluding that school satisfaction is closely related to students' sense of belonging to school as well as their perceptions of competence and autonomy (Tian L., Chen H., Huebner E.S., 2014).

Research based on feedback from adolescents has shown that academic success can have a significant impact on school satisfaction and well-being. At the same time, students' satisfaction with the school environment is significantly influenced by factors such as the social support and support they receive. Positive relationships between teachers and students play a crucial role in shaping students' satisfaction with the school experience, and students who show less consistency in their studies tend to perceive their relationships with teachers in a less favorable light compared to their peers. Research on satisfaction with peer relationships suggests that the level of satisfaction expressed by adolescents depends on the quality of relationships in the classroom and varies according to factors such as peer group, age and gender.

Numerous studies have sought to identify predictors of school satisfaction, showing that some factors have a stronger influence than others. For example, teacher support is frequently mentioned in the literature as a significant predictor of school satisfaction. Another study has shown that students' liking of teachers is a predictor of school satisfaction, suggesting that students who value their teachers tend to be more satisfied with the school environment. Interestingly, one study found that both boys and girls expressed a preference for male teachers, while peer relationships were found to be the most important area of satisfaction in another research. However, two other studies have indicated that satisfaction with peers and classmates has a low correlation with overall satisfaction with school (Telef B., Gökmen Arslan G., Mert A., Kalafat S., 2015).

Strong relationships between teachers and students not only facilitate

effective knowledge transfer, but also provide an essential channel of emotional support for students. Supportive and encouraging behaviors on the part of teachers, regardless of the academic level or status of the students, can instill in students the basic confidence needed to learn and develop harmoniously. As formative figures in the educational journey and stages of personal development, teachers help pupils to recognize their potential and explore the directions in which they wish to develop. This support, provided by the teacher as a developmental agent, provides students with essential cognitive information that helps them to objectively assess their learning abilities and potential (DeSantis King et al, 2006). Increasing adolescents' school satisfaction can be achieved with the help of teachers by providing as many educational experiences as possible and analyzing those experiences through the prism of emotions, thoughts and states experienced by adolescents; motivating adolescents to aim for success; providing useful information to them and being a supportive, improvement-oriented teacher, helping students to reach their full potential. Teachers have a crucial role in the formation of a positive, pleasant, effective educational climate; therefore, it is also necessary to develop an open communication, with active feedback and in which teachers discuss problems or difficulties in the instructional-educational process.

Adolescent students' self-efficacy

Self-efficacy is a person's perception of his or her ability to perform predetermined tasks effectively and confidence in succeeding in assigned activities, even in the face of challenges. Academic self-efficacy reflects a student's level of confidence in his or her ability to successfully complete educational tasks, thereby reducing the risk of dropping out of school (Pedditzi M.L., Nonnis M., Fadda R., 2023; Caprara G.V., Vecchione M., Alessandri G., Gerbino M., Barbaranelli C.,2011). Students' self-efficacy beliefs play a crucial role in their academic performance, influencing their future professional choices and career directions. In this regard, cognitive-social theory examines the sources that contribute to the development of self-efficacy. Butz and Usher's study found that 'mastery experience' and social persuasion are among the most common sources of self-efficacy. At high school level, social relationships at school become important factors in enhancing self-efficacy and school satisfaction. The support provided by significant others also plays an essential role, acting as an important protective factor in school adjustment, especially during the transition period from middle school to high school (Caprara G.V., Vecchione M., Alessandri G., Gerbino M., Gerbino M., Barbaranelli C.,2011; Mena J.A., 2011,).

Various studies have investigated the impact of academic support provided by schools on student satisfaction. For example, Lund's research found that students with higher levels of school satisfaction performed the best academically (Lund J., 2011). In contrast, a comparative study looking at student satisfaction in Spain and Romania found that students in both countries had the lowest satisfaction scores in relation to their academic performance.

Causes of school dropout in Romania

We will analyze the causes of school dropout in Romania based on literature and scientific studies conducted between 2005 and 2015. The causes of school dropout differ from country to country, from education system to education system (traditional Romanian education system, Montessori system, Step-by-Step system, etc.), from environment (rural or urban), from economic influences, etc. The study conducted by Ferran Cassas, Sergiu Balțătescu, Irma Bertan, Monica Gonzales and Adrian Hatos demonstrates the differences in the causes of school dropout and school satisfaction between schools in Spain and Romania. There are also common factors in the sense that similar significant scores were obtained, but also factors that demonstrated the accentuation of other factors of dropout. The sample of the experiment was a group of adolescents aged between 13 and 16, both girls and boys. This study emphasized that students' school satisfaction is an outcome of schooling and not a prerequisite for academic achievement. Over the years, numerous questionnaires have been designed to measure pupils' school satisfaction, including: MSLSS - Multidimensional Student Life Satisfaction Scale (Heubner, 1994) which includes 8 items for different aspects of student satisfaction and school life. The application of this scale by Heubner in 1994 found that students associate their school satisfaction with cognitive evaluation. Another instrument that was used in this study was the Piers-Harris Children's Self-Concept Scale (Piers & Harris, 1969) which was adapted and included items on the teacher-student relationship, school skills, school safety and general life satisfaction. A further element that was taken into account was whether satisfaction with friendships and collegial relationships at school influenced adolescents' school satisfaction. To the researchers' surprise, both in the sample schools in Spain and in the sample schools in Romania, the result was insignificant, which means that this element has no influence on adolescents' school satisfaction.

Interpersonal relationships in the school environment play a key role in defining overall life satisfaction and school satisfaction, but their contribution varies significantly depending on the type of relationship analyzed. Good peer relationships were found to be more closely related to overall life satisfaction than to school satisfaction. This finding

reflects the importance of socialization among adolescents and the role of friends in their emotional and psychological development. Friends and classmates are not only sources of emotional support, but also catalysts for a sense of belonging and social acceptance, factors that profoundly influence overall life perception. On the other hand, relationships with teachers contribute more to school satisfaction than to overall life satisfaction. This suggests that teachers are perceived mainly through the prism of their professional role, being evaluated on the quality of classroom interactions and support for academic performance. Although teacher respect and support are important for a positive educational environment, these relationships do not have a significant impact on overall perceived well-being.

One difference between students in Spain and students in Romania regarding their school satisfaction is that Romanian students are more uncertain about their professional future compared to Spanish students. This is a cause of school dropout among Romanian pupils because many of them choose to work in order to have an income and be able to support themselves. In Spain, adolescents scored higher on personal satisfaction and security for the future than in Romania. The inclusion of satisfaction with student life in the PWI-7 had a significant impact on the scale's ability to correlate better with overall life satisfaction, thus reinforcing its value as a measure of subjective well-being among adolescents. This additional item accounted for a unique variance of 2.5%, exceeding the contribution previously reported by other studies, such as that of Tomy and Cummins, which found only a 1% variance for similar items. This significant increase suggests that satisfaction with student life is a valuable indicator that may reflect an important dimension of adolescents' experiences related to the school environment. The resulting extended model, labeled PWI-8, demonstrated good internal consistency, as assessed by Cronbach's coefficient, and an increased ability to explain the relationship between various dimensions of school life and overall well-being. This model provided a more detailed and comprehensive understanding of the factors influencing adolescent well-being, particularly in terms of educational background. In addition to its statistical advantages, the PWI-8 opened up new perspectives for future research, suggesting that the inclusion of a specific domain dedicated to satisfaction with student life is essential to capture the nuances of the relationship between school life and general well-being. The model was able to highlight cross-cultural differences between adolescents in Romania and Spain, demonstrating its flexibility in reflecting varied socio-cultural contexts.

References

- Bocsi, V., Varga, A., & Fehevari, A. (2023). Chances of early school leaving—with special regard to the impact of Roma identity. *Educational Sciences*, 13, 483. <https://doi.org/10.3390/educsci13050483>
- Caprara, G. V., Vecchione, M., Alessandri, G., Gerbino, M., & Barbaranelli, C. (2011). The contribution of personality traits and self-efficacy beliefs to academic achievement: A longitudinal study. *British Journal of Educational Psychology*.
- Casas, F., Bălătescu, S., Bertran, I., González, M., & Hatos, A. (2013). School satisfaction among adolescents: Testing different indicators for its measurement and its relationship with overall life satisfaction and subjective well-being in Romania and Spain. *Social Indicators Research*, 111(3), 665–681.
- DeSantis King, A. L., Huebner, S., Suldo, S. M., & Valois, R. F. (2006). An ecological view of school satisfaction in adolescence: Linkages between social support and behavior problem.
- Gonzalez-Rodriguez, D., Vieira, M. J., & Vidal, J. (2019). Factors that influence early school leaving: A comprehensive model. *Educational Research*, 61, 214–230. <https://doi.org/10.1080/00131881.2019.1596034>
- Lund, J. (2011). The effects of positive emotions on school satisfaction among adolescents. Bachelor Degree Project in Cognitive Neuroscience, Level ECTS. Spring term.
- Lyche, C. (2010). Taking on the completion challenge: A literature review on policies to prevent dropout and early school leaving. OECD Education Working Papers. OECD Publishing.
- Marquez, J., & Main, G. (2020). Can schools and education policy make children happier? A comparative study in 33 countries. *Child Indicators Research*, 14, 1–57.
- Mena, J. A. (2011). Latino parent home-based practices that bolster student academic persistence. *Hispanic Journal of Behavioral Sciences*.
- Pedditz, M. L. (2024). School satisfaction and self-efficacy in adolescents and intention to drop out of school. *International Journal of Environmental Research and Public Health*, 21(1), 111. <https://doi.org/10.3390/ijerph21010111>
- Pedditz, M. L., Fadda, R., & Lucarelli, L. (2022). Risk and protective factors associated with student distress and school dropout: A comparison between the perspectives of preadolescents, parents, and teachers. *International Journal of Environmental Research and Public Health*, 19, 12589. <https://doi.org/10.3390/ijerph191912589>

- Pedditz, M. L., Nonnis, M., & Fadda, R. (2023). Self-efficacy in life skills and satisfaction among adolescents in school transitions. *Journal of Public Health Research*.
- Portal Învățământ. (n.d.). Abandonul școlar în România: Un fenomen grav – Cauze și posibile rezolvări. Retrieved from <https://www.portalinvatamant.ro/articole/activitati-extracurriculare-13/abandonul-scolar-in-romania-un-fenomen-grav-cauze-si-posibile-rezolvari-12531.html>
- Sameroff, A. (2009). The transactional model. In A. Sameroff (Ed.), *The transactional model of development: How children and contexts shape each other* (pp. 3–21). American Psychological Association.
- Sidharth, A., Rajiv, G., Sunila, R., & Vinay, R. (2016). Immediate drop-out rate in adolescent substance abusers: An outpatient chart review from North India. *International Journal of Adolescent Medicine and Health*.
- Suldo, S. M., Bateman, L., & McMahan, M. (2014). School satisfaction. In A. C. Michalos (Ed.), *Encyclopedia of quality of life and well-being research*. Springer Netherlands.
- Telef, B., GökmenArslan, G., Mert, A., & Kalafat, S. (2015). The mediation effect of school satisfaction in the relationship between teacher support, positive affect and life satisfaction in adolescents. *Educational Research Review*.
- Tian, L., Chen, H., & Huebner, E. S. (2014). The longitudinal relationships between basic psychological needs satisfaction at school and school-related subjective well-being in adolescents.
- Tomyn, A. J., & Cummins, R. A. (2011). The subjective well-being of high-school students: Validating the personal well-being index—school children. *Social Indicators Research*.

**POSTGRADUATE STUDENTS' PERCEPTION OF THEIR
COMPETENCIES IN DESIGNING EDUCATIONAL
RESEARCH: CASE OF THE UNIVERISTY
OF NIGERIA, NSUKKA**

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Abstract: *Proficiency in research is a prerequisite for academic achievement for postgraduate students. Even though research writing abilities are crucial, the majority of students find it difficult to complete tasks involving research. As a result, this study looked at how postgraduate students perceived their level of expertise when it came to creating instructional research. The survey design used in the study was descriptive. The study was guided by two null hypotheses and three research questions. A sample of 300 post-graduate students, 157 of whom were male and 143 of whom were female, was employed in the study. There were 198 Masters and 102 Ph.D. students. The researchers created the Students' Perceptions on their Competences in Research Designing Questionnaire (SPCRDQ), which was the tool used to collect data. Using Cronbach's Alpha, the instrument's dependability was assessed; the result was a reliability index of 0.85. The three research questions were addressed using the mean and standard deviation, and the two null hypotheses were tested at the 0.05 level of significance using the t-test statistical method. The results show that students were competent in some areas but there were areas in designing educational research they need improvement. It also showed that there was no discernible difference between the perceptions of male and female students' design competencies. Nonetheless, a notable distinction was found in the design of educational research competencies between Ph.D. and masters students.*

Key words: *assessment; research; educational research; research design; competence.*

Introduction

Higher education institutions, particularly universities, play a critical role in addressing societal challenges through research and innovation. These institutions cultivate intellectual growth, foster advanced research capabilities, and prepare students for careers in public service and academia. As Socrates famously stated, "The unexamined life is not worth living." Research, driven by an inherent human desire for knowledge and understanding, is an investigative process that seeks to find reliable solutions to problems through systematic inquiry. It involves methodical data collection, analysis, and interpretation, leading to new discoveries and advancements in various fields. In the words of Muredzi (2019), research is a crucial endeavor that "aims to find a trustworthy solution to a problem through methodical selection, data collection, analysis, and interpretation." It not only expands our knowledge base but also enhances our understanding of the world around us and develops new skills.

Furthermore, research design is the cornerstone of any successful research endeavor. It provides the framework for the entire research process, guiding data collection, measurement, and analysis. As Akhtar (2016) emphasizes, stakeholders in education recognize the paramount importance of research design proficiency among students. Kirshenblatt-Gimblett (2020) aptly describes research design as "the overarching approach used by researchers to logically and cogently integrate the various study components in order to guarantee that the research challenge is successfully addressed." The choice of research design is crucial, as it must be tailored to the specific nature of the research question.

A well-defined research design is crucial for successful research. It serves as a roadmap, guiding the investigation and ensuring that the collected data directly addresses the research problem. This could involve testing a hypothesis, evaluating a program, or accurately characterizing a phenomenon. Neglecting to carefully consider design challenges upfront can lead to weak and unconvincing conclusions, ultimately hindering the progress of the broader research problem. As Nworgu (2015) explains, a research design is a "strategy or manual" that outlines how to gather and analyze relevant information. Given the diversity of research questions, a one-size-fits-all approach to design is not feasible. Researchers must carefully select a design that aligns with their research objectives, considering factors like time constraints and resource availability. Furthermore, research design acts as a bridge between research topics and their practical implementation, facilitating the execution of the research strategy.

Effective research design is essential for producing trustworthy results, generating new knowledge, and fostering innovation. It empowers researchers to equip students with the knowledge, skills, and values necessary for personal and professional growth (Aripin et al., 2021). Research is undeniably vital for the advancement of education in any nation. One of the most significant challenges faced by university undergraduates is selecting an appropriate research design. Prokhorchuk (2014) emphasizes that competence stems from superior information processing, knowledge acquisition, and skill development. Investing in the development of information retrieval skills, fostering a lifelong learning mindset, and cultivating research abilities is crucial for the growth of both human and natural resources. These skills empower students to reach their full potential, collaborate effectively, and develop a deep understanding of research methodologies (Bandaranaike, 2018). Furthermore, graduate education has a primary responsibility to prepare students for professional roles and equip them with strong research skills (Gilmore & Feldon, 2010). Future research endeavors should prioritize the development of operational and sustainability competencies, along with the creation of robust assessment tools to measure student competence (Cebrain et al., 2019). Yarullin et al. (2015) highlight the critical importance of research competence, emphasizing its role in enhancing professional skills within the scientific domain. This includes the ability to identify and formulate relevant research questions within the context of future professional activities. Davidson and Palermo (2015) further emphasize that developing research competence enhances an individual's confidence in their ability to design research, select samples, collect and analyze data, and effectively communicate research findings. Given the significance of research skills and competence, it is crucial to regularly assess student learning to determine their level of attainment.

The basic purpose of assessment in any educational system is to help teachers determine how well their pupils are meeting and mastering the learning objectives. As to Anandan (2016), the term assessment encompasses the diverse range of techniques employed by educators to appraise, gauge, and gather data regarding students' academic advancement and proficiency. According to Ghaicha (2016), assessment is a procedure that is used in education to evaluate students' proficiency and abilities by gathering, gauging, assessing, combining, and interpreting pertinent data on a certain subject of interest. Empirical data on student learning are used in assessment to improve student performance, program design, and attain intended outcomes. In order to provide specialized academic support, educational programming, or social services, educators can quickly and easily identify each student's strengths and weaknesses through assessment. They can also provide

feedback on the efficacy of instruction and assist students in determining the extent of their progress (Yambi, 2018). Teachers can ascertain whether pupils are acquiring the necessary concepts, abilities, and values through assessment (Tremblay et al., 2012). Additionally, it shows how much a student possesses particular qualities or attributes based on standards or criteria, which is a source of proof for a variety of aspects of the student's knowledge, comprehension, skills, and talents. Hence the study aims at using assessment to measure the postgraduate students' perception of their competency in designing educational research.

Students find it difficult to write, conduct research, and present their findings, even in higher education settings where research is necessary and valued (Shahsavari & Kourepaz, 2023). Because life without inquiry is not worth living for a human being and because research activity generates new information, the low performance of these students has become a serious concern to parents, students, and stakeholders. It is equally vital to remember that developing research skills and preparing students for professional obligations are two of higher education's main goals. The research design employed and the students' proficiency with educational research design determine the effectiveness of research projects and their applicability in any educational institution. If design issues are not well taken care of, the conclusions drawn will have the risk of being weak and consequently, fail to adequately address the overall research problem. One of the glaring problems facing the undergraduate students in universities is the skills and competence to choose appropriate research design for their study. As a result of these problems, it therefore becomes important to carry out this study on postgraduate students' perception of their competency in designing educational research.

Purpose of the Study

The general purpose of the study was to determine postgraduate students' perception of their competency in designing educational research.

Specifically, the study tends to determine:

- i. The perception of postgraduate students on their competencies in designing educational research.
- ii. Male and female post-graduate students' perception of competency in designing educational research.
- iii. Masters and Doctorate students' perception of competency in designing educational research

Research Question

The following research questions guided the study:

- i. What are the levels of postgraduate students' perception of their competency in designing educational research?
- ii. What is the mean ratings of male and female post-graduate students' perception of their competency in designing educational research?
- iii. What is the mean ratings of Masters and Doctorate students' perception of competency in designing educational research?

Hypotheses

The following hypotheses that guided the study were tested at 0.05 level of significance:

- H₀₁: There is no significant difference in the mean ratings of male and female post-graduate students' perception of competency in designing educational research.
- H₀₂: There is no significant difference in the mean rating of Masters and Doctorate students' perception of competency in designing educational research

Results

This section presents the results of the study in line with the research questions and the hypotheses generated to guide the study

Research Question 1: What are the levels of postgraduate students' perception of competency in designing educational research?

S / N	Statements	M ea n	S D	Dec isio n
1	Given a research topic in education, I can determine the target population.	3.49	0.55	Accept
2	Given a research topic in education, I can determine the proportion of the target population that should be selected.	3.52	0.51	Accept
3	If I am given a research topic in education, I can explain how to collect data pertinent to the problem.	3.59	0.61	Accept
4	For any research topic in education, I can state the most appropriate statistical test for the problem.	2.75	0.46	Accept
5	For any research topic in education, I can state the design of the study.	3.52	0.51	Accept
6	Given a research topic in education, I can delineate the scope of the study.	3.08	0.68	Accept
7	Given a research topic in education, I can determine how to enhance generalizability of the results.	2.41	0.50	Reject

8	Given a research topic in education, I can highlight the potential problems and challenges in the investigation.	2.59	0.71	Accept
9	I can determine whether my collected data in educational investigation violates the assumption of the required statistical test.	2.34	0.79	Reject
10	I can conduct educational investigation involving experimentation.	2.27	0.77	Reject
11	I have the ability to conduct study in education that is multiple regression analysis.	2.59	0.71	Accept
12	I can successfully supervise undergraduate students' research project in my area of specialization.	2.27	0.68	Reject
13	I can conduct a study requiring an ex-post factor design.	2.39	0.71	Reject
14	I can carry out a study in education that requires descriptive survey design.	2.92	1.01	Accept
15	I can analyze my collected data using appropriate software.	2.54	0.89	Reject
16	I can report my finding in line with A.P.A style.	2.47	0.89	Reject
	Grand Mean	2.85	0.64	Accept

Table 1: Mean and Standard Deviation of Post-Graduate Students' Perception of Competency in Designing Educational Research

Table 1 indicates that the mean responses of postgraduate students on items 1, 2, 3, 4, 6, 8, 11, 14, and 15 were above the mean bench mark of 2.50 implying that the students have competence in designing issues captured by these items. However, mean rating on items 7, 9, 10, 12, 13, and 16 were below the mean bench mark of 2.50 implying that the students do not possess the competences captured in these items

Research Question 2: What is the mean ratings of male and female post-graduate students' perception of competency in designing educational research?

S / N	Gender	M a l e			F e m a l e		
		M e a s u r e m e n t	S t a t i s t i c a l	D e c i s i o n	M e a s u r e m e n t	S t a t i s t i c a l	D e c i s i o n
1	Given a research topic in education, I can determine the target population.	3.476	0.5	Accept	3.5154	0.5	Accept
2	Given a research topic in education, I can determine the proportion of the target population that should be selected.	3.480	0.5	Accept	3.571	0.5	Accept
3	If I am given a research topic in education, I can explain how to collect data pertinent to the problem.	3.61	0.6	Accept	3.57	0.6	Accept
4	For any research topic in education, I can state the most appropriate statistical test for the problem.	2.758	0.4	Accept	2.75	0.4	Accept
5	For any research topic in education, I can state the design of the study.	3.510	0.5	Accept	3.53	0.5	Accept
6	Given a research topic in education, I can delineate the scope of the study.	3.408	0.6	Accept	3.1169	0.6	Accept
7	Given a research topic in education, I can determine how to enhance generalizability of the results.	2.390	0.5	Accept	2.44	0.5	Reject
8	Given a research topic in education, I can highlight the potential problems and challenges in the investigation.	2.589	0.6	Accept	2.6073	0.7	Accept
9	I can determine whether my collected data in educational investigation violates the assumption of the required statistical test.	2.339	0.7	Reject	2.36	0.8	Reject
10	I can conduct educational investigation involving experimentation.	2.287	0.7	Reject	2.25	0.7	Reject
11	I have the ability to conduct study in education that is multiple regression analysis.	2.589	0.6	Accept	2.6174	0.7	Accept

1	I can successfully supervise undergraduate students' research project in my area of specialization.	2.078	0.68	Rejection	2.286	0.69	Rejection
3	I can conduct a study requiring an ex-post factor design.	2.388	0.64	Rejection	2.417	0.74	Rejection
4	I can carry out a study in education that requires descriptive survey design.	3.659	0.42	Acceptance	3.652	0.52	Acceptance
5	I can analyze my collected data using appropriate software.	2.544	0.81	Acceptance	2.549	0.91	Acceptance
6	I can report my finding in line with A.P.A style.	2.478	0.82	Rejection	2.489	0.90	Rejection
	Grand Mean	2.835	0.66	Acceptance	2.856	0.67	Acceptance

Table 2: Male and Female Responses on the Post-graduate Students' Perception of Competency in Designing Educational Research

In Table 2 shows that the result of responses of male and female students on their competencies in designing educational research. The result revealed that majority of both male and female students have design skill as most of the items had mean ratings above the 2.50 benchmark except for items 7, 9, 10, 12, and 16 were both male and female students had mean ratings below 2.50 benchmark.

Research Question 3: What is the mean ratings of Masters and Doctorate students' perception of competency in designing educational research?

S /	N	Statements	Masters			PhD		
			M	S	De	M	S	De
1		Given a research topic in education, I can determine the target population	3.9	0.54	Acceptance	3.8	0.53	Acceptance
2		Given a research topic in education, I can determine the proportion of the target population that should be selected.	3.45	0.51	Acceptance	3.66	0.48	Acceptance

3	If I am given a research topic in education, I can explain how to collect data pertinent to the problem.	3.0	Ac	3.0	Ac
		5.7	ce	7.4	ce
		0.7	pt	7.2	pt
4	For any research topic in education, I can state the most appropriate statistical test for the problem.	2.6	Ac	2.8	Ac
		8.9	ce	8.3	ce
		4.9	pt	8.8	pt
5	For any research topic in education, I can state the design of the study.	3.5	Ac	3.4	Ac
		4.1	ce	9.5	ce
		1.0	pt	0.0	pt
6	Given a research topic in education, I can delineate the scope of the study.	3.9	Ac	3.0	Ac
		0.3	ce	0.5	ce
		9.3	pt	6.8	pt
7	Given a research topic in education, I can determine how to enhance generalizability of the results.	2.3	Re	2.5	Ac
		5.9	jec	5.2	ce
		4.9	t	2.0	pt
8	Given a research topic in education, I can highlight the potential problems and challenges in the investigation.	2.5	Ac	2.7	Ac
		4.0	ce	0.4	ce
		0.6	pt	6.6	pt
9	I can determine whether my collected data in educational investigation violates the assumption of the required statistical test.	2.1	Re	2.6	Ac
		1.9	jec	6.5	ce
		5.6	t	5.6	pt
10	I can conduct educational investigation involving experimentation.	2.0	Re	2.6	Ac
		7.0	jec	6.5	ce
		8.0	t	5.5	pt
11	I have the ability to conduct study in education that is multiple regression analysis.	2.3	Re	3.0	Ac
		5.9	jec	0.4	ce
		4.9	t	7.4	pt
12	I can successfully supervise undergraduate students' research project in my area of specialization.	2.1	Re	2.5	Ac
		3.8	jec	6.9	ce
		8.9	t	5.9	pt
13	I can conduct a study requiring an ex-post factor design.	2.1	Re	2.7	Ac
		9.0	jec	8.7	ce
		0.4	t	4.4	pt
14	I can carry out a study in education that requires descriptive survey design.	3.5	Ac	3.8	Ac
		5.4	ce	5.3	ce
		6.6	pt	6.6	pt
15	I can analyze my collected data using appropriate software.	2.3	Re	2.8	Ac
		7.7	jec	7.7	ce
		9.8	t	7.8	pt

16	I can report my finding in line with A.P.A style.	2.0	Re	2.0	Ac
		3.0	jec	8.1	ce
		9.0	t	7.7	pt
		0.0		7.7	
	Grand Mean	2.7	Ac	3.0	Ac
		3.6	ce	0.6	ce
		6.6	pt	6.5	pt
				6.6	

Table 3: Mean Ratings of Masters and Doctorate Students' Perception of Competency in Designing Educational Research

The result in table 3 showed that all the Ph.D students had mean above 2.50 indicating that they agreed in all the items. On other hand, Masters students agreed in some of the items as they had mean score above 2.50 except in items 7, 9, 10, 11, 12, 13, 15 and 16 where they had mean score less than 2.50 indicating that they have problems in those items.

Hypothesis 1: There is no significant difference in the mean ratings of male and female post-graduate students' perception of competency in designing educational research.

Grouping Variables	N	Mean	SD	t	df	Sig	Remark
Male	158	45.35	7.47	-0.35	298	0.73	Not Sig
Female	142	45.65	7.88				

Table 4: t-test Analysis of Male and female Post-graduate Students' Perception of Competency in Designing Educational Research

Table 4 shows that the male students' mean perception of competency in designing educational research (male, Mean=45.35, SD=7.47) is not significantly ($t=-0.35$, $df=298$, $P=0.73>0.05$) difference from the female students (female, Mean=45.65, SD=7.88). This implies that both male and female postgraduate students had similar perception of their competencies in designing educational research.

Hypothesis 2: There is no significant difference in the mean rating of Masters and Doctorate students' perception of competency in designing educational research.

Grouping Variables	N	Mean	SD	T	df	Sig	Remark
Masters	198	43.68	7.71	-6.04	298	0.001	Not Sig
Ph.D	102	49.01	6.21				

Table 5: t-test Analysis of Masters and Ph.D Postgraduate Students' Perception of Competency in Designing Educational Research

Table 5 shows that the Masters students' mean perception of competency in designing educational research (masters, Mean=43.68, SD=7.71) was significant ($t=-6.04$, $df=298$, $P=0.001<0.05$) difference from the Ph.D students (Ph.D, Mean=49.01, SD=6.21). This implies that both masters and Ph.D students differed in their perception of their competencies in designing educational research with Ph.D students having more competencies as compared to their masters' counterparts.

Discussion

The findings of the study showed that most postgraduate students can determine the proportion of the target population, explain how to collect data pertinent to their problem, state appropriate statistical test, design and scope of their study. The students equally agreed on some items showing that they can highlight the potential problems and challenges in their research work and analyse collected data correctly. On the other hand, some postgraduate students showed difficulties in items like the assumption guiding statistical test, use of some research design, generalizability of result, reporting of research work and educational investigation involving experimentation. The current findings are consistent with those of Eze et al. (2021), who evaluated the gender distribution and research application skills of students in Cross River State health training institutions and discovered that these students, in general, have high application skills for research and effectively apply those skills to their projects. According to their findings, students' research skills in relation to issue articulation and hypothesis formulation were significantly high, as evidenced by the positive t-values linked with those two talents.

Conversely, students' research skills in the areas of literature review and statistical analysis are notably low, as indicated by the negative t-values associated with those talents. As can be seen from the conclusion, the students were proficient in writing certain sections of the research paper but less so in others. The researchers encountered challenges when it came to referencing relevant literature and studies, crafting research questions, analysing data, and coming up with a research title. It also aligns with the findings of Meerah et al. (2012) in Measuring Graduate Students Research Skills Social and Behavioral Sciences, which showed that graduates should be able to conduct independent research because they were well-versed in research techniques. But there is still room for growth, especially in the areas of technique and quantitative analysis abilities.

The finding further showed that most of the male and female students have design skills in in that they believed they can determine the target population, determine the proportion of the target population that should be selected, can explain how to collect data pertinent to the problem, can

state the most appropriate statistical test for the problem, can state the design of the study, can delineate the scope of the study, can highlight the potential problems, and can carry out a study in education that requires descriptive survey design. However both male and female students were not competent in determining whether collected data in educational investigation violates the assumption of the required statistical test, in conducting educational investigation involving experimentation, conducting study in education that uses multiple regression analysis, supervising undergraduate students' research project in my area of specialization, conducting a study requiring an ex-post factor design and analysing collected data using appropriate software. A further analysis of the findings revealed no significant difference in the competencies possessed by both male and female postgraduate students. These findings agreed with the finding of Camera et al. (2021) in their work Gendered-Analysis on Research Competency of 21st Century Learners where they found out that both gender identities consider themselves as highly competent in research work. The findings of the study revealed that masters students were not competent in determining whether collected data in educational investigation violates the assumption of the required statistical test, in conducting educational investigation involving experimentation, conducting study in education that uses multiple regression analysis, supervising undergraduate students' research project in my area of specialization, conducting a study requiring an ex-post factor design and analysing collected data using appropriate software. This is consistent with the findings of Ismaila and Meerah (2011), who evaluated the research competencies of doctorate students and discovered that these students had performed fairly well in terms of their ability to conduct research. The findings, however, were based solely on the opinions of the students themselves regarding their research projects and their results. The research competency items that postgraduate and masters' students found challenging when writing their theses did not significantly differ in mean ratings, according to Ugwu et al. (2015) in Competency Needs of Postgraduate Students of STEM Education in Research Writing in Nigerian Universities.

Conclusion

Poor research work could emanate from inadequate knowledge in designing empirical studies. Hence, this study was carried out to ascertain the competencies of postgraduate students in the Faculty of Education, University of Nigeria in designing educational research. This is very important in order to enhance the quality of research output among educators. It was hypothesized that the competencies of male postgraduate students will not be significantly different from that of their

female counterparts. Similarly, it was also hypothesized that masters' students and Ph.D students would not differ significantly in their competencies in designing educational research. Based on the findings of the study, it is concluded that while postgraduate students showed competency in some areas in designing educational research, there are other areas in designing educational research that the students need improvement. More so, it is also concluded that gender had no significant role in postgraduate students designing of educational research. However, the programme level to which the postgraduate students were admitted significantly influenced the competencies possessed by the students in designing educational research. From the findings and conclusions made from the study, recommendations were outlined as follows:

- i. In order to enhance high research skills in undergraduate students, the development of research skills should be done with an integrated curriculum that is able to facilitate students to develop thinking skills and research processes.
- ii. Educators in this generation should be equipped with very high research competence and skills through seminars and training in research to be equipped enough to provide research skills needed by the young researchers.
- iii. Governments should cooperate to invest and enact support policies for inter-regional and national learning, provide research grant and research opportunities for students especially for master's students that had low mean scores in some items indicating that they have problems in those items.
- iv. Higher education system needs innovate and constructive flexible teaching strategies and learning activities that will ensure interconnectedness of roles of instruction, research, engagement and production.
- v. The students' research competency should be linked to a more innovative teaching beyond traditional classroom lectures which allows students to share their experiences and participate in classroom discussion.

References

- Akhtar, I. (2016). *Research Design*. Social research foundation, Kanpur, India.
- Alemu, S. K. (2018). The meaning, idea and history of University/Higher education in Africa: A brief literature review. *Forum for International Research in Education* Vol. 4, Iss. 3, 2018, pp. 210-227.
<https://files.eric.ed.gov/fulltext/EJ1199154.pdf>

- Anandan, K. (2016). Assessment for learning. <https://www.bdu.ac.in/cde/docs/ebooks/B-Ed/I/ASSESSMENT%20FOR%20LEARNING.pdf>
- Aripin, I., Hidayatc, T., Rustamanc, N. and Riandic (2021). The Effectiveness of Science Learning Research Skills: A Meta-Analysis Study. *Scientiae Educatia: Jurnal Pendidikan Sains*. https://www.researchgate.net/publication/357420145_The_Effectiveness_of_Science_Learning_Research_Skills_A_Meta-Analysis_Study
- Bandaranaike, S. (2018). From Research Skill Development to Work Skill Development. *Journal of University Teaching & Learning Practice*. <https://core.ac.uk/download/pdf/212719083.pdf>
- Camara, J. S., Cancino, E. C., Rahon, A. M., Terre, E. Q., Ventayen, R. J M., Quibilan, M. J. U. and Urbano, J. M. (2021). Gendered-Analysis on Research Competency of 21st Century Learners. *Journal of Contemporary Issues in Business and Government* Vol. 27, No. 1, 2021.
- Cebrián, G., Junyent, M. and Mula, I. (2020). Competencies in Education for Sustainable Development: Emerging Teaching and Research Developments. https://www.researchgate.net/publication/338548352_Competencies_in_Education_for_Sustainable_Development_Emerging_Teaching_and_Research_Developments
- Davidson, Z. E. and Palermo, C. (2015). Developing Research Competence in Undergraduate Students through Hands on Learning. *Journal of Biomedical Education* Volume 2015, Article ID 306380, 9 <http://dx.doi.org/10.1155/2015/306380>
- Eze, E.A., Adie, J.A., Out, M.A. and Bethel, I.A. (2021). Assessment of students' gender and application of research skills of students in Cross River state health training institutions. https://www.researchgate.net/publication/350104085_STUDENT_GENDER_AND_APPLICATION_OF_RESEARCH_SKILLS
- Ghaicha, A. (2016). Theoretical framework for Educational Assessment: A synoptic Review. *Journal of Education and Practice*, v7 n24 p212-231 2016 <https://eric.ed.gov/?id=EJ1112912>
- Gilmore, J. and Feldon, D. (2010). Measuring graduate students' teaching and research skills through self-report: Descriptive findings and validity evidence. <https://files.eric.ed.gov/fulltext/ED509407.pdf>
- James, M. (2010). Educational Assessment: overview. *International Encyclopedia of Education: Third Edition, Volume 3: (Oxford: Elsevier):* 161-171

- https://www.researchgate.net/publication/271964419_Educational_Assessment_overview
- Kirshenblatt-gimblett (2020). Organizing Academic Research Papers: Types of Research Designs <https://library.sacredheart.edu/c.php?g=29803&p=185902>
- Meerah, S. M., Osman, K. Zakaria, E., Ikhsan, Z. H., Krish, P., Lian, D. K. & Mahmud, D. (2012). Measuring Graduate Students Research Skills T. *Social and Behavioral Sciences* 60 (2012) 626 – 629. file:///C:/Users/SMART/Downloads/measuring-graduate-students-research-skills%20(1).pdf
- Muredzi, P. (2019). Research and the Concept of Research. AAU Workshop on Quality Research. https://www.researchgate.net/publication/331706666_Research_and_the_Concept_of_Research
- Nworgu, B. G. (2015). Educational research: basic issues and methodology (3rd ed.). Nsukka: wisdom Publisher LTD.
- Prokhorchuk, A. (2014). The definition of research competence. https://bazhum.muzhp.pl/media/files/Edukacja_Technika_Informatyka/Edukacja_Technika_Informatyka-r2014-t5-n1/Edukacja_Technika_Informatyka-r2014-t5-n1-s439-443/Edukacja_Technika_Informatyka-r2014-t5-n1-s439-443.pdf
- Shahsavar, Z & Kourepaz, H. (2023). Postgraduate students' difficulties in writing their theses literature review. *Cogent Education*, 7: 1784620, <https://doi.org/10.1080/2331186X.2020.1784620>
- Tremblay, K., Lalancette, D. and Deborah, D. (2012). Assessment for Learning Formative Assessment <https://www.oecd.org/education/skills-beyond-school/AHELOFSReportVolume1.pdf>
- Ugwul, A. N., Ifeanyieze, F. O. and Agbo, P. N. (2015). Competency Needs of Postgraduate Students of STEM Education in Research Writing in Nigerian Universities. *Creative Education*, 6, 701-706. <http://dx.doi.org/10.4236/ce.2015.68071>. file:///C:/Users/SMART/Desktop/competency/Competency_Needs_of_Postgraduate_Students_of_STEM_.pdf
- Yambi, T. C. (2018). Assessment and evaluation in education. https://www.researchgate.net/publication/342918149_ASSESSMENT_AND_EVALUATION_IN_EDUCATION
- Yarullin, I. F., Bushmeleva, N. A. and Tsyrcun I. I. (2015). The research competence development of students trained in mathematical direction. https://www.researchgate.net/publication/286856468_The_research_competence_development_of_students_trained_in_mathematical_direction

THE EFFECT OF ONLINE TEACHING ON STUDENTS

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Abstract: *The professional administration of student counseling plays a crucial role in the formation and harmonious development of students, particularly those who have experienced prolonged periods of learning in isolation due to the online education system. In our case, eighth-grade students who have undergone this type of education require targeted psychological, emotional, and academic support to reintegrate successfully into a traditional learning environment. Through specialized counseling programs, students can enhance their social interaction skills, improve their emotional well-being, and regain confidence in face-to-face educational settings. Moreover, professional counseling helps identify individual challenges, providing tailored interventions that facilitate both academic achievement and personal growth. Addressing the long-term effects of online learning requires a structured, empathetic, and adaptive approach, ensuring that students develop resilience, motivation, and a sense of belonging within their school community.*

Key words: *impact; adolescent counseling; online teaching; isolation.*

Theoretical foundation

I will address the research objectives on detecting and professional approach of the risks/benefits of online teaching. I will also analyze the impact of social isolation on high school students in the process of learning and cognitive and emotional development.

O1 - Knowing the psycho -emotional problems of the students, as a starting point, for the purpose of organizing the psycho -pedagogical experiment;

O2 - administration of the process of counseling of students, together with the other specific didactic strategies, in order to form and develop the resistance to stress;

O3 - Evaluation of the didactic contribution by social counseling and integration and the teaching strategies of the process of preventing/healing students who have learning difficulties

O4 - Registering the progress of the students exposed to the risks mentioned after applying the progress factors.

Research

The research is used the questionnaire for testing the emotional states, to identify some aspects of personality development in students. (Botezatu, 2020) It allows you to obtain valuable information on different aspects of the child's temperament, his emotional world and how it relates to the external environment.

The research lot consists of 24 students, of which 13 girls and 11 boys. These are students in the eighth grade, between the ages of 13 and 14, from the Agrișu Mare High School, Târnova commune, Arad County. Of the 24 students, 16 come from organized families, with harmonious relationships and concerned about the education of their children, 6 students come from single -parent families, and two students are raised by grandparents.

The stages of the research

No. Crt the first and last name of the student age sex

1 A.M.	14 years f
2 B.A.M.	13 years f
3 B.R.	13 years f
4 C.M.I.	14 years f
5 C.M.D.	13 years f
6 C.D.I.	14 years m
7 C.D.	13 years f
8 C.I.R.	14 years f
9 C.N.A.	14 years m
10 D.A.	13 years m
11 G.A.	14 years m
12 G.M.R.	13 years f
13 L.B.	13 years m
14 M.A.A.	13 years f
15 N.B.O.	14 years m
16 N.C.S.	13 years m
17 S.A.D.	13 years m
18 S.D.R.	14 years m
19 Ș.L.V.	13 years f
20 et al.	13 years m
21 T.A.	14 years f
22 T.E.	13 years m
23 V.L	14 years f
24 V.A.M.	13 years f

Table 1 - Research Lot

The research was carried out between May 2020 and June 2020 and September 2020-May 2021.

In order for the research to be effective, its approach comprises three stages:

1. Finding stage (initial evaluation stage)
2. The improvement stage
3. The final stage

1. The finding stage (the initial evaluation) was done in March 2020. In this interval we applied the questionnaire for testing the emotional states and the opinion about the online school, to identify the initial characteristic features of the students concerned.

2. The improvement stage was made between September 20, 2020 - May 2021 and the progress factor (counselling activities and invitations to online conferences) was introduced. During this interval we organized and carried out periodically instructional-educational activities based on activities on social development, through which we pursued the formation and development of personality traits and the emotional development of children (the students of the eighth grade). During this stage I took into account the particularities of age and the level of physical and mental development of the students involved. The activities of counselling and prevention of the risks proposed for conducting in the mentioned interval, as well as the teaching strategies applied with them, were adapted to the level of the class and were designed in accordance with the school syllabus and the planning of the discipline of the Romanian language and literature- the 8th grade.

3. The evaluation stage carried out between 01-20 June 2021 was done by reapplying the questionnaire, so we could identify the new level of development of the characteristic features of the students concerned. At this stage I followed the efficiency of introducing the progress factor and using social counselling and relationship activities. Thus, we could compare the level of the initial development of the personality of the students with the level of development registered at the end of the experiment. The final result obtained by the students participating in the experiment and the data their progress is presented below.

Psycho - pedagogical research methods and techniques

The method used in pedagogical research is the investigation based on the questionnaire. In the classroom we applied psycho-pedagogical (Opre, 2002) methods and techniques to combat anxiety generating states such as: recommendations of recreational shows, invitations to online conferences on specific issues, providing links with materials on preventing and treating depression, supply courses and lessons on personal development.

The closed-type questions are not included in the questionnaire, they aim to lead the subject to answer variants, the data processing being easier to achieve.

Questionnaire for students

At the level of the eighth grade I made a questionnaire in order to identify the reactions of the students who study in difficult isolation situations, in online teaching regime (Zlate, 2000).

I circle yes or no next to the following statements:

1. Books are very important to me. yes no
2. I like to read more on the tablet. yes no
3. I am concerned about the questions about life and existence. yes no
4. I had any suicidal thought. yes no
5. I am good at the media conflicts and disputes between colleagues. yes no
6. I can easily forgive. yes no
7. I love drawing or sketching. yes no
8. I like to participate in hours online. yes no
9. I keep a journal in which I record the events in my life. yes no
10. I love to walk by nature, alone or with friends. yes no
11. I spend time analyzing my own emotions and reactions. yes no
12. I feel lonely and abandoned. yes no
13. Often asking for the advice and opinion of others. yes no
14. The Romanian language time is my favorite subject. yes no
15. The disappointments generated my distrust in people. yes no
16. I feel the need to discuss with someone my fears. yes no
17. Recently I wrote something that made me feel appreciated by the others. yes no
18. I was threatened on social networks. yes no
19. I have some important purposes in life, which I think regularly. yes no
20. My life would be more beautiful if I were physically learning at school. yes no
21. Sometimes it is hard for me to accept others as I am not. yes no
22. I like online lessons more than physical. yes no
23. I frequently use a camera or video camera to record what I see around. yes no
24. It is hard for me to stand still more time. yes no
25. Can I respond to attacks with arguments. yes no
26. I like to learn regardless of diet: physical or online. yes no
27. I know my strong and weak points well. yes no
28. Sometimes I am surprised by thinking about death. yes no
29. It is important to me to know the needs and wishes of others. yes no

30. I am good to help the sad. yes no
 31. I am sensitive to conflicts and quarrels. yes no
 32. I do sports/physical activities regularly. yes no
 33. I like to be in the center of attention. yes no
 34. I like to write lyrics. yes no
 35. I often think of the meaning of life. yes no
 36. I can adapt quickly to online teaching. yes no
 37. I like to get involved in school or community activities. yes no
 38. Sometimes we had suicidal thoughts. yes no
 39. I can easily imagine the future. yes no
 40. I'm not upset if someone contradicts me in the online environment.
 yes no

Genus: male female

Results

Nr. Crt.	Common elements/characteristics identified	Number of students	Percentage
1.	Fear	7	29,00 %
2.	Social isolation	5	20,80 %
3.	Bullying	6	25,00 %
4.	Suicidal tendency	3	12,05 %
5.	Development of addictions	14	58,33 %

Following the finding of the problems of some students, we decided to use the extracurricular activities, together with the other specific didactic strategies, in order to form and develop the personality traits of the studied students.

Presentation of results obtained at the final assessment

As can be seen, following the final assessment 4 students (16.60%) still have insecurity and fear, 2 students (8.33%), they still tend to isolate, 4 students (16.60%) still have Diseases caused by Cyberbullyng, none of them have no suicidal thoughts (0.00%), 8 students (33.30%) encounter difficulties in managing addictions.

Nr. Crt.	Common elements/characteristics identified	Number of students	Percentage
1.	Fear	4	16,60 %
2.	Social isolation	2	8,33 %
3.	Ciber-Bullying	4	16,60 %
4.	Suicidal tendency	0	0 %
5.	Development of addictions	8	33,30 %

Comparative analysis of data

In this subchapter I will present the comparative analysis of the data obtained following the application of the questionnaire for testing the emotional states and highlighting the progress of the eighth-grade students.

Following the comparative analysis of the data and the percentages of the initial and final stage, a progress can be observed in the development of the personality of the students concerned.

Thus, the number of students who had symptoms of fear decreased from 7 students (29.00%) to 4 students (16.60), the number of students who had isolated tendencies decreased from 5 students (20.80%), at 2 students (18.33), the number of students victims of cyberbullying decreased from 6 students (25.00%), to 4 students (16.60%), the number of students who had suicidal thoughts and attempts respectively Suicide decreased from 3 students (12.00%) to 0 students (0.00%), and the number of students who developed addicts decreased from 14 students (58.33%), to 8 students (33, 35%).

Conclusions

Following the analysis of the theories and approaches of specialized works that deals the theme of teaching online teaching, 2020, it can be concluded that online learning has certain risks. It is an effective crisis method, perhaps an alternative method of learning, but which can influence the characteristic and personality traits of the student. Following the present study, I find that online learning is not the ideal method of providing education, the classic one remaining the recommended and most effective method.

Learning/teaching online requires a much greater effort from the teachers, a great student's request, involving parents in the education process.

Properly applied online learning, with interest and involvement from the teacher, can become a pleasant, useful and efficient teaching method, but in the short term. The use of these long-term methods can create real emotional and physical problems (anxiety, depression, sedentary lifestyle, etc.)

The instructional-educational process, through online activities, as an alternative crisis method, have the role of preparing the schoolchildren in becoming the adult tomorrow, and this involves ensuring the optimal level of intellectual, emotional, affective development.

The considerable simplification of the volume of information is necessary, as well as the creation of a safe, harmonious and relevant climate, regarding the praxis.

References

- Osterrieth, P., Introduction to the psychology of the child, Didactic and Pedagogical Ed., Bucharest, 1976.
- Opre, A., New trends in personality psychology, ASCR Ed., Cluj-Napoca, 2002.
- Onisim Botezatu, Coronavirus conspiracy, demonic attack or divine will, 2020.
- Warren, H., C., Carmichael, L., Elements of Human Psychology, Houghton Mifflin, 1930.
- Zlate, M., Foundations of psychology, Polirom Ed., Iași, 2000.

DOMINANT ATTITUDES OF PRESCHOOL TEACHERS TOWARDS NURTURING, PROMOTING AND ENHANCING TRADITIONAL VALUES WITHIN THE INTEGRATED APPROACH TO PRESCHOOL EDUCATION

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Abstract: *During the preschool period, activities designed for children should foster the initiation of friendly relationships based on mutual understanding and the acquisition of traditional values that promote togetherness and encourage individual responsibility. This can be achieved by nurturing customs and music, which, in this context, serve as natural channels of communication. These practices help to instil behavioural norms, strengthen connections, and promote mutual respect. In this article, the authors analyse the dominant attitudes of preschool teachers towards methods for promoting traditional values in preschool-aged children within the integrated approach to education. This is the primary focus of the conducted research. The instrument used was a questionnaire specifically designed for this study, titled Questionnaire on the opinions of preschool teachers on promoting traditional values within the integrated approach to preschool education. The research sample consisted of 116 preschool teachers (N = 116). The selected factors were interpreted as follows: Nurturing traditional values through educational activities; Challenges associated with activities/projects related to traditional values; Development and strengthening of competencies for conducting activities/projects related to traditional values and Local community as a resource for promoting traditional values.*

Key words: *dominant attitudes; preschool teachers; traditional values; integrated approach to preschool education.*

Introduction

The integrated approach in the process of education involves the functional connection and alignment of educational fields and program contents that are similar or complementary, aimed at achieving the planned goals (Mićanović, 2013 as cited in Maljković, Vukobrat, Radaković & Petrović, 2020). This approach stems from the need to facilitate the mutual integration of experiential learning, theoretical knowledge, and practical skills. Additionally, the integrated approach emphasizes the analysis of one's own practice and a critical review of acquired experiences and knowledge. Within this approach, the teacher's role is to introduce children to as many integrated learning scenarios as possible and to use dialogue with the children to link planned activities with spontaneous experiences. However, simply delivering appropriate activities and content does not constitute integrated learning. Integrated learning should not be equated with teaching that merely correlates activities and content. Cooperative learning and problem-based learning are two key aspects of integrated learning. Integrated learning becomes particularly important in problem-solving methods, where it transitions from personal experiences to a broader understanding of the problem through interaction with others and the surrounding community (Stojanović & Bogavac, 2016 as cited in Maljković, Vukobrat, Radaković & Petrović, 2020).

Within educational work, various activities can be implemented through the integration of different content areas. Topics related to tradition, which also serve to promote values, highlight the need to integrate multiple domains. The integrated approach to the preschool-aged children's learning and development is based on viewing the individual as a unique, whole being – active, interactive and creative (Milošević, Zorić, Ulić, Colić & Matović, 2017). Therefore, thematically connecting content from various areas enables teachers to direct the combined, previously acquired knowledge towards new knowledge, experiences and values related to the domain of folk tradition.

Traditional values stem from the understanding of the world, the human connection with nature and relationships within the community, as well as the influence of religion. These values play an important role in shaping the culture and social life of a nation. According to Inglehar (2008), traditional values emphasize the importance of religion, respect for authority, and the relationships between parents, children, and the traditional family. However, international trends of globalisation, technological innovation, changes in the learning environment, as well as internal developments in socio-cultural contexts and the creation of educational policies, continuously shape new and contemporary values, creating challenges in the process of defining and building identity (Läänemets, Kalamees-Ruubel, Sepp and Kiilu, 2019).

When it comes to preparing young people to become active participants and productive members of our society, preschool curricula play a crucial role. *The Fundamentals of the Preschool Education Programme* (2018) states that the real curriculum is shaped by the context of the preschool institution, which is defined by the specific culture and structure of the institution, the immediate community and all participants in the program. In this context, the institution's culture comprises a fixed system of values, norms, rules, traditions, expectations and relational patterns that guide the institution's operations. For this reason, recent research has focused on analysing the ways in which preschool teachers nurture systems of values, norms and traditions in kindergartens.

Authors Vukićević, Golubović Ilić and Stanojević (2026) argue that tradition (from Latin *traditio* - the act of handing down, delivering, or transmitting something, particularly customs, beliefs, or information from one generation to another) involves the process of transmitting, preserving and passing down ideas, values, principles, patterns, and models, either orally or in written form. According to these authors, the preservation of tradition is a complex task that requires various forms of work and activities. Although children initially acquire knowledge about the lives of their predecessors, their customs, clothing, songs, traditional musical instruments, and other aspects of folk tradition within their families, it is crucial to expand this knowledge in a planned and organized manner – particularly during the times when children spend most of their time in institutions, outside the family environment, such as in kindergartens. For this reason, the authors mentioned emphasize the need to educate younger generations in the spirit of traditional values and to raise their awareness of the importance of preserving cultural heritage, while also learning about the customs of other peoples – including different nations, ethnic minorities, and ethnic groups – and respecting existing differences. Before children start school, it is the preschool teacher who should introduce them to basic traditional values of the environment in which they grow and develop, inspire them to learn songs and dances, get familiar with antique objects, crafts, and customs of their nation, and encourage them to actively participate in the cultural life of their region.

In kindergarten, teachers can use a variety of group activities to nurture and promote traditional values, including planned learning situations, practical everyday situations, and playtime. The available literature leads to the conclusion that the dominant focus is on expert articles analysing planned learning situations, particularly those involving traditional games, with special emphasis on music games. These games are part of folk culture and reflect the rich experiences of multiple generations. Although they originated from ritual community practices, they were categorized as recreational activities for both children and

adults as early as the previous century (Radosavljević & Ružin Đurčok, 2022). Traditional music games represent a heritage that has managed to survive into modern times, which underscores their importance. Children actively participate in nurturing and promoting cultural heritage, especially in rural areas, where these traditions have been transmitted from one generation to another, playing a key role in helping children adjust to their environment (Marjanović, 2002). For this reason, Jeremić, Markov and Nikolić (2003) emphasize that traditional music can be integrated into educational work in kindergartens through activities such as learning traditional folk songs, lullabies, counting rhymes, games accompanied by singing and/or musical instruments, *kolo* and other folk dances.

Music and dance are considered natural and spontaneous mediums through which children can develop various skills and enhance their potential. When they practice and perform traditional folk dances, such as *kolo*, and songs, opportunities arise for exchanging customs, knowledge, and skills within a nation or ethnic minority, which can significantly contribute to preserving creative works from fading into oblivion. Traditional dances are among the most vivid ways to represent the spiritual, cultural, and historical heritage of a nation. They provide children with an active means of learning about the lives of their predecessors, promoting and emphasizing important values.

By embracing diversity, traditional dances serve as an expression of the cultural identity of a community and a way to transmit specific cultural elements (Marušić & Jukić, 2022, p. 11), including values.

Therefore, it can be concluded that dance has an educational character, as it promotes traditional values both orally and through movement, offering an opportunity to actively contribute to the education of new generations and the preservation of tradition (Jeremić & Milenović, 2020, p. 443). By nurturing customs, which are behavioural norms specific to a particular group, a suitable direction is established for transmitting values important to the community.

The purpose of the conducted research was to empirically analyse the dominant attitudes of preschool teachers towards nurturing, promoting and enhancing traditional values within the integrated approach to preschool education.

Methodological approach to research

In accordance with the theoretical framework presented, the authors of this article formulated the following research question: What are the dominant attitudes of preschool teachers towards nurturing, promoting, and enhancing traditional values within the integrated approach to preschool education? The research was empirical and non-experimental – utilizing a survey on a sample.

The research instrument

The instrument used in the research was the “Questionnaire on the opinions of preschool teachers on promoting traditional values within the integrated approach to preschool education / Nurturing traditional values in the kindergarten”, specifically designed for the needs of this study. In addition to a section for analysing demographic data, the questionnaire includes a 4-degree Likert scale with 26 items. Respondents rated the items on the scale according to their level of agreement, with the following options: 1 – Never, 2 – Rarely, 3 – Sometimes, 4 – Often. The instrument also contains open-ended questions. Respondents had the opportunity to answer two open-ended questions based on their own experience: 1) Name the title of a project you have implemented aimed at promoting traditional values; 2) Provide a brief description of a project activity aimed at nurturing traditional values.

The scale demonstrated good internal consistency, with a calculated Cronbach's Alpha coefficient of 0.902, indicating excellent reliability.

The research sample

The research sample was purposive and consisted of preschool teachers employed in preschool institutions working with children aged three to seven during the 2023/24 academic year. The sample included 116 preschool teachers (N = 116). Participants were from 112 state preschool institutions (96,6%) and 4 private preschool institutions (3,4%) in the Republic of Serbia.

Results overview and analysis

This study aimed to explore the dominant attitudes of preschool teachers towards nurturing, promoting and enhancing traditional values within the integrated approach to preschool education.

The first step in the research involved analysing the opinions of preschool teachers regarding the nurturing, promoting and enhancing traditional values within this approach. The frequency (%) and mean values of the respondents' answers are presented in Table 1. The respondents' answers ranged from 1 (never) to 4 (often).

Items	Min.	Max.	AC	1 never	2 rarely	3 sometimes	4 often
I nurture and promote traditional values in preschool-aged children during planned learning activities.	2	4	3,474	0%	1,70%	49,10%	49,10%
I nurture and promote traditional values in preschool-aged children during free play.	2	4	3,328	0%	8,60%	50,00%	41,40%
I nurture and promote traditional values in preschool-aged children during extended play.	2	4	3,319	0%	7,80%	52,60%	39,70%
I nurture and promote traditional values in preschool-aged children during guided play.	2	4	3,405	0%	4,30%	50,90%	44,80%

I nurture and promote traditional values in preschool-aged children during practical everyday situations within daily routines.	2	4	3,543	0%	6,00%	33,60%	60,30%
I nurture and promote traditional values in preschool-aged children during practical everyday situations within rituals.	1	4	3,431	0,90%	7,80%	38,80%	52,60%
I use folk music (folk songs and instruments) in activities aimed at nurturing traditional values.	1	4	3,207	0,90%	7,80%	38,80%	52,60%
I use traditional games in activities aimed at nurturing traditional values (e.g.,	1	4	3,431	0,90%	7,80%	38,80%	52,60%

„Okolo salata“, „Kolariću Paniću“, „Care, care, gospodare, koliko ima sati?“ and other games).							
Holiday activities (e.g., Easter, Christmas celebrations) are designed to nurture traditional values.	2	4	3,759	0%	1,70%	20,70%	77,60%
I use music games (games with singing, accompanied by musical instruments, folk dances) in activities aimed at nurturing traditional values.	2	4	3,405	0%	6,00%	47,40%	46,60%
I use music listening activities in activities aimed at nurturing traditional values.	1	4	3,345	1,70%	5,20%	50,00%	43,10%
I try to include children in	1	4	3,103	6,00%	15,50%	40,50%	37,90%

activities aimed at learning about traditional cuisine.							
I try to include children in activities aimed at introducing them to customs, past lives of our people and such.	2	4	3,431	0%	7,80%	41,40%	59,90%
During activities aimed at nurturing traditional values, I perceive children of other nationalities as a challenge.	1	4	2,724	10,30%	29,30%	37,90%	22,40%
During activities aimed at nurturing traditional values, I perceive parents of children of other nationalities as a challenge.	1	4	2,595	10,30%	37,90%	33,60%	18,10%
During activities	1	4	2,474	12,90%	36,20%	41,40%	9,50%

aimed at nurturing traditional values, I face the challenge of children not showing interest in project topics related to tradition, nationality, and culture.							
During activities aimed at nurturing traditional values, I face the challenge of a lack of traditional equipment, materials, and resources (e.g. old objects such as a spindle, a loom, traditional attire, etc.).	1	4	2,845	7,80%	26,70%	38,80%	26,70%
The places in the local community I visit as a preschool teacher, in order to contribute to the	1	4	2,957	6,00%	20,70%	44,80%	28,40%

promotion and preservation of traditional values in children, are cultural-artistic associations .							
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are museums.	1	4	3,086	6,00%	18,10%	37,10%	38,80%
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are	1	4	3,216	3,40%	8,60%	50,90%	37,10%

cultural centres.							
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are traditional associations and the events they organize in our community.	1	4	2,86 2	9,50%	27,60 %	30,20 %	32,80 %
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are individuals who practice old crafts	1	4	2,83 6	8,60%	25,00 %	40,50 %	25,90 %

(e.g., making <i>opanci</i> , pottery, sewing traditional attire, viewing baskets, etc.).							
I enhance my educational practice by attending professional development seminars on the topic of traditional values.	1	4	2,690	12,90%	24,10%	44,00%	19,00%
I enhance my educational practice by attending workshops on the topic of traditional values.	1	4	2,784	10,30%	22,40%	45,70%	21,60%
I enhance my educational practice by reading printed resources on traditional values.	1	4	3,138	1,70%	17,20%	46,60%	34,50%
I enhance my educational	1	4	3,147	0,90%	17,22%	48,30%	33,60%

practice by reading articles, books, monographs on traditional values available online.							
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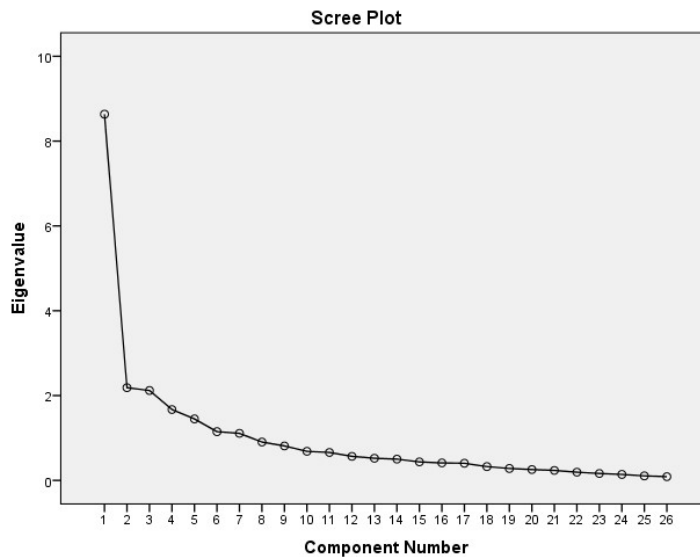
Table 1. Preschool teachers’ responses on nurturing, promoting and enhancing traditional values within the integrated approach to preschool education¹

A one-way analysis of variance (ANOVA) was conducted to examine the influence of socio-demographical variables on the dominant attitudes of preschool teachers towards nurturing, promoting and enhancing traditional values within the integrated approach to preschool education. The analysis revealed no statistically significant differences between the four respondent groups based on years of professional experience (less than 10 years, 11–20 years, 21–30 years, and over 30 years). Furthermore, ANOVA results indicated a statistically significant difference ($p < 0.05$) among five respondent groups based on the kindergarten group in which they are employed (younger, middle, older, mixed and the pre-school year). This difference was observed in the item *I use music listening activities in activities aimed at nurturing traditional values* ($F = 4.068, p = 0.004$), with preschool teachers working in mixed-age groups expressing a stronger agreement. Additionally, ANOVA results demonstrated statistically significant differences ($p < 0.05$) between two respondent groups based on the location of the kindergarten (village vs. town) in relation to three items. The first item, *I use folk music (folk songs and instruments) in activities aimed at nurturing traditional values* ($F = 4.267, p = 0.041$), showed that preschool teachers from rural kindergartens were more likely to agree. The other two items, *The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are museums* ($F = 24.031, p = 0.000$) and *The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are cultural centres* ($F = 19.320, p = 0.000$), indicated that teachers in urban

¹ Distribution of the respondents’ answers (frequency and percentages) was presented at the conference *Preschool Teacher in the 21st Century*, held under the title *The Promotion of Values within Preschool Education*, at the Department of Preschool Education in Aleksinac, on May 18-19, 2024.

kindergartens more frequently visited these sites. This is likely due to the proximity of museums and cultural centres to urban areas, making them more accessible to teachers working in town-based kindergartens. To reduce dimensionality and simplify the interpretation of variables, factor analysis was conducted on the scale measuring preschool teachers' dominant attitudes towards nurturing, promoting, and enhancing traditional values within the integrated approach to preschool education. All 26 items in the scale were subjected to principal component analysis. The appropriateness of the data for factor analysis was confirmed through the correlation matrix, with coefficients exceeding 0.3. The Kaiser-Meyer-Olkin (KMO) measure was 0.824, which is above the recommended threshold of 0.6 (Kaiser, 1970, 1974, as cited in Pallant, 2009). Bartlett's test of sphericity (Bartlett, 1954, as cited in Pallant, 2009) yielded a statistically significant result ($p < 0.000$), indicating that the correlation matrix was factorable.

The analysis of the extracted components revealed seven factors; however, three factors each contained only two loadings. Since it is generally recommended that each factor have at least three significant loadings, four components were retained. These four components account for 56.20% of the total variance. Cattell's scree plot is presented in *Graph 1*.



Graph 1: *Cattell's scree plot*

To facilitate the interpretation of the components, Oblimin rotation was applied. The resulting component structure revealed several large factor loadings, with each variable showing significant loadings on only one component (see Table 2).

FACTOR	FACTOR LOADING			
	1	2	3	4
<i>1. Nurturing traditional values in educational practice</i>				
I nurture and promote traditional values in preschool-aged children during extended play.	0,832			
I nurture and promote traditional values in preschool-aged children during guided play.	0,814			
I nurture and promote traditional values in preschool-aged children during free play.	0,780			
I nurture and promote traditional values in preschool-aged children during practical everyday situations within rituals.	0,760			
I nurture and promote traditional values in preschool-aged children during planned learning activities.	0,727			
I nurture and promote traditional values in preschool-aged children during practical everyday situations within daily routines.	0,718			
I use music listening activities in activities aimed at nurturing traditional values.	0,605			
Holiday activities (e.g., Easter, Christmas celebrations) are designed to nurture traditional values.	0,482			
I try to include children in activities aimed at introducing them to customs, past lives of our people and such.	0,405			

I try to include children in activities aimed at learning about traditional cuisine.	0,392			
I use music games (games with singing, accompanied by musical instruments, folk dances) in activities aimed at nurturing traditional values.	0,386			
I use traditional games in activities aimed at nurturing traditional values (e.g., “Okolo salata“, “Kolariću Paniću“, “Care, care, gospodare, koliko ima sati?“ and other games).	0,366			
2. Challenges associated with activities/projects related to the topic of traditional values				
During activities aimed at nurturing traditional values, I perceive children of other nationalities as a challenge.		0,814		
During activities aimed at nurturing traditional values, I perceive parents of children of other nationalities as a challenge.		0,808		
During activities aimed at nurturing traditional values, I face the challenge of children not showing interest in project topics related to tradition, nationality, and culture.		0,732		
During activities aimed at nurturing traditional values, I face the challenge of a lack of traditional equipment, materials, and resources (e.g. old objects such as a spindle, a loom, traditional attire, etc.).		0,568		
3. Developing and strengthening competencies for implementing				

<i>activities/projects on traditional values</i>				
I enhance my educational practice by attending professional development seminars on the topic of traditional values.			0,790	
I enhance my educational practice by attending workshops on the topic of traditional values.			0,722	
I enhance my educational practice by reading articles, books, monographs on traditional values available online.			0,643	
I enhance my educational practice by reading printed resources on traditional values.			0,643	
I use folk music (folk songs and instruments) in activities aimed at nurturing traditional values.			0,480	
<i>4. Local community as a resource for promoting traditional values</i>				
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are museums.				0,819
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are cultural centres.				0,728
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are individuals who practice old crafts (e.g., making <i>opanci</i> , pottery, sewing traditional attire, viewing baskets, etc.).				0,709

The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are traditional associations and their events organized in our community.				0,574
The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are cultural-artistic associations.				0,550

Table 2. The overview of group factors
 Extraction method: Principal component analysis
 Rotation method: Oblimin with Keiser normalization

The extracted factors were interpreted as follows: *Nurturing traditional values in educational practice* consisting of 12 items; *Challenges associated with activities/projects related to the topic of traditional values* with 4 items; *Developing and strengthening competencies for implementing activities/projects on traditional values* with 5 items and *Local community as a resource for promoting traditional values* with 5 items (see Table 2).

Positive correlations were observed between all the factors. A moderate correlation was found between *Nurturing traditional values in educational practice* and *Developing and strengthening competencies for implementing activities/projects on traditional values* ($r = 0.350$), as well as between *Nurturing traditional values in educational practice* and *Local community as a resource for promoting traditional values* ($r = 0.308$). A small correlation was observed between *Nurturing traditional values in educational practice* and *Challenges associated with activities/projects related to the topic of traditional values* ($r = 0.198$).

A small correlation was observed between the factors *Challenges associated with activities/projects related to the topic of traditional values* and *Developing and strengthening competencies for implementing activities/projects on traditional values* ($r = 0.136$), as well as between *Challenges associated with activities/projects related to the topic of traditional values* and *Local community as a resource for promoting traditional values* ($r = 0.107$).

Additionally, a small correlation was found between *Developing and strengthening competencies for implementing activities/projects on traditional values* and *Local community as a resource for promoting traditional values* ($r = 0.277$).

Results, discussion and conclusion

Our research confirmed the general hypothesis that preschool teachers most often nurture, promote and enhance traditional values through their educational practice.

The results of the one-way analysis of variance (ANOVA) revealed a statistically significant difference among five respondent groups based on the kindergarten group in which they are employed (younger, middle, older, mixed and the pre-school year). This difference was observed only in the item *I use music listening activities in activities aimed at nurturing traditional values* ($F = 4.068, p = 0.004$), with preschool teachers working in mixed-age groups expressing a stronger agreement. It can be assumed that music listening activities are more suited to project-based activities in mixed-age groups, given the heterogeneous age structure of the children. When examining statistically significant differences between the two respondent groups based on the location of the kindergarten (village vs. town), significant differences were found in the item *I use folk music (folk songs and instruments) in activities aimed at nurturing traditional values*. Teachers in village kindergartens expressed stronger agreement. This may be attributed to the easier access to folk instruments and songs in rural areas, as these are often more integrated into the daily lives of children, resulting in greater interest and engagement. Additionally, statistically significant differences were observed in the items *The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are museums* and *The places in the local community I visit as a preschool teacher, in order to contribute to the promotion and preservation of traditional values in children, are cultural centres*. Teachers in urban kindergartens expressed stronger agreement with these items, likely due to the proximity of museums and cultural centres in urban areas, which makes them more accessible for educators in town-based kindergartens. These findings suggest that preschool teachers in rural areas visit museums less frequently to promote and nurture traditional values compared to their urban counterparts. Similar results were found in the research conducted by Maran and Jovišić (2017), which indicated that children in rural areas, due to geographical distance, are less likely to visit urban cultural institutions (museums, galleries, theatres, cultural-historical monuments). However, local museums and collections in rural areas offer opportunities for educators to introduce children to the civilizational values of their birthplace through lectures and workshops, potentially fostering an interest in history, art, and ethnology. Unfortunately, their research also found that educators in rural areas often neglect these resources. To address this gap, it is crucial to incorporate more content and activities related to traditional values into

the curricula for future preschool teachers, enhancing their competencies in these areas. Birch (2028) highlights that an alternative approach may lie in collective reflection on the experiences of children and adults in museums, offering unique and underexplored content for both groups. Subsequent to the Oblimin rotation, four factors were extracted: *Nurturing traditional values in educational practice*; *Challenges associated with activities/projects related to the topic of traditional values*; *Developing and strengthening competencies for implementing activities/projects on traditional values* and *Local community as a resource for promoting traditional values* (see Table 2). As expected, positive correlations were observed between all the factors. A moderate correlation was found between *Nurturing traditional values in educational practice* and *Developing and strengthening competencies for implementing activities/projects on traditional values*. This suggests that preschool teachers enhance their professional competencies through daily practice, and conversely, a more empowered teacher can implement project activities with greater professionalism. The moderate correlation between *Nurturing traditional values in educational practice* and *Local community as a resource for promoting traditional values* indicates the significant role of the local community and its resources in supporting the nurturing of traditional values in kindergartens. A small correlation was observed between *Nurturing traditional values in educational practice* and *Challenges associated with activities/projects related to the topic of traditional values*, suggesting that preschool teachers are able to effectively address these challenges. This is further supported by the weak correlation between *Challenges associated with activities/projects related to the topic of traditional values* and *Developing and strengthening competencies for implementing activities/projects on traditional values*.

The small correlation between the factors *Challenges associated with activities/projects related to the topic of traditional values* and *Local community as a resource for promoting traditional values* suggests that preschool teachers effectively navigate the challenge of collaborating with the local community. Specifically, they utilize various local sites and institutions to nurture traditional values in preschool-aged children. Similarly, a small correlation between *Developing and strengthening competencies for implementing activities/projects on traditional values* and *Local community as a resource for promoting traditional values* indicates that preschool teachers enhance their professional competencies through their collaboration with the local community.

From the factors extracted through Oblimin rotation, we were able to compare the various approaches to nurturing traditional values through direct work with children, the challenges associated with such project activities, and the active involvement of local community resources,

which may contribute to strengthening the competencies required in these areas. In most cases, medium or small correlations were observed between the factors, suggesting the integrative potential of folk traditions and values, which can be combined with various fields through the use of local community resources.

Given that folk traditions represent an infinite resource of knowledge, preschool teachers have expressed a readiness to engage with this topic across multiple domains, opening opportunities for collaboration with diverse community stakeholders. Among the dominant attitudes of preschool teachers, the most prominent is the presence and use of music content. This is entirely justified by the syncretic nature of music, which serves as both an important element and a testament to past cultural eras. Cooperative designing of project activities focusing on learning about tradition and promoting values can also enhance teachers' professional competencies. Defining and intensifying such activities through projects contributes to the preservation and nurturing of traditional values, thus fostering a sense of belonging and enriching the experiential learning of preschool-aged children.

In that context, the respondents identified several projects whose activities, implemented within planned learning situations, were aimed at promoting traditional values. These included projects such as: "Tradition in everyday life", "Pots and pans of my region", "Games then and now", "When I climb a pumpkin", "Wedding celebration", "Serbia", "Hope for centuries to come", "Customs in our society", "Music which connects us", "My town then and now", "What can my grandma make?", "Each shoe leaves a trace", "What can we make out of wool?", "Children in the world of music", "Musical instruments", "Let's sing and dance", "The *kolo* line spins", "The tailor", "No tools no craft", "My great-grandmother's handicraft", "The time machine", "Customs in my community", and others.

The respondents were also asked to provide a brief description of a project activity aimed at nurturing traditional values. Among the activities described, we have selected the following examples, grouped into categories:

- **Introducing children to traditional attire:** "We represented traditional attire from the Srem and Banat regions and compared it with modern-day costumes. We also learned two *kolo* dances from the Srem region: *Seljančica* and *Igra kolo*"; "The children dressed in traditional attire and sang the song *Lepa Kata*"; "Since our group includes children of Roma nationality who identify as Romanian or German, we organized a workshop with their parents. During this session, with pleasant music in the background, we showed a slides presentation of traditional attire and customs, both religious and secular. We also invited a

choreographer from our local artistic society, who taught us the basic steps of traditional *kolo* dances from these regions. The project concluded with a dance and game involving the parents, creating a very pleasant and relaxed atmosphere.”; “The song *Natalijina ramonda* inspired us to research Serbia from the time of queen Natalija, including the attire and customs of that era...”; “We visited the Cultural-artistic society and observed various folk costumes”; “We made a folk costume using old fabric”;

- **Implementation of traditional games:** “The traditional game *Trčim, trčim oko kruga* helped introduce children to the concept of a circle and circular formations”, “We played the game *Kolariću Paniću*”; “We learned traditional games *Ja posejah lan* and *Ja posejah lubenice*”; “Playing with elastics, playing with mud, playing with corn husks, workshop with hay and mud, introducing children to how balls used to be made”, “During the Children’s week, while learning about the “children of the world”, I talked to the children about the *kolo* dance and we played the game *Ja posejah lubenice*”, “In the *Magic Castle* project, we introduced children to the customs and costumes worn during the Nemanjić era through the singing game *Na kamen sela Anđelka*”, “Movement game *Kolariću Paniću*”; “We learned and played traditional games *Ja posejah lan* and *Ja posejah lubenice*”;
- **Introducing children to old, traditional objects:** “We collected and brought old objects (an old coffee grinder, a scale, a mortar, a spindle, etc.) to the kindergarten for children to explore”; “Parents brought traditional tools, clothes, and artworks to the kindergarten, allowing children to examine them. Later, we compared these objects with modern items and discussed their potential functions in contemporary life”; “We visited the Cultural-artistic society where we viewed old tools and discussed past and present customs”; “We researched with the children who a cobbler is and what he does, we drew a plan of a cobbler’s workshop, built a model workshop, and visited the *Cipelići* cobbler’s workshop”; “We made various traditional objects from clay with the children”; “We wove a carpet using the mosaic method, braiding large strips cut from poster board, which ultimately covered and decorated half of the wall in our room”; “We created a tapestry by threading wool strings through a large frame using a guiding string.”;
- **Introducing children to traditional musical instruments:** “We introduced children to musical instruments (bag pipes, pipes, double flutes, *gusle*, kaval, *tapan* drum, *semantron*, tambourine)”; “We introduced children to traditional crafts and

invited a choreographer, a bagpipes player, and a musician skilled in various traditional instruments to visit us”; “We engaged the children in playing the snare drum”;

- **Introducing children to traditional cuisine:** “We travelled around the world and learned about traditional dishes, other cultures...”; “We discussed with the children the process of pickling vegetables, and together, we made pickled vegetables. After storing the jars, we waited for three weeks before trying our salad”; “We cooked and baked traditional dishes”;
- **Celebrating religious holidays:** “During Easter celebrations, we discussed Easter customs, and together with the children, dyed boiled eggs in the kindergarten”; “We introduced children to the customs of celebrating *slava* (patron saint’s day) and compared them to the modern-day patron saint’s day celebrations”; “Visit to a church”; “On the day of the kindergarten’s *slava*, the children attended and participated in the breaking of the *slavski kolač* (traditional Serbian cake) with the parish priest”;
- **Introducing children to customs:** “We took the children to visit the registrar’s office and learn about wedding customs”; “In an improvised street scene, a child banged on a pot with a wooden spoon, calling other children to come out and jump over a ceremonial bonfire called *Lazarica*. An improvised bonfire was set up, and popcorn was baked on a grill...”.

From the given descriptions, it can be concluded that the preschool teachers utilize both practical everyday situations in the kindergarten and planned project activities (learning situations) to nurture traditional values. According to their responses, the most dominant activities focus on teaching traditional folk costumes, traditional games and introducing children to old objects. Activities related to introducing children to traditional musical instruments, traditional cuisine, celebrating religious holidays, and teaching certain customs follow closely behind.

Vukićević, Golubović, Ilić and Stanojević (2016) found in their research that preschool teachers in our kindergartens most frequently select folk songs and dances from the folk tradition, while other elements, such as old objects, crafts, and folk customs, are significantly less represented. The least frequent activities are those focused on learning about the past lives of our people, folk instruments, and folk costumes. Earlier studies (Vukomanović & Komnenić, 1981; Ilić & Janković, 1986) also emphasized that traditional games should be an integral part of music activities in the kindergarten. These games need to be versatile, well-designed, organized, guided and supervised to ensure that children’s musical and overall development progresses appropriately. When selecting traditional music games, preschool teachers should provide

guidelines based on the children's musical abilities, interests and their motor skills. It is particularly important to align the games with the children's interests, as this increases their engagement and allows them to pass on cultural heritage to younger generations. Traditional games are especially effective for developing children's social skills. Compared to modern games, traditional games help children enhance cooperation skills and learn how to follow rules. This is further supported by research conducted by Marlina and Pransiska (2007) in kindergartens abroad. Games foster a sense of unity and mutual understanding in smaller kindergarten groups, promoting socialization, cooperation, and democratic values, while simultaneously building social skills and improving problem-solving abilities (Marušić, 2022, p. 117). By combining music, movement, and words, a syncretic community is formed, facilitating the successful transmission of traditions and customs to younger generations. Because of the influences of globalization, traditional culture and values are becoming less prevalent, as younger generations increasingly adopt role models from popular culture.

Due to various historical circumstances, our people have faced significant challenges in preserving their traditions, leading to the disappearance or repression of numerous customs. In contrast to more conservative areas that strongly uphold their customs and beliefs, there are noticeable efforts to revive traditional rituals and values in modern times. The preservation of folk music, art, and its transmission to younger generations is a collective responsibility, as this is the key to preserving and promoting identity and tradition (Stratulat & Stratulat, 2020, p. 16). Therefore, music plays a crucial role in socio-cultural life, creative expression and the preservation of heritage (Jeremić & Milenović, 2020, p. 442).

In conclusion, it is essential to create conditions where children can learn uninterrupted, transform their knowledge, and develop a positive attitude toward the traditional values of their own and other cultures. Researching and preserving cultural heritage, while promoting values holds great potential for encouraging children's self-awareness, and the development of personal identity within the cultural context of their community. For this reason, it is important to introduce children, as early as preschool age, to the significance and beauty of folk customs, enabling them to appreciate their cultural heritage and protect it from oblivion. Given the vast potential of modern technologies in education, future research should explore how traditional values can be nurtured in contemporary settings, particularly through the use of applications, software, and digital tools, especially for music-related content.

References

- Birch, J. (2018). Museum spaces and experiences for children – ambiguity and uncertainty in defining the space, the child and the experience. *Children's Geographies*, 16 (5), 516–528.
- Ilić, B. i Janković, R. (1986). *Hajd' u kolo: narodne igre Srbije*. Beograd: Nova prosveta.
- Inglehart, R. (2008). Changing values among western publics from 1970 to 2006. *West European Politics*, 31 (1-2), 130–146.
- Jeremić, B. i Milenović, Ž. (2020). Društveni kontekst nastave muzičke kulture u funkciji negovanja tradicionalnog narodnog stvaralaštva Srba. *Baština*, 441–461.
- Jeremić, B., Markov, Z. i Nikolić, L. (2023). Tradicionalna muzika u vrtiću i razvoj socijalno-emocionalnih kompetencija dece predškolskog uzrasta. *Društvene i humanističke studije*, 2 (23), 541–556.
- Läänemets, U., Kalamees-Ruubel, K., Sepp, A. and Kiilu, K. (2019). Traditional Values in the Era of Technology and Innovation. *Society integration education, Proceedings of the International Scientific Conference*, 1, 320–330.
- Maljković, M., Vukobrat, A., Radaković, T. i Petrović, R. (2020). Stavovi vaspitača o primeni integrisanog pristupa u njihovom vaspitno-obrazovnom radu. *Integrirani pristup u radu sa predškolskom decom, učenicima i korisnicima u vrtićima, školama i u ustanovama socijalne zaštite*, 15–26.
- Maran, M. i Jovišić, M. (2017). Vaspitno-obrazovna uloga zavičajnih zbirki, lokalnih muzeja i galerija u radu sa decom predškolskog i školskog uzrasta. *23 okrugli sto o darovitima, Darovitost i kreativni pristup učenju*, 66–67.
- Marjanović, V. (2002). Tradicionalne dečje igre u Vojvodini od druge polovine do kraja veka (Međuetnički odnosi u tradicionalnim dečjim igrama Vojvodine). *Kodovi slovenskih kultura*, 7, 147–170.
- Marlina, S. and Pransiska, R. (2007). The Effectiveness of Traditional Games on the Development of Social Ability of Children in Kindergarten of Baiturridha Padang Pariaman. *Advances in Social Science, Education and Humanities Research (ASSEHR), International Conference of Early Childhood Education*, 169, 220–223.
- Marušić, A. i Jukić, T. (2022). Tradicijska igra u odgojno-obrazovnom procesu predškolske ustanove s ciljem očuvanja nematerijalne kulturne baštine. *Napredak*, 163 (1-2), 115–132.
- Milošević, B., Zorić, M., Ulić, J., Colić, V. i Matović, M. (2017). Integrirani pristup razvoju veština dece predškolskog uzrasta.

- Novi Sad: Visoka škola strukovnih studija za obrazovanje vaspitača.
- Pallant, J. (2009). SPSS: Priručnik za preživljavanje: postupni vodič kroz analizu podataka pomoću SPSS-a za Windows (verzija 15). Beograd: Mikro knjiga.
- Pravilnik o osnovama programa predškolskog vaspitanja i obrazovanja. (2018). Preuzeto 20. decembra 2019. sa: <https://sn.rs/yadvj>.
- Radosavljević, M. i Ružin Đurčok, Z. (2022). Tradicionalne muzičke igre i njihova funkcija u vaspitno-obrazovnom radu sa predškolskom decom. Savremeni izazovi u didaktici i obrazovanju, 51–54.
- Stratulat, M. i Stratulat, D. (2020). Predškolsko vaspitanje i očuvanje tradicije: 16–24. U Zbornik radova: Aleksandar Stojanović (ur). Međunarodna konferencija Savremeni izazovi u didaktici i obrazovanju. Vršac: Visoka škola strukovnih studija za vaspitače Mihailo Palov.
- Vukićević, N., Golubović Ilić, I. i Stanojević, V. (2016). Predškolsko vaspitanje u funkciji očuvanja narodne tradicije u savremenom društvu. Savremeno predškolsko vaspitanje i obrazovanje: Izazovi i dileme, 20, 167–181.
- Vukomanović, N. i Komnenić, O. (1981). Muzičke igre. Gornji Milanovac: Dečije novine.

ENHANCING ONLINE COMMUNICATION SKILLS IN EDUCATION: A REVIEW OF CURRENT DIGITAL CHALLENGES AND OPPORTUNITIES FOR TEACHERS AND STUDENTS

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Abstract: *This review article highlights the critical need to develop online communication skills among both students and teachers in the context of remote educational processes. The COVID-19 pandemic forced an abrupt transition to online teaching, requiring teachers and students alike to adapt their communication practices and enhance their digital competencies. For some educators, this shift posed significant challenges, as they were unprepared for the demands of online instruction. Additionally, students from underprivileged areas faced difficulties in participating effectively due to limited access to necessary technology. This paper aims to outline the key advantages and challenges of online communication in educational contexts, while emphasizing the importance of strengthening online communication skills for both educators and students in light of current digitalization trends in education. Developing these competencies will enable educators and students to navigate digital environments more effectively, fostering adaptability and resilience in an increasingly technology-driven educational landscape. I believe that fostering awareness and understanding of the need to develop online communication skills is essential—not only due to the continuous changes in the educational system and rapid technological advancement but also to ensure professional readiness for future challenges that may restrict face-to-face interaction with students. Online communication is crucial for both teachers and students, serving not only as an efficient means of information exchange but also as a viable alternative to traditional education.*

Key words: *online; skills; communication.*

Introduction

The Development of Online Communication Skills in Modern Education

The transformations brought about by digitalization have fundamentally altered education, emphasizing the necessity of online communication skills for both teachers and students. The COVID-19 pandemic accelerated this transition, and the shift to distance education has opened up new opportunities and challenges. Enhancing digital competencies is essential to ensuring the success of the educational process in a digital environment, preparing students and teachers to meet the demands of the future. Moreover, the development of these skills can contribute to a more equitable, accessible, and personalized education for all categories of students, providing them with a solid foundation for their future careers. This paper explores both the benefits and challenges of digitalization, highlighting practical solutions and the long-term impact on students and teachers.

The Context of Change: The Pandemic and the Transition to Online Education

The pandemic forced a rapid shift from traditional teaching to online education, compelling the entire educational system to adapt to new technological demands. Typically, such a transition would have taken years, implemented gradually to allow teachers to adjust. However, during the pandemic, schools and universities had to devise quick solutions to ensure the continuity of the learning process. Teachers had to restructure their lessons and adapt their methods to suit digital learning platforms. This rapid adjustment posed challenges for many educators who lacked the necessary technical skills, affecting the quality of education, particularly in the early stages of the pandemic.

These rapid changes may lead to reduced social engagement and well-being, essential aspects for delivering effective and balanced education (Kraut et al., 2002). The situation underscored the need for an adaptable and accessible education system through the use of technology. The current generation of students, often referred to as “digital natives,” adapts more easily to technology; however, inadequate infrastructure can negate this advantage (Boyd, 2014, p. 179). Therefore, teachers and educational systems must keep pace with technological demands to mitigate disparities in access to education.

The pandemic has thus highlighted various shortcomings in educational systems worldwide, ranging from a lack of digital infrastructure to insufficient technological competencies among teachers. These are valuable lessons for the future, signaling the need for modernizing education through the continuous integration of technology and digital skills in the training processes of both teachers and students.

(Clarification: The concept of “digital natives,” supported by Boyd (2014, p. 179), describes young individuals who are adept at using

technology but do not inherently possess educational competencies in its use.)

Challenges Faced by Teachers and Students

The sudden transition to online education brought about numerous challenges. Teachers had to familiarize themselves with digital platforms, create adapted teaching materials, and maintain student engagement, often in a virtual environment that was entirely new to them. On the other hand, students, particularly those from disadvantaged backgrounds, encountered significant difficulties in accessing technology. The lack of appropriate devices, high-speed internet, and even a quiet and dedicated workspace posed substantial barriers that affected their learning experiences.

Ensuring equitable access to digital resources is essential to prevent educational exclusion and to provide all students with equal opportunities (Hinduja & Patchin, 2018). Research indicates that 32% of students reported that the lack of access to high-quality internet significantly impacted their academic performance (Hinduja & Patchin, 2018, p. 3).

In a broader context, the digitalization of education risks exacerbating existing inequalities if not accompanied by clear inclusion policies (Selwyn, 2014, p. 76). Teachers and students in rural areas, in particular, face obstacles that may limit their access to quality digital education.

Another critical aspect is the lack of psychological preparedness for the digital environment, affecting both teachers and students. Online learning can introduce additional stress and anxiety, especially for those unaccustomed to digital interaction. Furthermore, this environment demands greater self-management discipline than traditional classroom settings, a skill not all students possess. As a result, the negative impact of insufficient digital resources and skills extends beyond academics, affecting emotional well-being as well.

The Benefits of Online Communication in Education

Despite the challenges encountered, online education offers notable advantages that, if effectively leveraged, can contribute to high-quality learning and the personal development of students. Online communication provides flexibility in learning—students can access educational materials at any time, allowing them to revisit information as needed. This is particularly valuable for students who struggle with the traditional pace of instruction. The flexibility afforded by technology enables students to develop their own study methods and deepen their understanding of subjects.

According to Miller (2011), the digital culture allows students to access diverse information, fostering learning tailored to their individual needs

(Miller, 2011, p. 45). This flexibility is especially beneficial for students who have traditionally faced challenges within rigid, standardized learning environments. Baym (2004) notes that online spaces provide opportunities for developing authentic relationships and effective communication, even in the absence of physical presence (Baym, 2004, p. 129). Additionally, digital interactions can reduce social anxiety and provide a safe space for students. Technology enables teachers to personalize lessons and offer individualized support. Technology-driven teaching methods can encourage active participation, helping students become more engaged in the educational process (Anderson & Garrison, 2003, p. 62).

The Need for Developing Digital Competencies

In the context of modern education, digital competencies are more than just a technical requirement—they form the foundation of effective and relevant education in contemporary society. In the digital era, developing these competencies is essential for both teachers and students to ensure adaptability and long-term success in the educational process. Teachers are the primary agents for integrating technology into education, and their level of digital preparedness directly influences the quality of online learning.

It is not enough for teachers to merely know how to use platforms or technological tools; they must also understand the impact of technology on the educational process, interactions, and teacher-student relationships. Authentic relationships in the digital environment can only develop if users—in this case, teachers—are aware of the dynamics and limitations of technology (Baym, 2004, p. 129). For instance, a teacher using technologies such as online learning platforms or interactive applications must know how to create an inclusive and collaborative digital environment.

Developing digital competencies is therefore a process of continuous learning for teachers. To be effective, teachers must enhance not only their technical skills but also their ability to design and implement pedagogical strategies adapted to the digital environment (Anderson & Garrison, 2003, p. 62). For example, using artificial intelligence or augmented reality in education can create innovative opportunities but requires a deep understanding of how these tools can be integrated into lessons.

Students as Primary Users of Technology in the Learning Process

Students, as primary users of technology in education, must be trained to utilize it beyond recreational purposes. Digital literacy is crucial for developing critical thinking, analytical, and information management

skills, all of which are essential in the information era (Bawden, 2008, p. 24).

Developing digital competencies enables students to:

Access and evaluate information from diverse sources.

Collaborate effectively with peers through digital platforms.

Create digital content that meets academic and professional requirements.

In his article, Marc Prensky states that "today's students think and process information fundamentally differently than their predecessors." He introduces the term "digital natives," arguing that these individuals are fluent in the digital language of computers, video games, and the internet. However, while students from the "digital natives" generation have a natural affinity for technology, this predisposition does not automatically translate into educational competencies. Teachers must provide students with a structured framework to develop these skills and apply them productively (Boyd, 2014, p. 179).

Barriers to Developing Digital Competencies

While the benefits of digital competency are evident, several factors hinder its development:

Unequal Access to Resources

Students and teachers from disadvantaged backgrounds often face a lack of necessary technological infrastructure, which limits learning opportunities. Addressing digital disparities is critical to avoiding educational exclusion (Hinduja & Patchin, 2018, p. 3).

Resistance to Change

Both teachers and students may encounter difficulties adopting new technologies due to unfamiliarity or concerns about their effectiveness.

Insufficient Teacher Training

Many teachers lack access to adequate training programs that would enable them to effectively integrate technology into the educational process. Professional development in this area must become a priority for educational policies (Selwyn, 2014, p. 76).

By addressing these barriers, educational systems can empower both students and teachers to leverage technology for a more inclusive and effective learning experience.

Modern Technology as a Transformational Tool in Education

Modern technology offers numerous tools that can transform education. For instance, learning platforms such as Moodle and Google Classroom facilitate access to resources, while applications like Kahoot! and Mentimeter encourage active student participation through interactive methods. Additionally, the use of virtual reality (VR) and augmented reality (AR) in teaching allows students to explore complex subjects in engaging and practical ways. Examples include applications like

Kahoot! for interactivity or Google Classroom for fostering collaboration.

Siemens (2005) introduces the connectivism theory, which argues that modern learning occurs in dynamic networks of information, where students can contribute, share, and access knowledge (Siemens, 2005, p. 7). This approach is exemplified by the collaborative use of online platforms, promoting learning based on interaction and information exchange.

In the long term, digital literacy becomes a competitive advantage for both students and teachers. Technology-mediated interactions can overcome traditional barriers, creating unique opportunities for collaboration and learning (Walther, 1996, p. 27). This is crucial in a globalized world where digital skills are a fundamental criterion for professional success.

The Long-Term Impact on Education

The development of digital communication skills has positive long-term effects on students' and teachers' learning and adaptability. Online interactions can transcend spatial and temporal barriers, offering opportunities to integrate education in a more accessible and continuous manner (Walther, 1996, p. 27). Digital competencies enable students to become more independent learners and prepare for a dynamic future where technological skills will be essential in nearly every field. Teachers, by acquiring advanced skills, can deliver innovative and interactive lessons, ensuring a high standard of teaching.

Conclusions and Recommendations

In conclusion, digital education represents the future of both education and society. Developing digital competencies is a continuous process for both teachers and students. In a world where technology is pervasive, its effective integration into education will ensure successful learning and contribute to building a society prepared for future challenges.

Digital transformation is not merely about adopting new technological tools but also about reshaping educational paradigms, creating innovative learning methods, and adapting them to the realities of an ever-changing world. Continuous training and adaptability among teachers, combined with the development of students' digital skills, will form the foundation of an educational system that addresses present needs while anticipating future challenges.

To improve digital education, the active involvement of all stakeholders is essential, and technological resources must be distributed equitably. Moreover, the digitalization process must be accompanied by ongoing reflection on the ethics and responsibilities associated with the use of educational technologies. Issues such as data protection, cybersecurity,

and combating negative phenomena like online bullying must be prioritized in the development of digital education.

Thus, digital education is not only a means to enhance learning but also an opportunity to build a more equitable and accessible educational environment for all. Technology can help overcome geographical and social barriers, creating opportunities for students from disadvantaged backgrounds. However, achieving this requires concerted efforts from authorities, schools, and the educational community.

Ultimately, the success of digital education depends on the involvement of all stakeholders: teachers, students, authorities, and families. Only through active collaboration and an integrated approach to technology can we build an educational future that meets the needs of an increasingly interconnected and complex world.

References

- Anderson, T., & Garrison, D. R. (2003). *E-Learning in the 21st Century: A Framework for Research and Practice*. Routledge.
- Baym, N. K. (2010). *Personal connections in the digital age*. Polity.
- Bawden, D. (2008). Origins and concepts of digital literacy. C. Lankshear & M. Knobel (Eds.), *Digital Literacies: Concepts, Policies and Practices*, (pp. 17-32). Peter Lang.
- Boyd, D. (2014). *It's complicated: The social lives of networked teens*. Yale University Press. <https://doi.org/10.12987/9780300166439>
- Hinduja, S., & Patchin, J. W. (2018). *Cyberbullying fact sheet*. Cyberbullying Research Center. <http://www.cyberbullying.org/facts/>
- Kraut, R. E., Kiesler, S., Boneva, B., Cummings, J., Helgeson, V., & Crawford, A. (2002). Internet paradox revisited. *Journal of Social Issues*, 58(1), 49-74. <https://doi.org/10.1111/1540-4560.00248>
- Miller, V. (2011). *Understanding Digital Culture*. Sage Publications.
- Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon*, 9(5), 1–6.
- Selwyn, N. (2014). *Digital technology and the contemporary university: Degrees of digitization*. Routledge. <https://doi.org/10.4324/9781315768656>
- Siemens, G. (2005). *Connectivism: A learning theory for the digital age*. https://www.itdl.org/journal/jan_05/article01.htm
- Turkle, S. (2015). *Reclaiming conversation: The power of talk in a digital age*. Penguin Press.
- Walther, J. B. (1996). Computer-mediated communication: Impersonal, interpersonal, and hyperpersonal interaction. *Communication Research*, 23(1), 3-43. <https://doi.org/10.1177/009365096023001001>.

INVESTIGATION OF INTERNET ADDICTION AND INTERPERSONAL RELATIONSHIP AMONG UNDERGRADUATE STUDENTS

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Abstract: *The study investigated internet addiction and interpersonal relationship among undergraduates' students in Nigeria. Four research questions guided the study. The study employed descriptive research design. The population consisted of undergraduate students of Osun State university. Stratified and simple random sampling was used to select 200 respondents across nine (9) departments in two colleges. An adapted questionnaire from Internet Addiction Test (IAT) and Interpersonal Solidarity Scale (ISS) was employed for the study. The results of the findings indicated that internet addiction is moderate among undergraduates. The result also showed age, level, course and religion do not significantly influence internet addiction of undergraduates. However, gender significantly influences internet addiction. The result also indicated that personal relations, interpersonal relationship, means of surfing the internet and place of residence does not significantly predict students' internet addiction. Finally, the result concluded that, the more undergraduates become addicted to the internet, the lesser the level of interpersonal relationship. It is thus recommended that, internet addiction awareness should be created among undergraduates in Osun State University through seminars, workshops among others.*

Key words: *internet addiction; computers; interpersonal relationship; undergraduates.*

Introduction

Currently, Nigerian university students have shown a strong interest in the intangible world of the internet (Internet Live Stats, 2016, Tejumaiye, et. al, 2018, Ubogu & Chukwusa, 2022). The internet is an expansive computer network that links together millions of computers, establishing it as the biggest network of its type on a worldwide scale. The internet technology enables the connecting of several computers, enabling the transport of data across servers (Aririguzoh, et. al, 2018). In the early days, most people used the internet primarily for information retrieval; while the modern internet is a versatile tool that includes a wide variety of information and provides new ways to access, interact with, and connect persons and material. Ogbomo & Ivwighrehweta, 2016, Adorjan, et. al, 2021, Sanchez-Fernandez, et. al, 2023, Nađsombat & Tomičić 2023 asserted that university students utilize the internet to share information and engage in social media communication, and have compulsive behaviors towards its use.

The shift from face-to-face contacts to online relationships seems to be a result of the advantages linked to internet use, even though, eventually resulting in the emergence of internet addiction (Kuss & Pontes 2018; Joorabchi, et al, 2022). The term "addiction" is derived from the Latin word "addictus", which refers to an individual's excessive dedication to a certain activity or drug, leading to a reduced ability to make independent decisions or operate independently (Rosenthal, & Faris, 2019, Heilig, et. al., 2021). Traditionally, addiction has been described as the use of psychoactive chemicals that may temporarily alter the chemical balance of the brain by crossing the blood-brain barrier. This category includes alcohol, tobacco, and certain medications (Ofole & Babatunde, 2015, Pimentel, et al., 2020).

Internet addiction refers to an uncontrollable need to participate in online activities to the point that it interrupts normal daily routines and may negatively affect personal connections with loved ones. Internet addiction is defined as the inability of a person to control or manage their online use. The disorder has been described as a complex syndrome that manifests with cognitive and behavioral symptoms, as recorded in several sources (Lin, et. al. 2014, Okwaraji, et. al. 2015). This manifest in various forms and dimensions such as, teenagers consistently isolating themselves in their rooms or avoid in-person interactions in order to spend more time on the internet, (Aririguzoh, et. al, 2018, Mengin, et al. 2020, Turner, et al. 2024). Needless to stress that problem of internet addiction among young people necessitates substantial public attention. In the last ten years, there has been a notable increase and spread of new forms of internet-based information and communication technologies, such as social media, personal computers, mobile or cellular phones, and other similar devices (Ballarotto, et. al, 2018, Haleem, et al., 2022). The

demographic group of teenagers and young adults is the biggest group of people who utilize the several technologies (Ballarotto, et. al, 2018, Abi-Jaoude, et al, 2020). The emergence of information technology, namely the extensive use of internet-based social media platforms like Whatsapp, Facebook, WeChat, and Instagram, has greatly altered the realm of interpersonal communication in recent years (Smith & Anderson, 2018, Stone & Wang, 2018, Hou, et. al. 2019).

According to Jhangiani & Tarry, 2022, relationship refers to a dynamic between two persons where their actions depend on each other. This means that if one person changes their behavior, it is anticipated to cause a corresponding change in the behavior of the other person. Interpersonal connections may be described as the formation of a link or affiliation between two or more persons, taking into account certain elements. The length of a relationship may vary greatly, ranging from a short amount of time to a whole lifetime, depending on a multitude of circumstances. Humans are inherently social organisms and need social connection in order to flourish. Developing healthy interpersonal interactions is crucial for enhancing both physical and emotional well-being. It is crucial for people to be aware of how their ideas, words, behavior, and actions affect their relationships.

Interpersonal interactions are the essential elements of all human communities. Verbal or symbolic communication enables the formation of new connections. Insufficient, below-average, or unsuitable communication may result in the decline of relationships. The quality of social relationships has a considerable impact on the quality of societies, since the understanding of the world is molded by our capacity to interact successfully with others who are nearby. In settings characterized by liberty and transparency, people are inclined to participate in unrestricted communication. Therefore, it seems that those with a propensity for addiction are attracted to the internet because it has the ability to relieve the pressures of social situations (Neverkovich, et. al., 2018, Chemnad, et al, 2023). An analysis has shown that Social Networking Sites (SNSs) have an impact on the interpersonal connections of teenagers, by improving their interactions with each other, thereby promoting both bridging and bonding social capital. Adolescents show a strong preference for using SNSs and cannot imagine a world without them, as they have become an essential part of their everyday lives. The study suggests that SNSs have both promoted the strengthening of ties among close teenage friends and impeded the formation of interpersonal connections with acquaintances who are not part of their inner circle. It indicates that teenagers have had limitations in participating in face-to-face contact, especially with members of the opposing sex, which has hindered their capacity to express themselves (Liu, et al, 2023).

While the internet has been discovered to possess a multitude of advantageous features, such as greater global reach, improved virtual connections, access to limitless information among others. The importance of social ties made by undergraduate students on their physical, social, psychological, and behavioral well-being in both the short and long term is generally recognized. The exploration of internet addiction among undergraduate students and its effects on their personal, social, and family interactions has been lacking, especially in this specific area. The present study endeavours to examine the impact of internet addiction on the interpersonal relationships of undergraduate students enrolled at Osun State University, located in Osogbo, Nigeria.

Research question formulations

Prevalence of internet addiction

Prevalence refers to the proportion of a population exhibiting a specific characteristic within a defined period. Okwaraji et al. (2015) assessed 510 Nigerian university students for internet addiction and depression, revealing that 29.0% had mild internet addiction, 20.0% moderate addiction, and 10.2% had severe addiction. Similarly, Ogbomo and Ivwighreghweta (2016) found significant internet reliance among undergraduates, with 91.2% accessing it via mobile phones. Akin (2017) reported that 0.61% of adolescents exhibited compulsive internet use, and 39% spent 5-6 hours online daily.

Omoyemiju and Popoola (2021) noted that 14% of students showed severe internet addiction. Further, Kokka et al. (2021) and Wang et al. (2023) found that 96.8% of young people used the internet daily. Studies by Ibrahim et al. (2022), Mahama et al. (2024), and Mohamed et al. (2024) reported a 13.1% prevalence rate of internet addiction, with 73.1% classified as over-users, 29.4% demonstrating high curiosity, and 35.6% with low addiction levels. Amano et al. (2023) found a 53.6% prevalence among participants. Ogboghodo et al. (2024) surveyed 499 respondents, 78.6% of whom were addicted, with 90.8% showing mild, 8.9% moderate, and 0.3% severe addiction.

This research aims to address the question below:

RQ 1: What is the level of prevalence of internet addiction among undergraduates?

Influencing characteristics of internet addiction

Estimating internet addiction requires consideration of influencing factors that may moderate addiction levels among students. Okwaraji et al. (2015) identified significant gender differences in internet addiction and depression. Similarly, Omoyemiju and Popoola (2021) and Ogboghodo et al. (2024) confirmed a significant association between male gender and internet addiction. Other studies (Agbaria & Bdier,

2021; Arya et al., 2018; Xin et al., 2018) reported higher addiction levels among males compared to females. Conversely, Ogbomo and Ivwighrehweta (2016) and Şan et al. (2024) found no notable gender differences in addiction levels.

Regarding age, Arya et al. (2018) and Agbaria and Bdier (2021) observed higher addiction rates among younger students compared to older ones. Ogboghodo et al. (2024) highlighted significant differences in addiction by academic level, with lower-year students showing increased values. On religion, Agbaria and Bdier (2021) found no significant differences in internet addiction. However, research addressing the relationship between addiction and students' courses of study remains limited.

Given these findings and gaps in the literature, this research seeks to explore how various factors influence internet addiction and addresses the research question below:

RQ 2: What influence do the students' demographic characteristics (gender, age, academic level, course of study and religion) have on the internet addiction of students?

Predictive measures of internet addiction

Akanbi et al. (2018) highlighted that excessive internet use can lead to psychosocial consequences, such as forming new online relationships, higher financial costs, and spending more time online at the expense of social activities. Additionally, Hao et al. (2022) found a positive correlation between internet addiction (IA) and challenges in interpersonal relationships, including difficulties with conversation, making friends, social interactions, and heterosexual communication. Nwufo et al. (2023) observed that poor family functioning was significantly linked to greater internet addiction ($\beta = .13$). These findings underscore the prevalence and risk factors of IA among adolescents in sub-Saharan Africa.

Yu and Shek (2018) suggested that poor personal well-being in adolescents often results from, rather than causes, internet addiction. Omoyemiju and Popoola (2021) noted higher IA rates among students living on campus, while Agbaria and Bdier (2021) found no significant differences in addiction based on residence. However, research on the means of internet access remains limited.

These findings emphasize the multifaceted nature of IA, its impact on personal and social well-being, and the gaps in understanding related variables. This study aims to explore these dimensions further, addressing the research question below:

RQ 3: Can the internet addiction of students correctly be predicted by measures of personal relationship, social relationship, family

relationship, and interpersonal relationship, place of residence and means of surfing the internet?

Method

The research design utilized in this study was a descriptive survey. This entailed conducting a study on a population or set of objects through the acquisition and examination of data from a limited number of representatives (i.e., a sample) of the entire population. The study was conducted on a population consisting of undergraduate students from Osun State University in Osogbo, Nigeria. The researchers employed a stratified random sampling technique to choose participants from nine distinct departments within the colleges. This method was employed to identify sub-populations and subsequently incorporate them into the sample. Subsequently, the utilisation of the simple random sampling method was implemented in order to select a sample size of 200 participants for the purposes of this investigation. The utilisation of random sampling was implemented due to its capacity to allow for the inclusion of each individual in the sample.

Data collection was conducted using self-administered standardized questionnaires. The study used a quantitative methodology to collect data, using a single research tool that included standardized measurements. The research was titled "Internet Use and Interpersonal Relationship Questionnaire (IUIRQ). The IUIRQ is a survey consisting of 42 questions, which are categorized into three components. Section A gathered data on the respondents' general information. The gathered data includes demographic factors such as gender, level of education, and age. Section B consisted of 20 questions that evaluated the extent of internet addiction. The assessment of online addiction was carried out using the online Addiction Test (Young, 1998).

The Internet Addiction Test (IAT) was created by (Young, 1998) as a reliable and accurate instrument for evaluating addictive behaviors of Internet use. There are a total of twenty individual components stated above. The Implicit Association Test (IAT) has shown robust psychometric features, affirming its reliability and validity as an assessment tool. Consequently, it has been used in subsequent research related to addiction (Young, 1998). The tool evaluates people' level of involvement with the computer and classifies addictive inclinations into mild, moderate, and severe degrees of addiction. The scale used for measuring is a six-point Likert scale, with values ranging from 0 (showing non-applicability) to 5 (representing a high frequency of occurrence). The numbers 1, 2, 3, and 4 reflect different degrees of frequency between the two extremes. Section C comprised 15 items that assessed the interpersonal relationships of the participants. The measurement process involved the utilisation of representative items that

were extracted from the Interpersonal Solidarity Scale (ISS), which was originally developed by Wheelless, 1976.

The Interpersonal Solidarity Scale is a tool utilised to gauge the degree of emotional proximity that arises among individuals due to shared sentiments, similarities, and intimate behaviours. Theoretically, individuals who possess strong feelings of solidarity are also likely to exhibit trust, fondness, and self-disclosure towards one another. A total of 15 items were extracted from the initial scale comprising 30 items. The extracted items encompassed personal, social, and familial relationships, all of which assessed the interpersonal relationships of the participants. The survey instrument employed a response format based on the Likert scale, consisting of four points ranging from strongly disagree to strongly agree. The scale comprises various items, such as experiencing difficulty in relying on others and finding it effortless to establish emotional intimacy with others.

The instrument's reliability coefficient was assessed through the utilisation of Cronbach Alpha, resulting in a coefficient value of 0.85. The data collected in this study were processed using the Statistical Package for Social Sciences (SPSS) Version 25. Both univariate and multivariate statistical analysis tools were employed, including frequency counts, percentages, binary logistic regression analysis, and chi square at a significance level of 0.01.

Results

Research question 1: what is the level of prevalence of internet addiction among undergraduates?

To answer this research question, the scores of the students on internet addiction were pooled together and categorised. To categorise the students' scores, the descriptive statistics of the scores were obtained. The minimum score was 24, maximum score was 99, the mean was 60.90 and standard deviation was 16.52. The scores that ranged between the minimum obtained score and the mean score minus SD (24 - 53) represented "Mild Addiction"; scores that ranges from above the mean minus SD and the mean plus SD (54 - 86) stand for "Moderate Addiction" and scores that ranged from mean plus SD and the maximum score (87 - 99) represent "Severe Addiction". The results are presented in Table 1.

Levels	Frequency	Percent
Mild	31	15.5
Moderate	140	70.0
Severe	29	14.5

Table 1: Level of internet addiction

Table 1 showed the level of internet addiction of undergraduate students. It revealed that most of the respondents (70%) demonstrated a moderate level of internet addiction; followed by 15.5% of the respondents that demonstrated a mild level of internet addiction and 14.5% exhibit a severe level.

Research question 2: what influence do the students' demographic characteristics (gender, age, academic level, course of study and religion) have on the internet addiction of students?

To answer this research question, the influence of respondents' demographic characteristics, in terms of their gender, age, academic level, course of study and religion on internet addiction were examined using the chi-square statistics test of association. The results are presented in Table 2.

	Level of internet addiction			Total	χ^2	P
	Mild	Moderate	Severe			
Sex						
Male	6 (8.22)	47	20 (27.40)	73	17.6	0.0
Female	25	93	9 (7.09)	127		
Age						
15-19	1 (5.0)	16 (80.0)	3 (15)	20 (10.0)	7.02	0.3
20-24	18	53	11 (13.41)	82 (41.0)		

25-29	1(5.0)	17 (85.0)	2 (10.0)	20 (10.0)		
	y					
	e					
	a					
	r					
	s					
30-34	11	54	13	78 (39.0)		
	y					
	e					
	a					
	r					
	s					
Course						
ECO	5 (12.5)	27 (67.5)	8 (20.0)	40 (20.0)		
EDM	4 (14.29)	16	8 (28.57)	28 (14.0)		
		(5				
		7.				
		1				
		4)				
ENG	8 (13.79)	39	11 (18.97)	58 (29.0)		
		(6				
		7.				
		2			16.0	0.0
		4)				
GDC	5 (21.74)	18	0	23(11.5)		
		(7				
		8.				
		2				
		6)				
POL	7 (15.90)	35	2 (4.55)	44 (22.0)		
		(7				
		9.				
		5				
		5)				
BOE	2 (28.57)	5 (71.43)	0	7 (3.5)		
Level				151		
100	22	106		(
	(1	(7		7		
	4.	0.		5.	0.57	0.7
	5	2		5		
	7)	0)	23 (15.23))		
200	9 (18.27)	34	6 (12.24)	49 (24.5)		
		(6				
		9.				

Religion		n		39			
Christianity	38						
Islam	102						
		8 (15.69)	5 (9.80)	51 (25.5)		1.24	0.5
		23	24	149			
		(15.69)	(9.80)	(25.5)			
		5.44	6.11	7.44			
		4.44	11.11	5.55			
		4.44	5.55	5.55			

Table 2: Influence of students’ demographics on internet addiction

Legend

ECO – Economics Education; EDM – Educational Management; ENG – English Education

GDC – Guidance and Counselling; POL – Political Science Education; BOE – Biology Education.

The results in Table 2 revealed that only the sex of the respondents significantly influence internet addiction of undergraduate students. It showed that age, course, level and religion do not significantly influence the internet addiction of undergraduate students.

Research question 3: Can the internet addiction of students (“Not addicted” or “addicted”) be correctly predicted by measures of personal relationship, social relationship, family relationship, and interpersonal relationship, place of residence and means of surfing the internet?

To answer this research question, the dependent and independent variables were subjected to binary logistic regression analysis which was entered at once, but each is evaluated and assessed in relationship to the dependent variable. The results are presented in the table below.

A total of 200 cases were analyzed and the full model significantly predicted that students will be addicted to the internet (Omnibus Chi-square = 213.134, df = 6; p<0.01) and the associated significance level shows that the model significantly predicts group membership. The model also accounts for between 65.6% and 87.5% of the variance using Cox & Snell R square and Nagelkerke R square; and correctly predicts the outcome for 95.2% of the cases (-2 log likelihood = 63.625). However, only 52.5% not addicted to the internet was correctly predicted. Overall, 95.0% of predictions were accurate.

	B	S.E.	Wald	D	Sig	95% C.I.for EXP (B)	
						Low	Upper
Step 1 ^a Personal	-.013	.266	.003	1	.96	.987	.586 1.663
Social	.759	.157	23.41	1	.00	2.136	1.57 2.904
Family	1.117	.229	23.70	1	.00	3.056	1.94 4.791
Residence	.029	1.15	.001	1	.98	1.029	.107 9.915
Interperso	.012	.146	.007	1	.93	1.012	.760 1.349
Surfing	.008	.281	.001	1	.97	1.008	.580 1.749
means							
Constant	-33.634	6.92	23.59	1	.00	.000	

a. Variable(s) entered on step 1: Personal, Social, Family, Residence, interpersonal, surfing means

Table 3: Variables in the Equation

Table 3 shows the variables in the equation, the column of Exp(B) gives the value of odd ratios.

This gives an indication of the change in the predicted odds of addicted or not addicted for each change in the predictor variable. Values less than 1 indicate that an increase in the predictor variable is associated with a decrease in the odds of the event. The significant variables in the model are: social relations and family relations. Thus, for every unit increase in social relations, the odds of the students to be addicted to the internet will significantly increase by 2.136 with a 95% CI of (1.571 and 2.904). For family relations, for every unit increase in family relations, odds of the students to be addicted to the internet will significantly increase by 3.056 with a 95% CI of (1.949 and 4.791). Thus, personal relations, interpersonal relationship, means of surfing the internet and place of residence does not significantly predict students' internet addiction.

Discussion

This study conducted a critical examination of the impact of internet addiction on the interpersonal relationships of undergraduate students at Osun State University in Nigeria. The result revealed that most of the respondents (70%) demonstrated a moderate level of internet addiction; followed by 15.5% of the respondents that demonstrated a mild level of internet addiction and 14.5% exhibit a severe level. Observing the results in the light of previous studies, the study's finding aligns with the fact that there is prevalence of internet addiction among undergraduate students in Nigeria. All findings reported students' addiction at every level - mild, moderate and severe; (Kokka et al. (2021), Wang et al. (2023), Ibrahim et al. (2022), Mahama et al. (2024), Ogboghodo et al. (2024)). Specifically, largest percentages of undergraduates were moderately addicted (Omoyemiju & Popoola, 2021). One the factors that may be responsible for this trend may be the rate at which university education has been computer-based in Nigeria. Computer-based learning in form of online/virtual lecture; sourcing materials online; doing assignments and submission of same on line among others. Apart from academic related activities done online, students also find solace in the social media to relax and relate with friends and families. These may have contributed to the level of addiction evidenced in undergraduate students in Nigeria.

Further results revealed that only the sex of the respondents significantly influenced internet addiction of undergraduate students with higher addiction levels among female students compared to male students. This result agrees with Okwaraji et al. (2015); Omoyemiju and Popoola (2021) and Ogboghodo et al. (2024) studies and is also divergent from Ogbomo and Iwighrehweta (2016) and Şan et al. (2024) that found no gender differences in addiction levels. Notably, none of the previous studies explored found higher addiction levels among female students. This study result showed that age, course, level and religion do not significantly influence the internet addiction of undergraduate students. This finding is deviate from the findings of Arya et al. (2018) and Agbaria and Bdier (2021) that reported higher addiction rates among younger students compared to older ones; in the same vein, Ogboghodo et al. (2024) found significant differences in addiction by academic level, with lower-year students showing increased values. The result further conforms with the findings of Agbaria and Bdier (2021) that there are no significant differences in internet addiction based on their religious inclinations.

In contrast, the investigation's results suggest that factors such as personal connections, interpersonal interactions, internet surfing strategies, and home location do not significantly predict the incidence of internet addiction among students. The study's results suggest a direct

link between the extent of internet addiction among undergraduate students and their challenges in forming and maintaining interpersonal relationships. This is consistent with other studies that discovered a greater probability of interpersonal difficulties among teenagers who are vulnerable to internet addiction (Akanbi et al. 2018; Hao et al. 2022; Nwifo et al. 2023) Research indicates that persons who are prone to internet addiction tend to spend more time alone.

Conclusion

Ultimately, the study's results suggest that there is a significant occurrence of internet addiction among undergraduate students at Osun State University. The addiction level of students is mostly influenced by their moderate behavior, age, degree of study, and religion, while gender does not seem to have a substantial effect. Moreover, research has shown that factors such as personal connections, interpersonal interactions, internet use patterns, and area of residence do not have a substantial influence on the degree of internet addiction among students.

Recommendations based on the findings of the study

Hence, it is recommended that seminars and workshops should be organized to enhance the consciousness of internet addiction among undergraduate students in Osun State.

References

- Abi-Jaoude, E., Naylor, K. T., & Pignatiello, A. (2020). Smartphones, social media use and youth mental health. *CMAJ*, 192(6), E136-E141.
- Adorjan, K., Langgartner, S., Maywald, M., Karch, S., & Pogarell, O. (2021). A cross-sectional survey of internet use among university students. *European Archives of Psychiatry and Clinical Neuroscience*, 271, 975-986.
- Agbaria, Q., & Bdier, D. (2021). Internet addiction among Israeli-Palestinian college students in Israel: its prevalence and relationship to selected demographic variables. *Journal of Concurrent Disorders*, 3(2), 32.
- Akanbi, M. L., Sulaiman, K. A., & Adeyemi, O. I. (2018). Psychosocial consequences of intensive internet use among undergraduates of universities in Ilorin Metropolis". *Library Philosophy and Practice*, 1761 <https://digitalcommons.unl.edu/libphilprac/176>.
- Akin, M. (2017). A research on the impacts of the young people's internet addiction levels and their social media preferences, *International Review of Management and Marketing*, 7(2), 256-262. Retrieved from <http://www.econjournals.com>

- Amano, A., Ahmed, G., Nigussie, K., Asfaw, H., Fekadu, G., Hiko, A., & Soboka, M. (2023). Internet addiction and associated factors among undergraduate students of Jimma University; Jimma, South West Ethiopia, institutional based cross-sectional study. *BMC Psychiatry*, 23(1), 721.
- Aririguzoh, S.A., Sobowale, I., Usaini, S., & Amoka, E. (2018). Influence of the internet on interpersonal communication among youths in Nigeria, 2018.
- Arya, V., Singh, H., & Malhotra, A. K. (2018). Prevalence of Internet addiction and its association with sociodemographic factors among MBBS students at medical college, Jhansi, Uttar Pradesh. *International Journal of Community Medicine and Public Health*, 5(5), 1980-1983. <http://dx.doi.org/10.18203/2394-6040.ijcmph20181709>
- Ballarotto, G., Volpi, B., Marzilli, M., & Tambelli, R. (2018). Adolescent internet abuse: a study on the role of attachment to parents and peers in a large community sample. *Hindawi BioMed Research International*, Article ID 5769250, Retrieved from <https://doi.org/10.1155/2018/5769250>
- Chemnad, K., Alshakhsi, S., Al-Harabsheh, S., Abdelmoneium, A. O., Al-Khalaf, M. S., Baghdady, A., & Ali, R. (2023). Is it contagious? Does parents' internet addiction impact their adolescents' internet addiction? *Social Science Computer Review*, 41(5), 1691-1711.
- Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285.
- Hao, Q. H., Peng, W., Wang, J., Tu, Y., Li, H., & Zhu, T. M. (2022). The correlation between internet addiction and interpersonal relationship among teenagers and college students based on Pearson's correlation coefficient: a systematic review and meta-analysis. *Frontiers in Psychiatry*, 13, 818494.
- Heilig, M., MacKillop, J., Martinez, D., Rehm, J., Leggio, L., & Vanderschuren, L. J. (2021). Addiction as a brain disease revised: why it still matters, and the need for consilience. *Neuropsychopharmacology*, 46(10), 1715-1723.
- Hou, Y., Xiong, D., Jiang, T., Song, L., & Wang, Q. (2019). Social media addiction: Its impact, mediation, and intervention. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 13(1), article 4. <http://dx.doi.org/10.5817/CP2019-1-4>.
- Internet world statistics (2019)
- Ibrahim, A. K., Fouad, I., Kelly, S. J., El Fawal, B., & Ahmed, G. K. (2022). Prevalence and determinants of internet addiction among

- medical students and its association with depression. *Journal of Affective Disorders*, 314, 94-102.
- Internet Live Stats (2016). (www.InternetLiveStats.com). Elaboration of data by International Telecommunication Union (ITU), World Bank, and United Nations Population Division.
- Jhangiani, R., & Tarry, H. (2022). 7.2 Close Relationships: Liking and Loving over the Long Term. *Principles of Social Psychology-1st International H5P Edition*.
- Joorabchi, T. N., Afshariyan, M. S., & Armat, R. (2022). Internet addiction mediates the relationships among internet skill and gratification of using internet with social isolation among Malaysian youths: The moderating roles of gender and race. *International Journal of Education and Development using Information and Communication Technology*, 18(2), 111-126.
- Kokka, I., Mourikis, I., Nicolaidis, N. C., Darviri, C., Chrousos, G. P., Kanaka-Gantenbein, C., & Bacopoulou, F. (2021). Exploring the effects of problematic internet use on adolescent sleep: a systematic review. *International Journal of Environmental Research and Public Health*, 18(2), 760.
- Kuss, D. J., & Pontes, H. M. (2018). *Internet addiction*. Hogrefe Publishing GmbH.
- Li, C., Ning, G., Xia, Y., Guo, K., & Liu, Q. (2022). Does the internet bring people closer together or further apart? The impact of internet usage on interpersonal communications. *Behavioral Sciences*, 12(11), 425.
- Liu, L., Zhang, T., & Han, L. (2023). Positive self-disclosure on social network sites and adolescents' friendship quality: The mediating role of positive feedback and the moderating role of social anxiety. *International Journal of Environmental Research and Public Health*, 20(4), 3444.
- Mahama, I., Edoh-Torgah, N. A., Miezah, D., Ammah, C., & Amponsah, M. O. (2024). The predictive relationship between curiosity and internet addiction among tertiary students in Ghana. *Discover Psychology*, 4(1), 114.
- Mengin, A., Allé, M. C., Rolling, J., Ligier, F., Schroder, C., Lalanne, L., ... & Giersch, A. (2020). Conséquences psychopathologiques du confinement. *L'encephale*, 46(3), S43-S52.
- Mohamed, K. O., Soumit, S. M., Elseed, A. A., Allam, W. A., Soomit, A. M., & Humeda, H. S. (2024). Prevalence of internet addiction and its associated risk factors among medical students in Sudan: A cross-sectional study. *Cureus*, 16(2).
- Nadsombat, M. M., & Tomičić, I. (2023). Deep dive into the media world of youth. *EU and comparative law issues and challenges series (ECLIC)*, 7, 363-373.

- Neverkovich, S. D., Bubnova, I. S., Kosarenko, N. N., Sakhieva, R. G., Sizova, Z. M., Zakharova, V. L., & Sergeeva, M. G. (2018). Students' internet addiction: study and prevention. *EURASIA Journal of Mathematics, Science and Technology Education*, 14(4), 1483-1495. DOI: 10.29333/ejmste/83723.
- Nwufo, J. I., Nnadozie, E. E., & Beluonwu, M. I. (2023). Influence of dark triad and family functioning on internet addiction among in-school adolescents in Nsukka urban of Enugu State, Nigeria. *African Journal for the Psychological Studies of Social Issues*, 26(2).
- Ofole, N. M. & Babatunde, O.O. (2015). Internet addiction among undergraduates in university of Ibadan: imperative for counselling intervention. *African Journal for the Psychological Study of Social Issues*, 18(3).
- Ogboghodo, E., Omoregie, E. K., Omoike, E., & Omuemu, V. (2024). Internet addiction among undergraduate students in Southern Nigeria: Implications for policy and practice. *Journal of Medicine and Biomedical Research*, 23(1), 26-35.
- Ogbomo, M. O., & Iwighrehweta, O. (2016). Internet addiction among undergraduates in universities in Delta State, Nigeria. *Inter. J. Acad. Lib. Info. Sci.*, 4(4), 110-116.
- Okwaraji, Aguwa, Onyebueke & Shiweobi, (2015). Assessment of internet addiction and depression in a sample of Nigerian university undergraduates. *International Neuropsychiatric Disease Journal*. 4(3). DOI: 10.9734/INDJ/2015/19096
- Omoyemiju, M. A., & Popoola, B. I. (2021). Prevalence of internet addiction among university students in Nigeria. *British Journal of Guidance & Counselling*, 49(1), 132-139.
- Pimentel, E., Sivalingam, K., Doke, M., & Samikkannu, T. (2020). Effects of drugs of abuse on the blood-brain barrier: a brief overview. *Frontiers in Neuroscience*, 14, 513.
- Rosenthal, R. J., & Faris, S. B. (2019). The etymology and early history of 'addiction'. *Addiction Research & Theory*, 27(5), 437-449.
- Şan, İ., Karsak, H. G. O., İzci, E., & Öncül, K. (2024). Internet addiction of university students in the Covid-19 process. *Heliyon*, 10(8).
- Sanchez-Fernandez, M., Borda-Mas, M., & Mora-Merchan, J. (2023). Problematic internet use by university students and associated predictive factors: A systematic review. *Computers in Human Behavior*, 139, 107532.
- Smith, A., & Anderson, M. (2018). Social media use in 2018. Retrieved from <http://www.pewinternet.org/2018/03/01/social-media-use-in-2018/>
- Stone, C. B., & Wang, Q. (2018). From conversations to digital communication: The mnemonic consequences of consuming and

- sharing information via social media. *Topics in Cognitive Science*, 1-20.
- Tejumaiye, J. A., Simon, G. I., & Obia, V. A. (2018). Uses and gratifications of the internet among university of Lagos undergraduates.
- Turner, S., Fulop, A., & Woodcock, K. A. (2024). Loneliness: Adolescents' perspectives on what causes it, and ways youth services can prevent it. *Children and Youth Services Review*, 157, 107442.
- Ubogu, J., & Chukwusa, J. (2022). Frequency of internet usage in the library by undergraduate students of library and information science (LIS). *Library Progress (International)*, 42(1), 144-152.
- Wang, J. C., Hsieh, C. Y., & Kung, S. H. (2023). The impact of smartphone use on learning effectiveness: A case study of primary school students. *Education and Information Technologies*, 28(6), 6287-6320.
- Wheless, I. R. (1976). Self-disclosure and interpersonal solidarity: Measurement, validation, and relationships. *Human Communication Research*, 3,47-61.
- Xin, M., Xing, J., Pengfei, W., Houru, L., Mengcheng, W., & Hong, Z. (2018). Online activities, prevalence of Internet addiction and risk factors related to family and school among adolescents in China. *Addictive Behaviors Reports*, 7, 14-18. <https://doi.org/10.1016/j.abrep.2017.10.003>
- Young, K. S. (1998b). Internet addiction: the emergence of a new clinical disorder. *CyberPsychology & Behaviour*, 1,237-244.
- Yu, L., & Shek, D. T. L. (2018). Testing longitudinal relationships between Internet addiction and well-being in Hong Kong adolescents: cross-lagged analyses based on three waves of data. *Child Indicators Research*, 11, 1545-1562.

THE PARADOX OF DIGITAL CONNECTIVITY: GROUP - CENTERED EDUCATION AS A PATHWAY FOR DEVELOPING ESSENTIAL LIFE AND CIVIC SKILLS

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Abstract: *In an era defined by unprecedented digital connectivity, individuals appear closer than ever; yet, true connection and social interaction remain elusive. This paradox of digital connectivity reveals that, while technology promises ease and connection, it often deepens our reliance on comfort, creating a barrier to genuine interpersonal interactions (Warschauer, 2003). Education today faces the immense challenge of equipping the current generation with essential life and civic skills in a digital landscape that offers minimal support for developing qualities like empathy, collaboration, and resilience (Guerrero Elecalde et al., 2024). Group-centered education emerges as a response to these limitations, redefining the classroom into a shared, socially interactive space that prioritizes group dynamics, empathy, and teamwork over individualistic learning paths (Desjardins & Wiksten, 2022). Embracing technological evolution is essential, yet education remains the key to a balanced world, where group-centered education can act as a pillar for harmonious and balanced development, fostering social and civic engagement critical for today's learners (CERL Georgetown University, 2024). This work demonstrates that a skilled educator can harness the group's potential remarkably, encouraging collaboration and engagement that foster socially resilient individuals (Fink, 2014). By fostering cooperative learning and emphasizing civic engagement, group-centered education reimagines the classroom as a foundational community for cultivating critical life and civic skills essential for students to thrive both personally and socially. Research indicates that when effectively managed, group-centered settings allow students to overcome individualistic barriers and promote robust civic engagement and collaborative problem-solving skills (Barron, 2003).*

Key words: *digital connectivity; paradox; group-centered education; life skills development; educational paradigm shift; technology and education.*

Introduction

The technology that surrounds us is an integral part of this world and cannot be stopped. The digital era, in terms of its transformative impact, rivals the Bronze Age, marking a pivotal stage in human evolution. The world finds it impossible to turn back from this trajectory.

One of the biggest challenges driven by the context of digital connectivity is the urge of comfort as the most important aspect of our life. The Internet, which became accessible to the public in 1983, has shaped the connected world we live in today.

A general definition concerning connectivity focuses on the state to establish links or connections between systems, devices, people, or entities, enabling the exchange of information, resources, or services. Digital connectivity refers to virtual communication between individuals, devices, and systems through digital networks. It drives innovation, economic growth, and social interaction, encompassing aspects such as Internet access, connected devices, telecommunication networks, and digital platforms.

While digital connectivity offers numerous advantages, particularly in accessing information and fostering global connections, it paradoxically undermines authentic human relationships. Although people can remain connected 24/7, they often lack deep, meaningful interactions. This creates a paradox: the very technology that brings us closer in a virtual sense often distances us in reality.

Evolution, however, is inseparably linked to education. In a world saturated with information, it becomes crucial to observe how the younger generations interact with this constant flow of data and to examine the role of education in improving lives. Does digital connectivity truly make the world a better place? Does comfort, fostered by the ease of technology, equate to evolution? Or are these conveniences eroding critical aspects of personal and societal growth? (Gee, J. P., 2004).

The impact of digital connectivity raises pressing questions about its influence on the educational system. We must be aware of the fact that this game changer offers access to knowledge with a flow the world has never experienced, but we also must acknowledge that it impacts essential life skills such as collaboration, critical thinking or empathy. (Fink, L. D., 2014).

It is absolutely empirical to understand the way digital connectivity frames and configures the younger generation in order to anticipate the future and focus on societal development.

Challenges of Education in the Digital Era

Currently, the world faces numerous challenges, ranging from economic and political instability to public health crises. From many perspectives, it seems as though the world is searching for direction without a clear path forward. It may sound idealistic, but education holds the key to addressing the many problems we encounter.

The digital era brings unique challenges, having given rise to a series of behavioral changes. If we analyze the past 15 years, considering global events, it becomes evident that there is a pressing need to develop essential life and civic skills. By fostering these skills, we can empower individuals to lead fulfilling lives and actively contribute to society. (Warschauer, 2003).

This is crucial in an increasingly complex and interconnected world.

However, the rapid advancement of technology presents significant challenges for education. Students are constantly surrounded by information, yet many lack the critical thinking skills needed to discern valuable knowledge from misinformation. Digital distractions, such as social media and gaming, compete for their attention, reducing their ability to focus on meaningful learning. Moreover, the overreliance on digital platforms for teaching and learning has created a gap in developing interpersonal and emotional skills, which are vital for empathy, collaboration, and civic engagement.

Another major challenge is the disconnection between the educational system and the needs of modern students. Children, teenagers, and young adults may be more digitally connected than ever, but they often associate school with boredom, irrelevant content, and a lack of real-world application. In many parts of the world, education systems struggle to adapt to these new realities, creating pressure on both students and educators. (Greenfield, 2014).

Educators, in turn, face the daunting task of engaging students who seem indifferent to critical issues such as climate change, politics, and social justice. The decline in empathy and civic engagement among the younger generation is particularly concerning. These challenges call for a reimagining of education—one that embraces the potential of digital tools while fostering essential life skills, critical thinking, and genuine human connection.

Group-Centered Education: An Innovative Solution

Educators must recognize that the world is rapidly changing, and this demands continuous improvement and evolution in teaching practices. As key figures in shaping society, educators must adapt to new challenges and reimagine the way education is delivered. Looking back, it is evident that education has undergone significant transformations.

Historically, education was a privilege reserved for the wealthy, and the concept of universal schooling is a relatively recent development.

The classroom, as we understand it today, emerged in the early 20th century, marking a pivotal shift in how learning environments were structured. To truly innovate in education, one must study its historical evolution and understand how teaching methods and access to education have changed over time.

In the digital era, redefining the classroom as a socially interactive space is more than an aspiration—it is a necessity. A **classroom** is traditionally defined as a physical or virtual space where structured learning takes place under the guidance of a teacher. However, a **socially interactive classroom** transcends this definition by fostering an environment where collaboration, dialogue, and group activities are central to the learning process. It is a space that encourages students to connect with one another, share perspectives, and work collectively toward common goals.

Group dynamics play a crucial role in this transformation. Effective group dynamics facilitate the development of empathy, teamwork, and interpersonal skills. When students engage in group-centered learning, they are more likely to build relationships, improve communication, and develop problem-solving skills. This approach also helps break down barriers to understanding, as students learn to appreciate diverse viewpoints and work toward mutual respect and shared success (Heitner, 2016). By adopting group-centered education, educators can offer an innovative solution to the challenges of the digital era. This method not only enhances academic performance but also cultivates critical life skills necessary for thriving in a complex, interconnected world.

The Impact of Group-Centered Education

As stated above, group-centered education is a necessity when it comes to laying the foundation for strong, resilient minds. This approach fosters the development of essential life skills that enable individuals to navigate both personal and professional spheres effectively (Siemens, 2005).

Group-centered methods such as case studies, role-playing, simulations, debates, workshops, Socratic seminars, and project-based learning have a profound impact on building key skills like teamwork, empathy, patience, creative thinking, and problem-solving. These methods provide students with opportunities to engage in real-life scenarios, collaborate with peers, and learn from diverse perspectives.

In the digital era, many young people spend significant amounts of time in virtual environments, developing digital skills that are undoubtedly valuable in today's world. However, reality requires a different set of skills—those that cannot be fully cultivated in a virtual space. Life skills

such as effective communication, emotional intelligence, adaptability, and conflict resolution are best developed through direct, face-to-face interaction and hands-on experiences.

Social resilience, or the ability to adapt to and recover from challenges, is one of the most critical outcomes of group-centered education. By working together in dynamic group settings, students learn to navigate conflicts, manage diverse personalities, and support one another in achieving shared goals. These experiences prepare them for the complexities of relationships, family life, and the workplace (Desjardins & Wiksten, 2022).

Moreover, group-centered education promotes civic engagement by encouraging students to actively participate in discussions about social and political issues. Collaborative problem-solving tasks help them understand the importance of contributing to their communities and finding solutions to real-world problems. This process cultivates responsible, socially aware individuals who are equipped to take on leadership roles and drive positive change in society.

Ultimately, to thrive in life—whether in building relationships, pursuing careers, or contributing to the community—young people need life skills that extend beyond the digital realm. Group-centered education offers a powerful solution to bridging this gap and preparing students for the realities of modern life.

The Role of the Educator in Group-Centered Environments

The role of the educator has evolved significantly. No longer seen as an authoritarian figure or the sole source of knowledge, the educator in a group-centered environment acts as a facilitator, guiding students toward collaborative learning and fostering an inclusive atmosphere. The educator does not judge but instead supports, encourages, and harnesses the group's potential to achieve shared goals (Siemens, 2005). To effectively harness a group's potential, educators must possess a wide range of skills, including:

- **Empathy:** Understanding the diverse needs and emotions of students.
- **Active Listening:** Paying close attention to students' ideas and concerns.
- **Conflict Resolution:** Managing disagreements constructively.
- **Facilitation Skills:** Guiding discussions and activities without dominating them.
- **Adaptability:** Adjusting methods to fit the group's dynamics and needs.
- **Encouragement of Creativity:** Promoting innovative thinking and problem-solving.

Examples of Meaningful Learning Experiences and Skills Developed

Learning Experience	D e s c r i p t i o n	S k i l l s D e v e l o p e d
Project-Based Learning	S t u d e n t s c o l l a b o r a t e r y t o c r e a t e a p r o d u c t , r e p o r t	T e a m w o r k, p r o b l e m - s o l v i n g , c r i t i c a l t h i n k i n g , c o m m u n i c a t i o n s k i l l s

	<p>or pr es e nt at io n o n a re al - w or ld is s u e.</p>	
<p>Role-Playing and Simulations</p>	<p>St u d e nt s a ct o ut ro le s in a sc e</p>	<p>E m pa th y, co m m un ic ati on , de cis io n-</p>

	n ar io (e .g , a m o c k tr ia l or hi st or ic al e v e nt).	m ak in g
Debates	St ru ct ur e d di sc u ss io n s	Cr iti ca l thi nk in g, pu bli c sp ea

	<p>w h er e st u d e nt s d ef e n d o p p o si n g vi e w p oi nt s.</p>	<p>ki ng , pe rs ua si ve sk ill s</p>
<p>Socratic Seminars</p>	<p>O p e n- e n d e d</p>	<p>A na lyt ic al thi nk in g,</p>

	di sc u ss io n s b as e d o n a s h ar e d te xt or q u es ti o n.	lis te ni ng , art ic ul ati on
Collaborative Problem-Solving	G ro u p s w or k to g	C oll ab or ati on , cr ea tiv

	et h er to s ol v e a c o m pl e x pr o bl e m or c as e st u d y.	e thi nk in g, ad ap ta bil ity
Design Thinking Workshops	St u d e nt s fo ll o w	In no va tio n, te a m w or

	d e s i g n t h i n k i n g s t e p s t o d e v e l o p i n n o v a t i v e s o l u t i o n s.	k, r e s i l i e n c e
Peer Teaching	St u d e n t	L e a d e r s h i p,

	<p>s ta k e tu rn s te a c hi n g a c o n c e pt to th ei r p e er s.</p>	<p>co nfi de nc e, co m m un ic ati on</p>
<p>Community-Based Projects</p>	<p>St u d e nt s e n g a</p>	<p>Ci vi c re sp on si bil ity ,</p>

	g e in pr oj e ct s b e n ef iti n g th ei r lo c al c o m m u ni ty .	pl an ni ng , te a m w or k
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By creating meaningful learning experiences, educators help students develop not only academic knowledge but also the critical life skills needed to thrive in today’s world (Kegan, 1994).

Methodology and Questionnaire Analysis

The following paper didn’t emphasize only the theoretical part of the digital connectivity paradox and its role concerning essential life skills, it also provides an insight through a research method – a questionnaire that strengthens the observations. The author of this paper wishes not

only to discuss the matter, but also to study the perceptions.

Research Objective

The primary objective of this research is to explore the impact of technology on children's and students' social and civic skills. Specifically, the study aims to investigate how the use of digital devices influences essential life competencies such as empathy, communication, critical thinking, and civic responsibility. Additionally, the research seeks to evaluate the role of group activities in education and their effectiveness in fostering these key skills. The findings will contribute to identifying more effective educational methods and promoting balanced development among children and students.

Description of the Questionnaire

The questionnaire was designed as a tool to collect both quantitative and qualitative data from participants, including teachers, parents and both. It aimed to gather insights into the following areas:

1. **Digital Technology Usage:** How frequently participants or their children use digital devices and for what purposes.
2. **Perceptions of Social and Civic Skills:** Opinions on how technology impacts skills like empathy, teamwork, and communication.
3. **Opinions on Group Activities:** The perceived effectiveness of group-centered educational methods in developing essential life and civic skills.

The questionnaire consisted of 7 questions, using a combination of multiple-choice, Likert scale, and open-ended formats. Closed-ended questions were used to collect measurable data, while open-ended questions allowed respondents to elaborate on their views, providing richer insights. The survey was conducted online and distributed via WhatsApp, ensuring broad accessibility and confidentiality. Respondents took an average of 4-5 minutes to complete the survey.

Characteristics of the Sample

The study gathered responses from 278 participants, which included a diverse group of parents, teachers, and those identifying as both. The sample distribution is as follows:

- **Parents:** 79.9% of the total respondents, providing insights into their children's digital habits and social skills.

- **Teachers:** 10.4% of the sample, offering professional perspectives on how group activities and technology affect learning.
- **Both Parents and Teachers:** 9.7%, sharing dual perspectives.

The participants represented various age groups, ranging from early childhood (with parents responding on behalf of young children) to late adolescence and adults, offering a comprehensive view of different developmental stages. Additionally, responses included perspectives from both urban and rural settings, ensuring a diverse and balanced sample.

Data Analysis and Interpretation

The collected data was analyzed using a mixed-method approach, integrating both quantitative and qualitative analysis.

Quantitative Analysis

Data from closed-ended questions was analyzed statistically to identify trends and correlations. The frequency of digital device usage was compared to the perceived impact on skills such as empathy and teamwork. Charts and tables were used to illustrate these findings, highlighting significant patterns.

Key Findings from Quantitative Data:

- **Time spent observing technology's impact:** 54.7% of respondents believe they spend a lot of time observing the effect of technology on children, while 36.3% believe they spend a moderate amount of time. Only 7.6% spend little time, and 1.4% do not observe at all.
- **Daily screen time for children/students:**
 - 29.5% reported 3 hours per day
 - 25.2% reported 2 hours per day
 - 12.9% reported 1 hour per day
 - 17.6% stated they do not monitor their children's screen time
- **Perceived negative impact of technology on social skills:** On a scale from 1 to 5, 45.1% rated the negative impact as 5 (highest level of concern).
- **Preferred group activities for skill development:** The most effective group activities identified were:
 - **Group discussions** (71.1%)
 - **Volunteering activities** (70.8%)
 - **Role-playing and debates** were also highly rated, suggesting their importance in developing social and civic skills.

Qualitative Analysis

Responses to open-ended questions were examined to identify recurring

themes and insights. Participants frequently noted concerns about the overuse of digital devices leading to **reduced face-to-face interactions**, while others emphasized the positive potential of group activities in bridging this gap.

Key Themes from Qualitative Data:

- Lack of time (73.3%) and insufficient resources (41.2%) were highlighted as major obstacles in implementing group activities.
- A significant majority (95.3%) believe that group activities can compensate for the negative impact of technology on social skills.

What did we learn from the research?

This study highlights the growing concerns among parents and teachers regarding the influence of technology on children's social and civic development. While digital devices offer many educational benefits, excessive usage appears to negatively impact essential life skills, particularly empathy, communication, and collaboration. However, the findings suggest that group-centered educational activities can serve as an effective counterbalance, fostering meaningful social interactions and civic engagement.

Future research could focus on implementing structured interventions that integrate both digital literacy and group learning to create a more balanced educational environment.

Conclusions

This paper shows unquestionably that group-based learning is the right approach to the issues raised by the digital divide. On one hand, technology has enhanced people's lives through access to information and communication, on the other hand, people have become less emotional, social and civic citizens. The results show that while the use of digital connectivity has its advantages, the person as an individual, and society in general, cannot develop fully.

Group-centered education is, therefore, presented as a viable answer to many of the challenges facing education systems, while also promoting healthy human relationships and preparing students for the future. Through group work such as debates, simulations, and group projects, the students are trained to be resourceful, creative, and civic minded. In addition, the role of the teachers is crucial in creating positive learning environments for students to develop their social, emotional and cooperative skills.

The outcomes of the study emphasize that group activities can help to reduce the adverse impacts of overexposure to digital technologies. The participants in the study agreed with the statement about the need for face-to-face communication to avoid social isolation as a result of technology use. However, for group-centered education to be effective,

teachers need to purposefully develop collaborative learning tasks that would require students to think critically and communicate with their peers.

In conclusion, the relationship between technology and education should not be considered as a rivalry but as a potential. Thus, education can be enhanced to develop students who are not only technological savvy but also socially mature through the integration of digital technology with group learning. Further research should also be conducted to find out how to implement specific strategies to combine digital learning with the development of social skills so that education can contribute not only to the individual's growth but also to the growth of the society.

References

- Barron, B. (2003). *When Smart Groups Fail*. The Journal of the Learning Sciences, 12(3), 307–359. <http://www.jstor.org/stable/1466921>
- CERL Georgetown University. (2024). *Project Citizen Research Program*.
- Desjardins, R., & Wiksten, S. (2022). *Handbook of Civic Engagement and Education*. Edward Elgar Publishing.
- Fink, L. D. (2014). *Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses*. Jossey-Bass.
- Gee, J. P. (2004). *Situated Language and Learning: A Critique of Traditional Schooling*. Routledge.
- Greenfield, S. (2014). *Mind Change: How Digital Technologies Are Leaving Their Mark on Our Brains*. Random House.
- Guerrero Elecalde, R., et al. (2024). *Digital and Social-Civic Skills in Future Primary Education Teachers*. Education Sciences.
- Heitner, D. (2016). *Screenwise: Helping Kids Thrive (and Survive) in Their Digital World*. Routledge.
- Siemens, G. (2005). *Connectivism: A Learning Theory for the Digital Age*. International Journal of Instructional Technology and Distance Learning, 2(1).
- Warschauer, M. (2003). *Technology and Social Inclusion: Rethinking the Digital Divide*. MIT Press.

**BENEFITS AND CHALLENGES OF BLENDED LEARNING:
PERSPECTIVES OF PRE-SERVICE TEACHERS OF
PRIMARY EDUCATION IN ILORIN, NIGERIA**

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Abstract: *The study investigated the perceived benefits and challenges of blended learning among pre-service teachers of primary education in Ilorin, Nigeria. The study adopted descriptive survey research design. The target population consists of all pre-service teachers of primary education in tertiary institutions in Ilorin, Nigeria, while the study sample consist of 400 pre-service teachers randomly selected across four tertiary institutions. Researcher self-constructed questionnaire titled: “Benefits and Challenges of Blended Learning Questionnaire” (BCBLO) was used for data collection. The instrument was validated by two experts in Teacher Education and Educational Test and Measurement, while Cronbach Alpha reliability method used yielded an index of 0.83. Mean and standard deviation was used to answer the research questions, while Multivariate Analysis of Variance was used to test the hypothesis formulated. The findings revealed that blended learning is beneficial to teaching and learning as it promotes collaborative learning and improves learners’ engagement. It was also revealed that lack of suitable infrastructure and access to technology is among the constraints for the successful implementation of blended learning. It was recommended that school administrators should encourage the integration of blended learning to foster effective teaching and learning.*

Key words: *blended learning; online lesson delivery; face-to-face lesson delivery; pre-service teachers; teachers education.*

Introduction

Education as a development agent, is valued by all nations of the world because it has brought total liberation to man. It has transformed man from ignorance and misery to knowledge and happiness. It has made man useful to himself, his generation and beyond. Education helps the

individual to develop physically, mentally, morally, spiritually, and emotionally by providing suitable environment, teaching him new knowledge, attitudes and skills that will enable him to be useful to himself and his society. Education at this level strengthens the learner's feet to climb the educational ladder to the zenith of academic attainment if a good foundation is laid.

The Federal Republic of Nigeria (2004), stated that primary education refers to education given to children aged 6 to 11 plus in primary schools and that the primary level is the key to the success or failure of the whole system since the rest of the education system is built upon it. This statement confirms the fact that the primary level of education is most crucial to the success of other levels, hence the need for the stakeholders to do everything possible to lay a solid foundation for its sustainability. Sen (2010) buttressed this by affirming that primary education is the foundation for a child's learning on which every other level of learning depends. In the light of these objectives, this paper examines how the primary school may be seen and rightly recognized as foundation of education in the society. Furthermore, Olaniyan and Obadara (2008) also submitted that apart from the home as the first agent of socialization, primary school is the first that introduces formal education or literacy to the children. In other words, primary school education is a foundation upon which all other levels of education are built. Armstrong (2008) affirmed that certainly, primary and secondary educations are both important elements of the sector, not least because they feed directly the quality of higher levels of education.

The concept of blended learning has been around for a long time, but its terminology was not firmly established until around the beginning of the 21st century. Blended learning can be defined as learning systems that combine face-to-face instruction with computer mediated instruction (Graham et al., 2013). It involves a combination of conventional face-to-face and online technology-based learning (Wang, 2011). The combination may involve mixing various event-based activities such as face-to-face classroom, live e-learning, self-paced learning, synchronous online conference and training, or asynchronous self-paced learning (Graham et al., 2013). Blended learning, also known as technology-mediated instruction, web-enhanced instruction, or mixed-mode instruction, is an approach to education that combines online educational materials and opportunities for interaction online with physical place-based classroom methods. Blended learning requires the physical presence of both teacher and student, with some elements of student control over time, place, path, or pace. While students still attend brick-and-mortar schools with a teacher present, face-to-face classroom practices are combined with computer-mediated activities regarding

content and delivery. It is also used in professional development and training settings.

Additionally, a meta-analysis by Poon (2013) that historically looked back at a comprehensive review of evidence-based research studies around blended learning, found commonalities in defining that blended learning was considered a combination of physical (face-to-face) modes of instruction with online modes of learning, drawing on technology-mediated instruction, where all participants in the learning process are separated by distance some of the time. This report also found that all of these evidence-based studies concluded that student achievement was higher in blended learning experiences when compared to either fully online or fully face-to-face learning experiences.

Blended learning is sometimes used in the same breath as personalized learning and differentiated instruction, Blended Learning is provided by the effective combination of different modes of delivery, models of teaching and styles of learning which are exercised in an interactively meaningful learning environment. Blended Learning courses combine online and classroom learning activities and uses resources in an optimal way in order to improve student learning outcomes and to address important institutional issues (Garrison, 2004). In general terms, blended learning combines the online delivery of educational content with the best features of classroom interaction and live instruction in such a way as to personalize learning, allow thoughtful reflection, and differentiate instruction from student to student across a diverse group of learners.

Blended learning (also referred to as flexible or hybrid learning) is most commonly utilized in higher education or adult education. It motivates students and makes the purpose of learning more definitive and clearer (Latchem & Jung, 2010). When e-learning is combined with conventional learning in the classroom, students can take advantage of much of the flexibility and convenience of an online course while retaining the benefits of the face-to-face classroom experience (Dziuban, et al., 2011). It is believed that the new traditional model in higher education around the world will be blended learning or technology-enabled learning spaces (Graham, et al., 2013). According to Kang (2014), the blended learning approach is favoured in higher education because it can effectively reduce costs, distribute quality education, and solve distance problems. With the advantages associated with e-learning, the blended learning approach is considered to be important because it can reduce the limitations typically associated with online learning, such as the lack of communication that often results in feelings of separation, isolation, and alienation among students, as well as diminished feedback and lack of responsibility.

Blended learning has been in use in classrooms in various ways. This learning approach has been identified as an effective method to ensure

superior integration of information communication technology (ICT) across the curriculum in teacher preparation programs. It can assist pre-service and in-service teachers in learning how to integrate technology within the digital environment in a non-threatening and comfortable setting (Duhaney, 2012). As of now, considerable research has been conducted to document the benefits of blended learning in higher education, but there are comparatively few empirical studies of the blended learning approach in teacher education fields (Collopy & Arnold, 2009). As Kang (2014) indicated in his study, the subject matter being taught and the teacher candidates can affect the effectiveness of the blended approach. In future studies, researchers need to consider the features of teacher education programs, such as field experience of the teacher candidates, communication with in-service teachers, and interaction with students. This paper investigates the perspectives of pre-service teachers of primary education in Ilorin, Nigeria, toward benefits and challenges in the use of blended learning in their training courses. In spite of these benefits of blended learning, Umoh and Akpan (2014) reported that non-availability, non-accessibility and inadequate students' ICT skills towards the utilization of blended learning tools for teaching and learning is a barrier to its adoption in Nigerian Universities. Several benefits of blended learning have been reported in the literature, with the most common benefit being flexibility (Gedik, et al., 2012). Other benefits include opportunities for students to work at their own pace and with personalized curriculum, reinforcement of learning, and added engagement with peers. In a study of blended teacher's beliefs on the affordances and constraints of blended learning (Jeffrey et al., 2014), it was reported that a key benefit to the blended experience was the opportunity to meet face-to-face, as they believe their social presence and content expertise had a greater impact during in-person classes. Furthermore, it was claimed that the benefit of the online portion of a blended course was the continuous access and availability of the course learning management system (LMS), which served as a repository of content resources and grades and enabled fast and frequent communication. A key benefit of blended learning for teachers is the availability of various online tools and resources to differentiate instruction (Graziano & Feher, 2016). Online learning affords the use of games, tutorials, videos, and such that can support learning at different levels and for students with specific needs. Graziano and Feher (2016) also found that classroom management issues were mitigated by the online environment. Student disturbances and complaints are reduced and easier to deal with in an online environment. However, blended learning is not without challenges. A few significant issues with blended learning have been identified in the current literature. One challenge noted by Lopez-Perez, et al., (2011) is

sustaining student engagement in the online component of the course when students see more value in the face-to-face sessions. This was echoed by Jeffrey et al. (2014), who reported similar findings with teachers. They found many teachers harbored the belief that there was more value in the face-to-face portion of a blended course and therefore favored it more than the online portion. A recent study on the problems of implementing blended learning among university instructors by Mozelius and Rydell (2017) revealed that the most common challenges were the extended time to learn new technology tools, lack of support for learning critical functions of the LMS, and discomfort with understanding and implementing effective online pedagogy. Gedik et al (2012) specified additional barriers to blended learning, such as the complexity of the work, where students are expected to engage in and complete tasks in two environments; staying disciplined and on track in the online activities; and struggling with technology issues.

Pre-service teachers also experience difficulties when using blended learning. Nakamura et al. (2018) studied the pros and cons of blended learning when teaching mathematics and found that it is a significant inconvenience for students to use online learning systems to submit answers (such as CAS). The above technology issues are also raised by Poon (2013) who reported that students do not find it motivating to learn online because of feelings of inauthenticity and isolation resulting from fewer lesson volumes and the lack of leadership. Students feel the need to become more authentically interconnected in the classroom. Also, learners cannot complete tasks because of lost time, the absence of individual problem-solving training, and a lack of social interaction when learning face-to-face.

Statement of the Problem

Teacher education is expected to contribute to economic programmes through a series of educational programmes and one of the programmes is primary education. Primary education is an educational programme which is designed to equip children with basic knowledge at the primary level of education, and also refers to the learning tailored towards child development at the basic level of education. It is expected to be the bedrock of success for other levels of education. However, for Nigeria to guarantee future progress and development of the country, primary education must be rescued from total decay and further decline. Inadequate knowledge and attitude have been found to be a barrier toward using blended learning instruction among pre-service teachers in tertiary institutions in Ilorin, Kwara State. This is as a result of the fact that most of the pre-service teachers in these institutions are not exposed to the use of the blended learning application by their lecturers and this leads to lack of sufficient knowledge which resulted to negative attitude toward blended learning.

Research by Alsalmi et al. (2021) indicated that the effectiveness of the blended approach to students' learning depends on the levels of the students. Students with low grades may find it difficult to apply new teaching and learning strategies in blended learning, especially if they are not intrinsically motivated. This clearly indicated the effectiveness of blended learning when being used by the experts and the strategies to be applied in implementing it, as well as the benefits it has on effective teaching and learning. Therefore, this creates a research gap on the perceived benefits and challenges of blended learning among pre-service teachers of primary education. Hence, the study focusses on the benefits and challenges of blended learning as perceived by the pre-service teachers of primary education in Ilorin, Nigeria.

Purpose of Study

The main purpose of this research work is to investigate the perspectives of pre-service teachers of primary education on benefits and challenges of blended learning in tertiary institutions in Ilorin, Kwara State. This study thus seeks to:

- i. find out the benefits of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria.
- ii. examine the challenges of blended learning as perceived by pre-services teachers of primary education Ilorin, Nigeria;
- iii. determine whether there is significant difference in the perceived benefit and challenges of blended learning among per-service teachers of primary education base on gender and level of study.

Research Questions

The following research questions were raised to guide this study:

- i. What are the benefits of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria?
- ii. What are the challenges of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria?

Research Hypothesis

HO₁: There is no significant difference in the perceived benefits and challenges of blended learning among per-service teachers of primary education base on gender and level of study.

Methodology

The study employed descriptive survey research design where the opinions of the participants were sought for the research. This research design was selected because this study intends to examine the benefits and challenges of blended learning as perceived by the pre-service teachers of primary education in Ilorin, Nigeria. The population of the

study consist of all pre-service teachers in tertiary institutions in Ilorin, Kwara State, Nigeria, while the target population was made up of all pre-service teachers of primary education in tertiary institutions in Ilorin, Nigeria. A sample of four hundred pre-service teachers were selected across three levels of study (100level to 300level) in four tertiary institutions in Ilorin, Nigeria using stratified random sampling technique. The instrument used for data collection was a researcher designed questionnaire titled: “Benefits and Challenges of Blended Learning Questionnaire” (BCBLQ). The questionnaire was close ended consisting of Section A, B and C. The section A consist of demographic information of the respondents which are gender and level of pre-service teachers’ education; while section B and C comprised items on benefits of blended learning and challenges of blended learning respectively. A four Likert scale response was used as the response format for the instrument which are Strongly Agree (SA) – 4points, Agree (A) – 3points, Disagree (D) – 2points, and Strongly Disagree (SD) – 1point. The research instrument was validated by the experts in the field of Teacher Education and Educational Test and Measurement, while instrument reliability was established using Cronbach Alpha reliability method which yielded a value of 0.83. The data collected were analyzed using descriptive statistics (Mean and Standard deviation) for the research question raised, while inferential statistics (Multivariate Analysis of Variance) was used to test the hypothesis formulated.

Results

The data collected were analyzed with the use of Statistical Package for Social Sciences (SPSS 23.0). The results of the findings are presented below:

Gender	Frequency	Percentage (%)
Male	187	46.8
Female	213	53.2
Total	400	100
Level of Study		
100 L	134	33.5
200 L	118	29.5
300 L	148	37.0
Total	400	100

Table 1: Demographic Data of the Respondents

Table 1 showed that out of 400 respondents that participated in this study, 187 (46.8%) were males, while 213 (53.2%) were females. From this, it can be deduced that majority of the respondents were female pre-service teachers. More so, it was revealed that out of the 400

respondents, 134 (33.5%) were 100L students, 118 (29.5) were 200L students, while 148 (37.0%) were 300L students. It was then deduced that majority of the respondents were 300L pre-service teachers.

Research Questions

Two research questions were generated and were answered with the use of mean and standard deviation (Descriptive Statistics).

Research Question 1: *What are the benefits of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria?*

In order to find out the benefits of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria, mean of responses of the respondents to each items on the questionnaire were computed, having four Likert scale format of Strongly Agreed (4 points), Agreed (3 points), Disagreed (2 points), and Strongly Disagreed (1 point). In order to get the cut-off mark, the average of the total point was calculated to be 2.5 (That is; $4+3+2+1 = 10$; $10/4 = 2.5$). Therefore, any mean value below 2.5 was tagged Disagreed while mean score above 2.5 was tagged Agreed. In order to provide answer to the above research question, the result of the data analysis is presented in the table below:

S/N	ITEMS	X	SD	Remark
1.	Promotes collaborative learning	2.67	1.06	Agreed
2.	Encourages critical thinking	2.62	1.11	Agreed
3.	Saves time	2.64	1.09	Agreed
4.	Improves learners' engagements	2.60	1.13	Agreed
5.	Improves communication	2.59	1.23	Agreed
6.	Aids learning	2.54	1.14	Agreed
7.	Teaches accountability and responsibility	2.52	1.22	Agreed
8.	Makes learning interesting	2.61	1.13	Agreed
9.	Increases accessibility	2.55	1.14	Agreed
10.	Easy access to study materials	2.53	1.14	Agreed
Weighted Mean		2.59		

Table 2: Mean and Standard Deviation showing the Benefits of Blended learning

Table 2 above revealed the benefits of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria. It was evidence from result in the table above that the mean value of all the

items are greater than 2.50. From the response, benefits of blended learning as perceived by pre-service teachers of primary education is that blended learning; promotes collaborative learning, saves time, encourages critical thinking, makes learning interesting, improves learners' engagement, and improves communication. These were all ranked 1st, 2nd, 3rd, 4th, 5th and 6th respectively in accordance with their mean values from the highest to the lowest. The overall mean value of **2.59** which is greater than the cut-off means of 2.50 indicated that all the above items are perceived the benefits of blended learning among pre-service teachers of primary education in Kwara State.

Research Question 2: *What are the challenges of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria?*

In order to find out the challenges of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria, mean of responses of the respondents to each item on the questionnaire were computed, using four Likert scale format of Strongly Agreed (4 points), Agreed (3 points), Disagreed (2 points), and Strongly Disagreed (1 point). In other to get the cut-off mark, the average of the total point was calculated to be 2.5 (That is; $4+3+2+1 = 10$: $10/4 = 2.5$). Therefore, any mean value below 2.5 was tagged Disagreed while mean score above 2.5 is tagged Agreed. The result of the analysis is presented in the table below:

S/N	ITEMS	\bar{X}	SD	Remark
1.	No direct communication with other participants	2.52	1.03	Agreed
2.	lack of suitable infrastructure and access to technology	2.57	1.07	Agreed
3.	Non-attendance in synchronous classes	2.55	1.09	Agreed
4.	Conflict in schedule	2.54	1.10	Agreed
5.	Pace of advancement	2.54	1.12	Agreed
6.	Heavy academic workload	2.52	1.14	Agreed
7.	Negative impact on students	2.56	1.08	Agreed
8.	Low motivation to learn	2.49	1.21	Disagreed
9.	Log-in problems	2.51	1.18	Agreed
10.	Negative impact on teachers.	2.48	1.22	Disagreed
Weighted Mean		2.53		

Table 3: Mean and Standard Deviation showing the Challenges of Blended learning

Table 3 above revealed the challenges of blended learning as perceived by pre-service teachers of primary education in Ilorin, Nigeria. It was revealed from the table above that the mean value of all the items are greater than 2.50, except for items 8 and 10 which are less than 2.50. From the teachers' response, it shows that the major challenges facing the implementation of blended learning as perceived by pre-service teachers of primary education are; lack of suitable infrastructure and access to technology, negative impact on students, non-attendance in synchronous classes, conflict in schedule, pace of advancement, heavy academic workload, and no direct communication with other participants. These were all ranked 1st, 2nd, 3rd, 4th, 5th, 6th, and 7th respectively in accordance with their mean values from the highest to the least. The overall mean value of **2.53** which is greater than the cut-off means of 2.50 indicated that all the above items are the challenges of blended learning as perceived by pre-service teachers of primary education in Kwara State.

Testing the Hypothesis

One research hypothesis was formulated and was tested with the use of Multivariate Analysis of Variance (MANOVA) at 0.05 level of significance.

H₀₁: *There is no significant difference in the perceived benefits and challenges of blended learning among per-service teachers of primary education base on gender and level of study.*

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Benefits	118.327	6	19.721	.796	.580
	Challenges	124.708	6	20.785	.807	.572
Intercept	Benefits	60579.211	1	60579.211	2.446	.000
	Challenges	49112.879	1	49112.879	1.906	.000
Gender	Benefits	2.933	1	2.933	.118	.733
	Challenges	2.374	1	2.374	.115	.684
Level	Benefits	68.053	3	22.684	.916	.444
	Challenges	93.598	3	31.199	1.211	.321
Gender*Level	Benefits	30.352	2	15.176	.613	.548
	Challenges	16.871	2	8.436	.327	.723
Error	Benefits	817.448	33	24.771		
	Challenges	850.267	33	25.766		
Total	Benefits	101637.000	400			
	Challenges	81885.000	400			
Corrected Total	Benefits	935.775	399			
	Challenges	974.975	399			

Table 4: Summary of MANOVA showing the significant difference in the perceived benefits and challenges of blended learning based on gender and level of study

Table 4 above showed the result of the significant difference in the perceived benefits and challenges of blended learning among pre-service teachers of primary education based on gender and level of education in Ilorin, Nigeria. It was revealed from the table above that pre-service teachers' perspectives on the benefits and challenges of blended learning does not depend on the gender of the respondents. This was evident by significant value of 0.73 and 0.68 which are greater than 0.05 alpha level. Also, the table revealed that the perception of pre-service teachers on the benefits and challenges of blended learning does not depend on their level of study. This was evident by significant value of 0.44 and 0.32 which are greater than the alpha value of 0.05. More so, when gender and level of study were paired together, it indicated that their interaction does not affect the perceptions of pre-service teachers on the benefits and challenges of blended learning. This was evident from the results in the above that the significant value of 0.55 and 0.72 obtained respectively are greater than the alpha value of 0.05. Hence, the null hypothesis above which stated that there is no significant difference in the perceived benefits and challenges of blended learning among pre-service teachers of primary education base on gender and level of study is retained.

Discussion of the findings

The results above revealed that the perception of pre-service teachers of primary education in Ilorin, Nigeria on benefits of blended learning is that it promotes collaborative learning, saves time, encourages critical thinking, makes learning interesting, improves learners' engagement, and improves communication. This was evident from the response of the pre-service teachers which revealed that blended learning has some benefits which can significantly influence effective teaching and learning. More so, blended learning emphasizes the quantity incorporation of face-to-face and online learning. This is as a result of the important roles that blended learning plays in supporting and influence learning beyond the classroom. Since teachers and learners have limited time in the classroom, a seminar might continue in an online setting by using a discussion board or other media. This supports the assertion of Lopez-Perez et al. (2011), who affirmed that the use of blended learning has a positive effect in reducing dropout rates and in improving exam marks. Moreover, learners enjoyed participating in blended learning due to its flexibility and the networking opportunities it offers. This shows that students taking blended learning viewed their learning more positively. This was buttressed by Poon (2013) who supported that blended learning gives greater flexibility for student learning in terms of learning style and study pace. With the adoption of a wide range of delivery methods, blended learning can successfully improve students' experience and enhance their learning engagement.

Furthermore, this study revealed that some of the challenges of blended learning are; lack of suitable infrastructure and access to technology, negative impact on students, non-attendance in synchronous classes, conflict in schedule, pace of advancement, heavy academic workload, and no direct communication with other participants. This was shown from the response of the pre-service teachers which revealed that blended learning has some challenges which can hinder its effectiveness implementation in teaching and learning. Despite the fact that blended learning increases the study flexibility for both staff and students, it sometimes leads to relatively capital intensive, lack of suitable infrastructure and access to technology as some constraints for the successful integration of blended learning. This corroborates the submission of Tshabalala, et al. (2014), who stated that a list of challenges that add to the constraints in the implementation of blended learning include: lack of policy, lack of faculty support, lack of technological and computer skills, large class sizes, and inadequate technological resources. To further this explanation, Mirriahi, et al (2015) affirmed that lack of institutional definition of blended learning causes some challenges, as well as the lack of staff capacity to engage with blended learning, increases the probability of misinterpreting the blended learning principles and practices.

Moreover, the findings of this study showed that there was no significant difference in the perception of pre-service teachers of primary education on benefits and challenges of blended learning based on their gender and level of study. This was revealed by the significant value of 0.73 and 0.68 which are greater than the alpha value of 0.05. Also, the findings revealed that level of study has no influence on perception of the pre-service teachers on the benefits and challenges of blended learning. This was also revealed by the significant value of 0.44 and 0.32 which are greater than the alpha value of 0.05. This indicates that the perspectives of pre-service teachers on benefits and challenges of blended learning does not depend on their gender and level of study. This could be as a result of the fact that respondents are in the same learning environment upon which they enjoy the same benefits of blended learning and also experience similar challenges as it relates to blended learning. This finding is in agreement with that of Adas and Abu Samais, (2011) who reported no significant gender difference between female and male students' performance with the use of blended learning.

Conclusion

From the forgoing, it was concluded that pre-service teachers of primary education perceived blended learning as very beneficial to teaching and learning because, it promotes collaborative learning, saves time, encourages critical thinking, makes learning interesting, improves learners' engagement, and improves communication. Also, pre-service

teachers perceived challenges of blended learning are lack of suitable infrastructure and access to technology, negative impact on students, non-attendance in synchronous classes, conflict in schedule, pace of advancement, heavy academic workload, and no direct communication with other participants. It was revealed that the perspectives of pre-service teachers of primary education does not depend on both gender and level of study.

Recommendations

The following recommendations are proffer on the integration of blended learning into teaching and learning;

1. School administrators should encourage the integration of blended learning to foster effective teaching and learning, so as to ensure flexibility and networking opportunities for learners.
2. The school management should ensure the provision of suitable infrastructures that will enable maximum integration of blended learning, so as to reduce the challenges that may hinder its effectiveness.
3. The school administrators should ensure the integration and use of blended learning to foster effective teaching and learning cut across all learners irrespective of their gender and level of study.

References

- Adas, D. & Abu Shmais, W. (2011). Students' perceptions towards blended learning environment using the OCC. *An-Najah University Journal for Research Humanities*, 25(6), 1681-1710.
- Alsalmi, N. R., Al-Qatawneh, S., Eltahir, M., & Aqel, K. (2021). Does blended learning improve the academic achievement of undergraduate students in the mathematics course?: A case study in higher education. *Eurasia Journal of Mathematics Science Technology Education*, 17 (4)
- Armstrong, S. (2008). On higher education and development. Retrieved from <http://www.eastasiaforum.org/2021/08/21/larry-summers-on-higher-education-and-development>.
- Collopy, R. M. B., & Arnold, J. M. (2009). To blend or not to blend: Online and blended learning environments in undergraduate teacher education. *Issues in Teacher Education*, 18(2), 85–101.
- Duhaney, D. C. (2012). Blended learning and teacher preparation programs. *International Journal of Instructional Media*, 39(3), 197–203. Retrieved from <https://sites.newpaltz.edu/ncate/wp-content/uploads/sites/21/2014/06/ExampleDuhaney.pdf>
- Dziuban, C., Hartman, J., Juge, F., Moskal, P., & Sorg, S. (2011). Blended learning enters the mainstream. In C.J. Bonk & C.R.

- Graham (Eds.), *Handbook of blended learning: Global perspectives, local designs*. San Francisco, CA: Pfeiffer.
- Federal Republic of Nigeria (2004). *National Policy on Education*, NERDC Press, Yaba-Lagos, Nigeria.
- Garnham, C., Vaughan, N. D. & Kaleta, R. (2013). Introduction to hybrid courses. *Teaching with Technology Today*, 8(6). Retrieved from <http://www.associatedcollegestc.org/coff/COTFX/materials/smeatonHybridCoursesnotes.do>
- Garrison, R. D. (2004). *Blended learning in higher education: Framework, principles, and guidelines*. San Francisco, CA: Jossey-Bass.
- Gedik, N., Kiraz, E., & Ozden, M. Y. (2012). The optimum blend: Affordances and challenges of blended learning for students. *Turkish Online Journal of Qualitative Inquiry*, 3(3), 102-117. Retrieved from <http://dergipark.ulakbim.gov.tr/tojqi>
- Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk and C. R. Graham (Eds.), *The handbook of blended learning: Global perspectives, local designs* (pp. 3-21). San Francisco, CA: Pfeiffer Publishing.
- Jeffrey, L. M., Milne, J., Suddaby, G., & Higgins, A. (2014). Blended learning: How teachers balance the blend of online and classroom components. *Journal of Information Technology Education: Research*, 13, 121–140. Retrieved from www.jite.org/documents/Vol13/JITEv13ResearchP121-140Jeffrey0460.Pdf
- Kang, J. J. (2014). Learning to teach a blended course in a teacher preparation program. *Contemporary Issues in Technology and Teacher Education*, 14(1), 54–71. Retrieved from <http://www.editlib.org/p/39368>
- Latchem, C. & Jung, I. (2010). *Distance and blended learning in Asia*. New York, NY: Routledge.
- López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & Education*, 56(3), 818-826. doi:10.1016/j.compedu.2010.10.023
- Mato, G. (2013), *Education, social background and cognitive ability*, Routledge, <https://www.routledge.com/Education-Social-Background-and-Cognitive-Ability-The-decline-ofthe/Marks/p/book/9780415842464>.
- Mirriahi, N., & Alonzo, D. (2015). Blended Learning Innovations: Leadership and Change in One Institution, *International Journal*

- of Education and Development using ICT (IJEDICT), 11, 4 - 16, Retrieved from <http://ijedict.dec.uwi.edu/viewissue.php?id=41>
- Miyaji, I. & Fukui, H. (2020). Change in knowledge and awareness in teacher education on Satoyama environmental learning: through a blend of learning spaces, methods and media. *European Journal of Educational Research*, 9 (4), 1663 – 1674.
- Mozelius, P., & Rydell, C. (2017). Problems affecting successful implementation of blended learning in higher education: The teacher perspective. *International Journal of Information and Communication Technologies in Education*, 6(1), 4 – 13. doi:10.1515/ijicte-2017-0001
- Nakamura, Y., Yoshitomi, K., Kawazoe, M., Fukui, T., Shirai, S., & Nakahara, T. (2018). Effective use of math e-learning with questions specification. In J. Silverman, V. Hoyos (Eds.), *Distance Learning, E-Learning and Blended Learning in Mathematics Education*. ICME-13 Monographs, Springer, Cham., 133 - 148.
- Olaniyan, D. A., & Obadara, O. E. (2008). A critical review of management of primary education in Nigeria. *International Journal of Africa & African American studies*, VII(I). Retrieved from <https://ojs.siver.edu/ojs/index.php/ijaaas/article/view>
- Poon, J. (2013). An examination of the critical factors for developing a successful blended learning teaching method for RICS and CIOB accredited courses. Paper presented at the RICS Foundation Construction and Building Research Conference (COBRA 2013), Paris, France.
- Sen, A. (2010). Primary schooling in West Bengal. *Prospects quarterly review of comparative education*, 155(3), 311-320. <http://dx.doi.org/10.1007/s11125-010-9164-4>
- Sun, J. (2016). Multi-dimensional alignment between online instruction and course technology: a learner-centered perspective. *Computer Education*, 101, 102 - 114.
- The University of Central Florida. (2015). benefits of blended learning, Available at <http://blended.online.ucf.edu/about/benefits-of-blended-learning/>
- Tshabalala, M., Ndeya-Ndereya, C., & Merwe, T. V. (2014). Implementing Blended Learning at a Developing University: Obstacles in the way. *The Electronic Journal of e-Learning*, 12(1), 101-110. Retrieved from www.ejel.org.
- Umoh, G. G. (2006). *Path to Quantitative Education: A Standard Book for Students, Teachers and Educational Administrators*. Uyo: Inela Ventures and Publishers.

- Umoh, J. B. & Akpan, E. T. (2014). Challenges of Blended E-learning tools in mathematics: Students Perspectives University of Uyo. *Journal of Education and Learning*, 3(4), 60 – 70.
- Wang, M., (2011). The impact of mobile learning on students' learning behaviours and performance: Report from a large blended classroom. *British Journal of Educational Technology*, 40(4), 673-695. doi:10.1111/j.1467-8535.2008.00846.x
- Yusoff, S., Yusoff, R., & Noh, N.H.M. (2017). *Blended Learning Approach for Less Proficient Students*. SAGE Open (2017).

FORMATIVE ASSESSMENT – AN OBJECTIVE IN UNIVERSITY EDUCATION

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Abstract: *The quality of assessment in university education depends, to a considerable extent, on the professional training of teachers in the creation of a system of practical-applicative strategies in formative assessment, which is a valuable tool for adapting and adjusting the teaching-learning process. Recently, formative assessment research has gained considerable momentum. In the context of post-modern education, assessment is expanding its scope, moving beyond the end of the learning process and actively integrating into it. Thus, the student becomes an active participant in the learning and assessment process, taking on the role of an actor in his or her own learning. Based on learning, formative assessment plays an essential role in university education through authentic feedback between teachers and students. Formative assessment thus has two essential functions: on the one hand, it helps to correct the teaching process in order to reduce the difficulties encountered by students and, on the other hand, it allows the teaching-learning process to be adjusted.*

Key words: *assessment; formative assessment; students; university education.*

Introduction

The praxiological dictionary of pedagogy describes the concept of evaluation as "the complex action of collecting a set of relevant, valid and reliable information about the relevance and value of processes, performances, competences, educational or didactic behaviors and examining the degree of adequacy between this set of information and a set of criteria established in correspondence with the objectives pursued and set in advance. Evaluation implies the realization of evaluative processes, is carried out in accordance with specific evaluative strategies and by means of appropriate methods, techniques and tools"(Bocos, 2016, p. 127).

Assessment involves the analysis of behavior from qualitative and quantitative perspectives, by making value judgments about its desirability and compatibility with the set objectives. It provides the

necessary information for the adjustment and self-adjustment of the didactic process between stages, by applying appropriate measures adapted to the educational context (Ionescu, 2000).

This is the final stage in a series of pedagogical approaches, which includes the design and realization of objectives through specific activities, followed by the analysis of the results obtained. It is not a separate activity from the teaching-learning process, but an integral part of it (Herlo, 2020).

Based on different interpretations of the term valuation, two levels of meaning can be distinguished:

- a general interpretation, which reflects the broad meaning of the term used in the socio-human sciences, defines evaluation as a process of quantitative, qualitative or value assessment of a phenomenon, a person or a structure, carried out by reference or comparison with an ideal, a norm, a standard or a scale of values and, in general, with a reference system relevant to the object evaluated and the purpose pursued;
- a more specific interpretation, focused on pedagogical meanings, derives from the integration of assessment in the context of the educational process, of the activities carried out by teachers and students, defining the concept of school assessment. In this sense, evaluation is the totality of activities, approaches and methods used to collect information about the quality and quantity of knowledge and skills acquired by pupils or students, in order to assess the levels of performance achieved by them as a result of the teaching and learning process (Voiculescu, 2010).

Student assessment is carried out by the university teacher, who analyzes the acquisition of competences through the prism of quality standards, in accordance with the objectives of the entire educational process. On the basis of this analysis, decisions are taken to improve the process or to reinforce positive aspects. Student evaluation has a direct impact on the evaluation of the teaching staff, and the success achieved contributes significantly to the overall quality of university teaching (Clipa, 2008). Student assessment is one of the most essential aspects of the university educational process, having a significant impact on the formation and development of the skills needed for a future career. It is essential that this assessment is carried out in a professional manner, taking into account the accumulated knowledge and experience in the field of examination and testing methodologies. In order to ensure fairness and quality of assessment, clear criteria, rules and consistently applied procedures must be established. Assessment not only provides students with valuable feedback, but also provides important information to

academic institutions about the quality of teaching and available educational resources (Cucoş, 2005).

Formative assessment is designed to provide immediate pedagogical support and consists of a series of regular interventions designed to check the effectiveness of teaching methods, inform students about their progress and support them in achieving the objectives set. It can be carried out at the beginning of the learning process, to enable the teacher to select activities tailored to the individual needs of the students, but also during the learning process, to identify additional activities to remedy difficulties encountered, thus becoming a diagnostic assessment. Criterion-based formative assessment, which can also be used in the process of student self-assessment, promotes students' active involvement in their own educational development (Tousignant, 1982). This is a continuous process of assessment, consisting of a series of checks carried out periodically, which aims to support the progress of each individual involved in the learning process. It aims to adjust the learning situation or rate of progress in order to introduce appropriate corrections or improvements. Based on an educational vision which rejects the idea of failure, formative assessment has as its main function to describe as accurately as possible the aptitudes of each individual (Scallon, 1988).

Formative assessment functions as a barometer for both teacher and student, being integrated throughout the learning process in small, successive steps. It provides a periodicity that is beneficial to professional training, as it serves to identify strengths and weaknesses in the educational process. By objectively analyzing the causes of success or failure at school, formative assessment facilitates on-the-fly adjustments to educational strategies. Its main aim is to optimize the educational process by interpreting feedback and comparing partial results with the final objectives set. The results of formative assessment are used by both the teacher and the student, each adapting their teaching and learning approaches according to their needs (Baciu, 2010).

In a narrow approach, formative assessment involves establishing and maintaining a meaningful interaction between assessors and the assessed, facilitating better mutual understanding between teachers and students. It also encourages students to develop a realistic self-awareness of their own performance and competences, promoting self-assessment as an effective practice. At the same time, formative assessment helps to reduce the anxiety and fear associated with the assessment process, making it a natural and constructive part of the instructional-educational process. As a deeply formative method, this approach implies a complex and in-depth assessment of students' competences, going beyond the simple observation of their performance and achievements (Herlo, 2020).

Formative assessment of students takes place throughout the academic year and is carried out through various methods, such as knowledge and skills tests, seminar reports, practical laboratory work and projects or applications specific to the field of specialization.

The frequency of this assessment varies depending on several factors, including:

- the number of hours allocated to subjects in the curriculum: subjects with more hours allow for more frequent assessments, while those with fewer hours may have less frequent assessments.
- subject difficulty: subjects perceived as more difficult require more frequent assessments to monitor progress and identify any difficulties.
- complexity of competences: simpler competences are easier to train and assess, perhaps requiring less frequent assessments, as opposed to more complex competences, which require constant monitoring.
- the level of readiness of the groups: better prepared groups may need less frequent assessments than those with significant gaps, where more intensive intervention is needed to support progress.

Thus, the frequency of formative assessments is flexible and needs to be adapted to the particularities of each subject, student group and targeted competences.

It is clear that assessment opportunities are not evenly distributed among teachers and the

pace of marking varies from teacher to teacher. However, it is essential to avoid long breaks between assessments. This is important, among other things, to prevent unpleasant surprises about the level of student performance. If there are long intervals between two assessments and students fail to keep up with the teaching, it becomes much more difficult to fill in or correct any gaps in learning. Adequate continuity and frequency of assessment helps to maintain progress and to quickly identify areas that need adjustment (Baciu, 2010).

One of the key objectives of formative assessment is to accept 'unequal treatment' between students, as emphasized by Allal, Linda, Bain, Daniel and Perrenoud, Philippe. Differentiation of learning and assessment methods becomes an imperative for teachers and practitioners alike. Through formative assessment, student autonomy is strengthened as assessment of individual progress and development is intrinsic, student-centered and largely self-directed.

The teacher plays the role of facilitator, with the task of helping the student to become aware of his or her own development and to develop the capacity for self-evaluation in a relevant and objective way. This

approach leads to the strengthening of self-awareness, one of the most valuable individual traits. More than "self-decision and self-activity," formative assessment aims at growing autonomy and contributes to the progressive development of the student's personality.

In conclusion, formative assessment is primarily characterized by its specific purposes. Its main objective is to monitor students' learning progress, identify gaps and difficulties encountered and adjust learning situations (improvement, adaptation, development) before the results become definitive and can no longer be influenced. From this perspective, initial assessments can be considered as part of formative assessment, as long as the information obtained is used to adjust future learning processes. Also, successive summative assessments can be integrated into the scope of formative assessment when the results of one stage of teaching and learning are used to adjust and improve subsequent stages. Thus, formative assessment becomes an essential tool for optimizing the educational process (Voiculescu, 2010).

Formative assessment can be summarized around five key terms: process, integration, adjustment, interaction and participation.

With reference to the first term, it can be clearly seen that formative assessment, by its continuous nature and objectives, emphasizes the learning process, not the final product (outcome). Of course, the products of learning, such as behaviors, observable performances or work of various kinds, are not neglected; however, they are considered relevant not in isolation, but as indicators of the quality of the processes leading to the achievement of these outcomes by the students.

In this context, Meyer G. refers to "discovering the invisible" as a specific responsibility of formative assessment. It is concerned with internal processes, which are not directly observable, thus involving reconstructing or modeling the mechanisms (reasoning, strategies, procedures) by which the learner arrives at a particular outcome or product (Meyer, 2000).

With regard to the other key terms, it is important to note that formative assessment stands out for its integration into the structure and dynamics of the teaching-learning process. According to Radu I., it is an inseparable component of this unitary process, being itself a continuous process (not just a series of distinct moments), which contributes, through its specific means, to supporting and optimizing teaching and learning (Radu, 2004).

The integrated nature of formative assessment is deeply intertwined with its regulatory function, which it fulfills within the educational process. Allal L. provides an interesting perspective on this function through an interactionist model of assessment (Allal, 1988).

Finally, it is essential to emphasize that a defining feature of formative assessment is the direct involvement of the student in the assessment

process. Also, the development and use of self- evaluation as an integral component of this type of assessment plays a crucial role, contributing to increasing responsibility and awareness of one's own learning path (Voiculescu, 2010)

Formative assessment accompanies educational activity throughout its duration, with the main objective of obtaining information about the discrepancy between the results obtained and the objectives set. It contributes to the improvement of student performance by making it possible to continually reconstruct the teaching-learning process, adjusting it in line with the objectives set.

Assessment is frequent, covering relatively short sequences, which shortens the interval between assessment and implementation of necessary changes. This ensures that the teaching process is fine-tuned. The tests are tailored to the density of the essential content and last approximately 20-30 minutes, supplemented by oral checks carried out in each activity. Formative assessment reduces, to the point of complete elimination, the survey character, giving students a clear picture of the results obtained. Continuous feedback provides both teacher and students with confirmation of progress and performance during the learning process.

The main purpose of formative assessment is to support the continuity of learning by identifying appropriate activities or difficulties to be overcome. The analytical approach gives students the opportunity to highlight diverse skills and develop their creativity. Formative assessment thus becomes an indispensable tool in the educational process, ensuring constant monitoring, constructive feedback and continuous adaptation of learning strategies.

References

- Allal, L., (1988), Assurer la réussite des apprentissages, M. Huberman, Delechaux-Niestle.
- Baciu, S., (2010). Suport metodologic pentru evaluarea academică, [Methodological support for academic evaluation], Asem publishing house, Chişinău.
- Bocoş, M.(coord.).(2016), Dicţionar praxiologic de pedagogie, Volumul II,[Praxiological Dictionary of Pedagogy, volume II], Paralela 45 Publishing House, Piteşti.
- Clipa, C., (2008). Evaluarea în învăţământul universitar, [Assessment in university education], Didactical and pedagogy publishing house R.A., Bucharest.
- Cucoş, C., (coord.). (2005). Educaţia – provocări la început de mileniu Omagiu profesorului Teodor Cozma, [Education - challenges at the beginning of the millennium Homage to Professor Teodor Cozma], Iaşi.

- Herlo, D. (coord.). (2020). Devenire în profesorat, [Becoming in Teaching], Cluj University Press, Cluj-Napoca.
- Ionescu, M., (2000). Demersuri creative în predare și învățare, [Creative approaches in teaching and learning] Cluj University Press, Cluj-Napoca.
- Meyer, G., (2000). De ce și cum evaluăm, [Why and how we assess], Polirom publishing house, Iași.
- Radu, I.T., (2004). Evaluarea în procesul didactic, [Assessment in the Teaching Process], Didactic and Pedagogy publishing house, Bucharest.
- Scallon G., (1988). L'Evaluation Formative des Apprentissages: l'Instrumentation. Presses de l'Universite Laval. Quebec.
- Tousignant, R., (1982). Les principes de la mesure et de l'évaluation des apprentissages. Québec: Edition Préfontaine.
- Voiculescu, F., (coord.). (2010). Ghid metodologic de pedagogie universitară, [Methodological Guide of University Pedagogy], Aeternitas Publishing House, Alba Iulia.

**SCHOOL LOCATIONS AND GENDER MODERATED
VARIABLES ON TEACHERS' QUALITY AS PREDICTOR OF
SENIOR SECONDARY SCHOOL SCIENCE STUDENTS'
ACADEMIC ACHIEVEMENT**

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Abstract: *Following the potentially informing educational policy and practices across the globe, this study investigated school locations and gender moderated variables on teachers' quality as predictor of senior secondary school science students' academic achievement. Two research questions guided the study while two hypotheses were tested at 0.05 alpha level. The correlation survey design was adopted. The population of the study comprised 2720 senior secondary two (SS 2) students offering science subjects in all the public secondary schools in Onitsha Education Zone. A Sample size of 408 SS 2 science students offering biology, chemistry, data processing, physics and mathematics in the Education Zone was drawn using multistage procedure. Students Rating of Teachers' Quality (SRTQ), and the achievement scores which was obtained from biology, chemistry, data processing, physics and mathematics teachers' grade book for 2023/2024 academic session from the sampled schools were used as instruments for data collection. The instruments were validated by three experts from Nnamdi Azikiwe University, Awka. The reliability of SRTQ was established using Cronbach alpha method. The reliability coefficients of SRTQ was found to be 0.71. Both SRTQ and the academic achievement scores of senior secondary school science students offering biology, chemistry, data processing, physics*

and mathematics were used as a method for data collection. Coefficient R and R² were used to answer research question while regression ANOVA (linear and multiple) were used to test the hypotheses. The findings from the results revealed that low positive predictive value exist between teachers' quality and academic achievement in science subjects among urban and rural based senior secondary school students. However, teachers' quality is not a significant predictor of the academic achievement of urban and rural secondary school students in science subjects. Low positive predictive value exist between teachers' quality and academic achievement of male and female senior secondary school students in science subjects. However, teachers' quality is not a significant predictor of the academic achievement of male and female senior secondary school students in science subjects. From the findings it was recommended that senior secondary school science teachers should endeavour to indicate other factors that can influence students' achievement in senior secondary school subjects more significantly than teachers' quality irrespective of students' gender and school base. Base on the recommendation conclusions were made.

Key words: *senior secondary school science; teachers' quality; school location and gender.*

Introduction

Senior secondary school science students are typically adolescents in the final years of high school, focusing on scientific disciplines like biology, chemistry, computer, data processing, geography, mathematics and physics. They prepare for higher education or vocational training, developing critical thinking and practical skills necessary for future careers in science, technology, engineering, or related fields (Abumchukwu et al., 2024).

Senior secondary school is crucial for building a strong foundation for higher education and future careers in scientific fields especially among science students. Senior secondary school science students typically enhance their analytical and critical thinking skills through experiments and problem-solving activities. Additionally, they're encouraged to engage in scientific inquiry and participate in projects, fostering creativity and collaboration (Abumchukwu et al., 2024). But despite that senior secondary school is crucial for building a strong foundation for higher education and future careers in scientific fields among students there are still reports of weakness and fluctuating achievement among senior secondary school students in science subjects as reported by West

African Examination Council (WAEC) Chief Examiner's Report in recent years. Report has it that there has been a fluctuating academic achievement in grade level of C6 – A1 in West African Examination Council (WAEC) organized examination in senior secondary school science subjects like biology, chemistry, computer, data processing, geography, mathematics and physics in Nigeria. What could be the causes of the weakness and fluctuations in academic achievement in these senior secondary school science subjects?

Some scholars believe that what may be one of the causes of senior secondary school students' weaknesses and fluctuation in academic achievement in West African Examination Council and National Examination council organized examination is teachers' quality (Assem et al., 2023; Emoeffe & Achufusi-Aka, 2022). According to Smith et. al. (2021) teachers' quality is possessing a unique blend of qualities that inspire and empower students. Teachers' quality includes effective communication, empathy, and patience which help are vital for understanding diverse learning needs not minding the nature of school and school location.

School location refers to the specific geographical context in which a school is situated, such as whether it is in a rural or urban environment. It encompasses considerations of the community, including proximity to students' homes, which can influence access to education. For example, guidelines may suggest that schools should ideally be located within a certain distance from children's homes. Some authors believed that distance can be used to determined school location with respect to individual students (Obiorah, et al., 2021). Obiorah et. al. (2021) further averred that if a child can work up to three kilometre and beyond, that is an indication that the school is situated at urban or rural location to the student. While Unimna, et. al. (2019) was of the opinion that school location can not only be identified base on distance but including the nature of the facilities in the school and quality of teachers in those schools also known as teacher quality. No wonder Smith et. al. (2021) observed a high predictive value between teachers' quality and academic achievement of mathematics students in city town but observed a low predictive value between teachers' quality and academic achievement of mathematics students in nob city town. Similarly, Awodun and Oyeniyi (2018) reported no statistically significant difference in the academic achievement mean scores of students in the urban school areas and also no statistical significant difference in the academic achievement mean scores of male and female students in the rural school areas?

However, Okoye and Onwuachu (2018) observed that cognitive styles and school location had a significant influence on students' interest mean achievement in biology in the use of Social Cognitive Theory (SCT) which the authors explains that the low positive correlation

between teachers' quality and academic achievement among urban and rural secondary school students is due to perceived self-efficacy, environmental contexts and gender identity.

Gender identity is a deeply personal aspect that may align with a person's sex assigned at birth or differ from it, as seen in transgender individuals. The understanding of gender has evolved, recognizing that it exists beyond a binary system and can include non-binary and gender queer identities. Gender influence teacher quality through biases and expectations, affecting how teachers perceive and interact with students (Unimna, et al., 2019). For instance, male and female teachers may employ different teaching styles, impacting student engagement and motivation. This could be the reason Social Cognitive Theory SCT suggests that positive role models can enhance self-efficacy and academic performance. Thus, diverse teacher representation is important, as quality educators of varying genders can inspire students, foster equitable learning environments, and promote resilience and aspiration across gender identities. While Samuelsson and Samuelsson, (2016) reported that boys feel that they have an influence over the content and are more involved during the lesson than girls. That is why there is a high predictive value between teacher quality and boys' academic achievement in mathematics as against low predictive value in girls but there is no significant difference when moderated by both genders (Samuelsson & Samuelsson, 2016).

From the conceptual and the theory from the literature reviewed so far, it could be noticed that the issues of school location and gender issues as regards to teachers' quality is rare. Also, the issue of general academic achievement of senior secondary school students in science subjects is something is seriously missing. Having in mind that senior secondary school science subjects is crucial for building a strong foundation for higher education and future careers in scientific fields. Meaning, if there is growth in senior secondary school science subjects there will be growth in careers in science field but there is decline, reverse will be the case. It is against this backdrop that the researchers investigated school locations and gender moderated variables on teachers' quality as predictor of senior secondary school science students' academic achievement in Onitsha Education zone of Anambra State.

Purpose of the Study

The purpose of the study was to investigate:

1. Teachers' quality as a predictor of academic achievement in senior secondary school science subjects among urban and rural based schools.

2. Teachers' quality as a predictor of academic achievement of male and female senior secondary school science students.

Research Questions

The following research questions guided the study:

1. To what extent does teachers' quality predict academic achievement in science subjects in urban and rural based senior secondary school?
2. To what extent does teachers' quality predict academic achievement of male and female senior secondary school science students?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

1. Teachers' quality is not a significant predictor of the academic achievement of urban and rural based senior secondary school students in science subjects.
2. Teachers' quality is not a significant predictor of the academic achievement of male and female senior secondary school students in science subjects

Method

This study adopted the predictive correlation design. The area of the study was Onitsha Education Zone of Anambra State. The population of the study comprised of 2720 Senior Secondary two (SS2) science students in public secondary schools in Anambra state were used. The sample size for the study consisted of 408 SS2 senior secondary school science students in Onitsha Education Zone of Anambra state.

According to Nworgu in Abumchukwu (2023), a sample size of about 15% to 50% of the population depending on the population size is adequate for survey research. Thus, 15% of total population (2720) is 408 was used for the study due to the targeted population (co-education schools). Multistage sampling procedure involving different techniques were used in the study.

First using purposive sampling technique, the local government were drawn according to locations (urban and rural). Onitsha North and Onitsha South local governments' area were drawn as urban location while Ogbaru local government area was drawn as rural location. Secondly using stratified random sampling, co-educational government own schools were drawn reason was to ensure equal representation of male and female students because gender is a variable under consideration in this study as one of the moderating variables.

Finally, using proportionate sampling technique, four co-educational schools each were drawn from each of the local government that comprised Onitsha Education Zone making it a total of twelve schools.

Reasons were to ensure equal number of school representation in these local government that made up the education zone and also to ensure that sample reflected population proportions.

Instrument

The instruments for data collection are Students Rating of Teachers' Quality (SRTQ) and average termly biology, chemistry, data processing, physics and mathematics scores from teachers' grade book for 2023/2024 academic session from the sampled schools. Students Rating of Teachers' Quality (SRTQ), was adapted from Students' Rating: Is it a Measure of an Effective Teaching or Best Gauge of Learning? by Shihab Jimaa (2013). It consists of nine (9) clusters namely; learning, enthusiasm, organization, group interaction, individual rapport, breadth, examinations, assignments and overall. It also has reliability coefficient of 0.9. The following adaptations were made in SRTQ. Section A elicits information like school name, gender and school location from the respondents. Section B elicit responses from the respondents on teachers' quality assessment. Out of the nine (9) clusters from Students' Rating: Is it a Measure of an Effective Teaching or Best Gauge of Learning? by Shihab Jimaa (2013), six (6) was structured and used. The six (6) clusters were chosen because of diverse representation of teaching quality in those clusters. Four-point scale response format was used which ranging from very low extent (1 point), low extent (2 point), high extent (3 point) and very high extent (4 point). The reliability coefficient of the questionnaires was established by administering each of the questionnaires once on 50 SS2 senior secondary science students randomly selected from a Community Secondary School at Nawfia in Awka Education Zone, Anambra State. The school is outside the area of the study. Cronbach's alpha technique was used to determine the internal consistency of items in the instruments. Thereafter, set of scores for each respondent were coded for computer analysis using SPSS. The result of the analysis shows that Students Rating of Teachers' Quality (SRTQ) yielded a Cronbach alpha coefficient of 0.71.

The achievement scores were obtained from biology, chemistry, data processing, physics and mathematics teachers' grade book for 2023/2024 academic session from the sampled schools. The average scores from the teachers' grade book were used as the achievement test. The results specified the students' achievement and was confirmed and validated by experts from the zone and the head of biology, chemistry, data processing, physics and mathematics subjects in the sampled schools.

Results

Research Question 1: To what extent does teachers' quality predict

academic achievement in science subjects in urban and rural based senior secondary school?

Model Error	Decision	N	R	R ²	Adjusted R ²	Std.
Teachers' Quality						
Academic Achievement						
Urban		257	.019	.011		
	low				0.011	
	41.6645	Correlation				
Rural		151	.009	.010		

Table 1: Regression Analysis of the Predictive Value of Teachers' Quality and Senior Secondary School Students Academic Achievement in Science Subjects as Moderated by School Based
 a. Predictors: (Constant), School Based Response on Teacher Quality

The result in Table 1 shows predictive value of teachers' quality and senior secondary school students' academic achievement in science subject as moderated by school based. It reveals that correlation coefficient R between teacher's quality and urban based senior secondary students' academic achievement in science subjects is 0.019 indicating a low positive predictive value with associated coefficient of determination R² in urban based school as 0.011. The coefficient of determination (0.011) also known as the predictive value means that 1.1% of urban based school students' response on their teachers' quality accounted for the variation in academic achievement in senior secondary school science subject. This is an indication that 98.9% of variation in urban based school students' academic achievement in senior secondary school science subject is attributed to other factors other than their teachers' quality. This shows that improvement in teachers' quality would lead to small increase in both urban and rural based school students' academic achievement in senior secondary school science subject. Also, in the same Table 1 shows predictive value of teachers' quality and senior secondary school students' academic achievement in science subjects as moderated by school based. The correlation

coefficient R between teacher's quality and rural based students' academic achievement in senior secondary school science subjects is 0.009 indicating a low positive predictive value with associated coefficient of determination R^2 among rural students as 0.010. The coefficient of determination (0.010) also known as the predictive value means that 1.0% of rural students' response on their teachers' quality accounted for the variation in academic achievement in senior secondary school science subjects. This is an indication that 99% of variation in rural based students' academic achievement in senior secondary school science subjects is attributed to other factors other than their response in teachers' quality. This shows that improvement in teachers' quality would lead to small increase in both urban and rural based school students' academic achievement in senior secondary school science subjects.

Research Question 2: To what extent does teachers' quality predict academic achievement of male and female senior secondary school science students?

Model	N	R	R^2	Adjusted R^2	Std. Error
Decision					
Teachers' Quality					
Academic Achievement					
Male	133	.004	.010		
low				.0083	
				42.67444	
				correlation	
Female	275	.027	.011		

a. Predictors: (Constant), Gender Response on Teacher Quality

Table 2: Regression Analysis of the Predictive Value of Teachers' Quality and Senior Secondary School Students Academic Achievement in Science Subjects as Moderated by Gender

The result in Table 2 shows predictive value of teachers' quality and senior secondary school students' academic achievement in science subjects as moderated by gender. It reveals that correlation coefficient R between teacher's quality and male students' academic achievement in senior secondary school science subjects is 0.04 indicating a low positive predictive value with associated coefficient of determination R^2 in male as 0.010. The coefficient of determination (0.010) also known as the predictive value means that 1.0% of male students' response on their teachers' quality accounted for the variation in academic achievement of male students in senior secondary school science subjects. This is an indication that 99% of variation in male students' academic achievement in senior secondary school science subjects is attributed to other factors other than their teachers' quality. This shows that improvement in teachers' quality would lead to small increase in both male and female students' academic achievement in senior secondary school science subjects. Also, in Table 2 shows correlation coefficient R between teacher's quality and female students' academic achievement in senior secondary school science subjects is 0.027 indicating a low positive predictive value with associated coefficient of determination R^2 in female students as 0.011. The coefficient of determination (0.011) also known as the predictive value means that 1.1% of female students' response on their teachers' quality accounted for the variation in academic achievement in senior secondary school science subjects. This is an indication that 98.9% of variation in female students' academic achievement in senior secondary school science subjects is attributed to other factors other than their response in teachers' quality. This shows that improvement in teachers' quality would lead to small increase in both male and female students' academic achievement in senior secondary school science subjects.

Hypothesis 1: Teachers' quality is not a significant predictor of the academic achievement of urban and rural based senior secondary school students in science subjects.

Table 3 reveals regression ANOVA analysis of predictive significant of teachers' quality and academic achievement of urban and rural senior secondary school students in science subjects. The results show no significant difference $F(1, 404) = .390, p = .760 > .05$ indicating that teachers' quality is not a significant predictor of the academic achievement of urban and rural senior secondary school students in science subjects. The inference drawn was that teachers' quality is not a significant predictor of the academic achievement of urban and rural senior secondary school students in science subjects.

Model	Mean		Squares	Df	Sum of	
	F	Sig			Square	Square
Regression		515.740	3	171.913	.390	.760 ^b
Residual		178087.591	404	440.811		
Total		178603.331	407			

a. Dependent Variable: Achievement

b. Predictors: (Constant), Teacher's quality, School Based

Table 3: Regression ANOVA Analysis of Predictive Significant of Teachers' Quality and Academic Achievement of Senior Secondary School Students in Science Subjects as Moderated by School Based

Hypothesis 2: Teachers' quality is not a significant predictor of the academic achievement of male and female senior secondary school students in science subjects

Model	Mean		Squares	Df	Sum of	
	F	Sig			Square	Square
Regression		587.059	3	195.686	.444	.722 ^b
Residual		178016.272	404	440.634		
Total		178603.331	407			

a. Dependent Variable: Achievement

b. Predictors: (Constant), Teacher's Quality, Gender

Table 4: Regression ANOVA Analysis of Predictive Significant of Teachers' Quality and Academic Achievement of Senior Secondary

School Students in Science Subjects as Moderated by Gender

Table 4 reveals regression ANOVA analysis of predictive significant of teachers' quality and academic achievement of male and female senior secondary school students in science subjects. The results show no significant difference $F(1, 404) = .444, p = .722 > .05$ indicating that teachers' quality is not a significant predictor of the academic achievement of male and female secondary school students in science subjects. The inference drawn was that teachers' quality is not a significant predictor of the academic achievement of male and female secondary school students in science subjects.

Discussion of Findings

1. Influence of teachers' quality on senior secondary school students' academic achievement in science subjects as moderated by school location
2. Influence of teachers' quality on senior secondary school students' academic achievement in science subjects as moderated by gender.

Influence of Teachers' Quality on Senior Secondary School Students Academic Achievement in Science Subjects as Moderated by School Location

The findings of the study in Table 1 reveal a low positive predictive value exist between teachers' quality and academic achievement in science subjects among urban and rural based senior secondary school students. However, teachers' quality is not a significant predictor of the academic achievement of urban and rural secondary school students in science subjects in Table 3. The finding is in conformity with Social Cognitive Theory (SCT) which explains that the low positive correlation between teachers' quality and academic achievement among urban and rural secondary school students is due to perceived self-efficacy and environmental contexts.

The finding is also in line with Awodun and Oyeniya (2018) who found no statistically significant difference in the academic achievement mean scores of students in the urban school areas and also no statistically significant difference in the academic achievement means scores of male and female students in the rural school areas. The finding is not in conformity with Smith et.al. (2021) who observed a high predictive value between teachers' quality and academic achievement of mathematics students in city towns but observed a low predictive value between teachers' quality and academic achievement of mathematics students in non-city towns but not in conformity with Okoye and Onwuachu (2018) who observed that cognitive styles and school location had a significant influence on students' interest mean

achievement in biology. The lack of significant predictive power of teachers' quality on urban and rural senior secondary school students' academic achievement in science subjects may be attributed to various factors. For example, in both urban and rural contexts, socioeconomic disparities impact the effectiveness of quality teaching. For instance, teachers might face challenges like inadequate resources, isolation, and varying responsiveness to students' needs, influencing their teaching capabilities and undermining their potential impact on student achievement. By virtue of this finding, this research has joined the school of thought that observed that teachers' quality is not a significant predictor of the academic achievement of urban and rural senior secondary school students in science subject.

Influence of Teachers' Quality on Senior Secondary School Students Academic Achievement in Science Subjects as Moderated by Gender.

The findings of the study in Table 2 shows low positive correlation exist between teachers' quality and academic achievement of male and female senior secondary school students in science subjects. However, teachers' quality is not a significant predictor of the academic achievement of male and female senior secondary school students in science subjects in Table 4. The findings in consonance with Social Cognitive Theory (SCT) which explained low positive predictive value between teachers' quality and academic achievement by suggesting that various factors influence learning. Examples factors like students' self-efficacy, environmental context, and peer interactions significantly impact academic outcomes, often overshadowing teacher quality in male and female secondary students.

However, the finding of the study is not in line with Samuelsson and Samuelsson (2016) who observed a high predictive value between teacher quality and boys' academic achievement in mathematics as against low predictive value in girls but in line with assertion that there is no significant difference when moderated by both genders. Also, the finding is not in line with Yakubu (2021) who observed that significant difference exists between the performance of male and female students and that male students performed better than female students in physics. The reason teachers' quality not significantly predict the academic achievement of senior secondary school students in science subjects as observed in the study could be due to factors like the lack of practical application in teaching, students' pre-existing misconceptions, and educational environments that lack resources. Also, external influences may often overshadow teacher quality, affecting student outcomes. By virtue of this finding, this research has joined the school of thought that observed that teachers' quality is not a significant predictor of the

academic achievement of male and female senior secondary school students in science subject.

Recommendations

Based on the findings it was recommendations that senior secondary school science teachers should endeavor to indicate other factors that can influence students' achievement in senior secondary school subjects more significantly than teachers' quality irrespective of students' gender and school base.

Conclusion

It was generally concluded that low positive predictive value exists between teachers' quality and academic achievement in senior secondary school science subject among urban and rural based secondary school students. Thus, teachers' quality is not a significant predictor of the academic achievement of urban and rural secondary school students in senior secondary school science subjects.

In addition, a low positive predictive value exists between teachers' quality and academic achievement of male and female senior secondary school students in science subjects. Thus, teachers' quality is not a significant predictor of the academic achievement of male and female senior secondary school students in science subjects.

References

- Abumchukwu, A.A. (2023). Social learning environment and problem-solving skills as correlates of secondary school students' attitude and performance in chemistry. [Unpublished Ph.D dissertation Department of Science Education Nnamdi Azikiwe University, Awka]
- Abumchukwu, A.A., Obikezie, M.C., Ekoyo, D.O., Enebechi, R.I., Amobi, U. V., Mbaegbu, C. S., Akachukwu, E.E., & Uche, E. D. (2024). Social learning environment and problem-solving techniques on students' performance in senior secondary school science: Do gender moderate the correlation? *Webology*, 21(2), 240-256. <http://www.webology.org>.
- Assem, H. D., Nartey, L., Appiah, E., & Aidoo, J. K. (2023). A review of students' academic performance in physics: attitude, instructional methods, misconceptions and teachers qualification. *European Journal of Education and Pedagogy*, 4(1), 84-92.
- Awodun, A. O., & Oyeniyi, A. D. (2018). Influence of school location 'on students' academic achievement in junior secondary school basic science in Ekiti State, Nigeria. *Journal of Education*, 3(2), 22-31. [http:// www.jetir.org](http://www.jetir.org).

- Emoefe, S. O., & Achufusi-Aka, N. N. (2022). Effect of sequential usage of three teaching methods on students' academic achievement in physics in delta state. *South Eastern Journal of Research and Sustainable Development (SEJRSD)*, 7(1), 43-66.
- Obiorah, J. N., Eneogu, N. D., Nji, I. A., Ezeocha, I. G., Ezinne, O., Idika, F. E., & Chibuzo, A. D. (2021). Path analysis of the influence of students' variables and school location on students' academic achievement in economics. *International Journal of Psychosocial Rehabilitation*, 25(2), 1-7.
- Okoye, P. O., & Onwuachu, W. C. (2018). Influence of Cognitive Styles and School Location on Academic Achievement of Students Interest in Biology. *Journal of Scientific Research*, 4(1), 1-8.
- Samuelsson, M., & Samuelsson, J. (2016). Gender differences in boys' and girls' perception of teaching and learning mathematics. *Open Review of Educational Research*, 3(1), 18–34. <https://doi.org/10.1080/23265507.2015.1127770>
- Smith, T. J., Walker, D. A., Hsu, W. Y., Lu, Y. Y., Hong, Z. R., & McKenna, C. M. (2021). Teacher characteristics as predictors of mathematics attitude and perceptions of engaged teaching among 12th grade advanced mathematics students in the U.S. *Education Inquiry*, 13(3), 338–353. <https://doi.org/10.1080/20004508.2021.1883910>
- Unimna, F. A., Unimke, S. A., & Opoh, F. A. (2019). School location, teaching facilities and academic achievement of jss 3 students in social studies in Cross River State, Nigeria. *Ambit Journal of Educational Research and Reviews*, 2(3), 30-61.

VIRTUAL REALITY AS AN EDUCATIONAL TOOL IN EXTRACURRICULAR ACTIVITIES

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Abstract: *The amalgam of contemporary educational challenges, combined with the specificity of today's learners, requires constant adaptation to innovative methods to meet their needs. Today's generation, often referred to as "digital natives," requires personalized learning, based on a variety of modern methods that stimulate their curiosity, develop their ability to adapt quickly and, last, but not least, keep them motivated to learn. With traditional methods becoming less and less appealing to these learners, the future of education needs to be reconsidered by integrating interactive approaches and innovative technologies. While specific formal curriculum activities can condition or limit the use of technologies that create the premises for enjoyable and interactive educational experiences, extracurricular activities are the appropriate space to explore the use of technology in general, and in relation to the topic of the article specifically, Virtual Reality. The use of virtual reality (VR) as an educational tool in extracurricular activities offers a transformative approach to student development, providing immersive, interactive and practical learning opportunities. This article explores the benefits and limitations of integrating VR into extracurricular activities, providing recommendations and examples for effective implementation of this technology.*

Key words: *virtual reality; educational tool; extracurricular activities; innovation; immersive learning.*

Introduction

Today's society is undergoing an accelerated structural transformation, with technology as a determining factor in all areas. This digital dimension can also be found in the school environment, with a significant increase after the Covid-19 pandemic. Despite the fact that the critical moment of the pandemic has come to reinforce the necessity and usefulness of technology in education, a large proportion of teachers still actively show reticence towards technological means and

educational methods based on them. This reticence is based on emphasizing the potential risks of digital education in relation to its benefits (Ceobanu et.al., 2020, p.99).

Without ignoring the risks and limitations of contemporary digital education, we cannot design an education of the future without being able to operate with current technological tools. One of these tools that can add value to the educational process is virtual reality.

The concept of virtual reality, introduced in 1987 by Jaron Lanier, can be defined in both a broad and a narrow sense. In the broad sense, virtual reality refers to any form of digital information generated and perceived using technological tools. In the narrow sense, virtual reality is an artificial reality that simulates the external environment, allowing the user to perceive and interact with it through multiple sensory channels. This is achieved with specialized devices, providing an immersive experience comparable to interaction in physical reality.(David et al. 2015.p. 37).

Cruz Neira et al. (1992) describe the main devices used for visualizing and interacting with virtual environments explaining how such devices contribute to the user's perception of and immersive interaction with the generated virtual environment. Among these devices are the virtual reality headset (HMD), the 'cave-like' device (CAVE), as well as various interaction tools such as motion tracking systems, joysticks or devices equipped with haptic sensors such as haptic gloves.

Another frequently used concept in technology, closely related to virtual reality, is augmented reality. Although both technologies are based on creating a captivating and immersive experience, there are considerable differences between them. Virtual reality involves the complete immersion of the user in a digital environment, achieved through a dedicated device, such as a VR headset, which isolates the individual from the real world. In contrast, augmented reality is the superimposition of digital elements, such as three-dimensional objects or virtual information, on top of the existing physical environment, using conventional screens and specific applications with augmented reality (AR) functionality.

Virtual Reality in Education

Virtual Reality (VR) is a versatile digital tool with significant applications in various sectors including education, health, science and technology. In education, VR is an innovative strategy, helping to modernize educational processes by creating interactive and immersive experiences that facilitate active learning. It enables the development of engaging courses that support the understanding of concepts through hands-on simulations and 3D explorations, thus stimulating engagement and reinforcing knowledge.

In a digital age, the children of this generation are already familiar with technology, and the integration of VR in education responds to the need to prepare future generations for an increasingly technologized professional environment. Especially at young ages, VR adds to experiential learning, stimulating curiosity and cognitive development through immersive environments that join play and exploration. Thus, technology transforms learning into an engaging process, fostering both emotional engagement and the acquisition of academic skills in an effective way adapted to the educational needs of the 21st century.

The benefits of immersive learning

Immersive learning, by its specificity as an advanced educational methodology, fulfills the necessary conditions to prepare all categories of learners effectively to face the complex challenges of the present and the future.

In POC project "EDUVR-Apps: Application for generating interactive multimedia courses using virtual and augmented reality" (2017-2019), a research on the current state of the art of virtual reality (VR) and augmented reality (AR) technologies was conducted, aiming to identify optimal solutions for the development of an application framework. The same research reveals the main benefits that learners can gain from immersive learning.

Among the benefits of learning in immersive environments for pre-school and school children we identify the following:

Communication Skills Development - Each component of the early learning process is supported by quality educational experiences that promote fundamental language skills such as speaking and listening. These skills initially manifest themselves through the expression of basic needs and progress to more complex forms of communication such as creative storytelling. The optimal way to develop vocabulary and understanding of syntactic structure is based on authentic experiences from the everyday environment, which allow context-specific and applied learning. Within this framework, education benefits significantly from the use of emerging technologies, and virtual reality (VR) is an additional immersive tool that facilitates active and experiential learning. It not only stimulates the cognitive process, but also contributes to the integration of an innovative educational environment adapted to the needs of contemporary learners.

Enhancing real-life experiences - Practical activities, such as visits to zoos or parks, are valuable pedagogical tools, providing concrete opportunities for pre-schoolers to explore and understand key aspects of the environment and real life. These direct experiences stimulate children's natural curiosity and contribute to the development of

knowledge about the living world and ecological relationships. Integrating virtual reality (VR) technologies allows educators to extend the benefits of these activities, reinforcing and extending learning. Through VR, children have the opportunity to interactively relive previously experienced moments, explore details inaccessible during real visits, and better understand complex concepts through engaging and personalized simulations. This approach combines direct sensory experiences with digital exploration, maximizing the educational impact on pre-schoolers' cognitive and social-emotional development.

Creating new educational opportunities - Learning is often influenced by limited access to direct experiences, which makes it difficult to understand abstract concepts or topics. For example, some learners have never had the opportunity to explore an ocean, observe marine ecosystems or visit a large city, which can narrow their perspective on the diversity of the world.

Virtual reality (VR) technology offers an innovative solution to overcome these limitations, enabling teachers to create engaging and interactive educational environments. Using VR applications, students can be immersed in scenarios that simulate the exploration of natural landscapes, metropolitan cities or complex phenomena. This approach stimulates natural curiosity, encourages exploratory thinking and challenges the imagination, giving students the opportunity to grasp concepts that they would otherwise perceive only theoretically.

In addition, VR can facilitate experiential learning by creating detailed and personalized virtual contexts that support the development of a deep and multidimensional understanding of the topics explored. This contributes to reducing educational disparities and broadening the cognitive horizons of learners, regardless of their background.

Contextualized learning- is an essential approach to increasing and reinforcing knowledge by creating authentic and relevant educational settings. While traditional methods provide a solid theoretical foundation, they can be limited in fostering deep understanding and an emotional connection with the subject.

Virtual reality (VR) technologies add an innovative dimension to the educational process by providing immersive environments that recreate real or imagined experiences. For example, simulating an exploration on the Moon, with the possibility to observe the Earth from space, transforms abstract learning into an interactive and memorable experience.

This approach integrates theory with sensory exploration, fostering both conceptual understanding and practical application of knowledge, and encourages curiosity and critical thinking, contributing to a holistic and innovative education.

Improving the process of memorization - Virtual Reality (VR) offers an effective educational tool, enhancing memory through personal and interactive experiences. The deep sensory and emotional involvement characteristic of immersive environments improves long-term retention, making it easier to recall information than traditional methods. This approach is particularly useful for learners with concentration difficulties, providing them with an engaging learning environment tailored to their needs. Integrating VR into education stimulates both memorization and cognitive and emotional engagement, contributing to innovative and effective learning.

Support for special needs students - Virtual Reality (VR) is a valuable educational resource, providing engaging and tailored learning opportunities for students with special needs. Particularly beneficial for children with autism, immersive experiences in 360-degree virtual environments allow them to acquire new knowledge in a safe and controlled environment. They can interact with educational content in a more structured and predictable way, reducing the anxiety associated with learning in a traditional physical environment. In addition, the fact that they can leave the virtual environment at any time, according to their needs and comfort, gives them a sense of security and autonomy, supporting self-paced learning. This approach favors a more effective integration of students with special needs in educational processes, providing them with a flexible and stimulating environment that contributes to their cognitive and emotional development.

Increasing engagement in the learning process - Student engagement is an essential element in successful learning, and virtual reality (VR) is a powerful tool for fostering it. The immersive and interactive environments created by VR capture the attention of learners, especially those in generations that are deeply connected to technology and cannot conceive of life without mobile devices. By using virtual reality, education becomes more engaging and relevant for these young people, who are attracted to innovative technologies. This approach not only stimulates interest but also contributes to an active involvement in the learning process, facilitating a more dynamic and motivating educational experience.

Developing empathy through virtual reality - Another major advantage of using virtual reality (VR) in education is its ability to facilitate the development of empathy among students. VR gives them the opportunity to experience situations from different perspectives, allowing them to gain a deeper understanding of the emotions, challenges and viewpoints of others. This immersion in experiences not their own helps them develop a more empathetic and complex understanding of human diversity. For example, by simulating specific

circumstances, such as living a life experience from the perspective of a person with a disability or an individual from a different culture, students can experience first-hand the realities of others. Thus, this educational approach supports not only the development of cognitive skills, but also the formation of a more sensitive and inclusive social and moral conscience.

Creating and Exploring through Virtual Reality - Virtual Reality (VR) provides active learning opportunities for students, not only through passive experiences, but also through the ability to create their own three-dimensional worlds. This approach allows students to express their creativity and apply learned concepts in a hands-on way by building and customizing virtual environments. Using 3D modeling tools, students can explore and experiment with design and construction processes, stimulating their imagination and critical thinking. This process of creation not only develops their technical and artistic skills, but also encourages them to actively explore and experiment with ideas in a virtual setting. In this way, virtual reality becomes a dynamic and interactive learning environment, where students are not just spectators but creators of their own educational experiences.

Another field in which virtual reality finds relevant application is vocational training, outlining the following favorable contexts:

Work Experience through Virtual Reality - A critical factor in the success of vocational training is the opportunity to expose students to unfamiliar work environments, giving them the chance to experience real-life scenarios before they actually enter the workforce. Virtual Reality (VR) is a valuable tool in this regard, as it allows the recreation of a variety of work environments through 360-degree videos from an employee's perspective. This immersive approach gives students a hands-on experience where they can observe and interact with specific workplace activities without being exposed to real risks or difficulties in an unfamiliar work environment. By integrating VR into vocational training, students can acquire essential competences, develop coping skills and better understand the requirements and dynamics of a job, thus preparing themselves effectively for their future career.

Skills development through vocational training-Effective vocational training involves a balance between theoretical learning and practical skills development, and virtual reality (VR) is a valuable tool in this process. By using VR, learners can rehearse training scenarios in a controlled environment without additional cost or risk, allowing them to hone their skills and build confidence in their own competencies. The repeatability and accessibility of these scenarios contribute to continuous and adaptive learning, supporting not only the development of technical skills, but also critical thinking and decision-making in a professional context. Thus, VR facilitates an active and experiential

approach to vocational training, improving students' preparation for the real challenges of the labor market.

Access to different perspectives through Virtual Reality - Virtual Reality (VR) gives students not only the opportunity to experience situations from the perspective of an experienced employee, but also to put themselves in the role of customers or service recipients, facilitating a deeper understanding of their needs and expectations. Through immersive simulations, students can directly experience the challenges and perspectives of other actors involved in a service process, thus developing empathy skills and understanding of the varied contexts in a professional environment.

This approach helps students acquire a holistic view of interpersonal relationships within a profession, emphasizing the importance of adapting behavior and decisions according to the needs of the client or beneficiary. Through immersive experiences, VR facilitates more effective empathic training, contributing to the development of a client-centered mindset and improving the ability to manage complex interactions in a professional setting.

Extracurricular activities and VR

Extra-curricular activities, conceptualized as complementary educational initiatives designed to support students' multidimensional development along cognitive, emotional, social and physical dimensions, provide a framework for exploring individual interests and developing skills that transcend the traditional teaching of the formal curriculum (Fredricks & Eccles, 2006).

Within this framework, the integration of virtual reality (VR) is emerging as an innovative strategy to enhance the impact of these activities by creating interactive and immersive environments. In this way, VR enables the diversification of extracurricular experiences, adapting them to the varied needs of students and facilitating holistic development in a relevant and technologically relevant way.

Significant advantages of using virtual reality (VR) in extracurricular activities include:

Total Immersion: VR technology allows students to "transport" themselves into varied educational environments such as virtual labs, digital museums, or interactive simulations, giving them the opportunity to learn through direct experiences in a deep and engaging way.

Expanded accessibility: VR facilitates access for students to educational activities that, for financial or logistical reasons, would traditionally be inaccessible. The technology thus reduces barriers to access, allowing students to participate in complex educational experiences regardless of external constraints.

Promoting collaboration: By creating interactive virtual environments,

VR supports the organization of group activities, stimulating interaction between learners and the development of teamwork, communication and problem-solving skills in a collaborative setting, without depending on physical proximity.

Examples of extracurricular activities based on virtual reality(VR):

Cultural education: immersive experiences that allow students to participate in virtual tours of famous museums, historical sites or cultural locations of global interest. These activities facilitate the exploration of cultural heritage in an accessible and interactive way, promoting understanding of diversity and historical contexts.

Science and Technology: Virtual laboratories offer the opportunity to conduct complex experiments in a safe and controlled environment. These simulated environments reduce the costs associated with physical equipment and eliminate potential safety risks, while providing an ideal platform for hands-on exploration and learning.

Vocational training: VR applications dedicated to simulating specific work environments such as medical interventions, engineering design or industrial operations. These activities prepare students for different careers by giving them a realistic insight into the requirements and processes involved in different professions.

Art and Creativity: Interactive virtual reality platforms that allow users to create three-dimensional artworks, design digital sculptures or develop innovative virtual environments. These applications stimulate artistic expression and offer new ways of creative experimentation and collaboration.

VR extracurricular activity in Green Week - "Virtual educational experiences - endangered animals"

The activity took place on 23.10.2023-27.10.2023 and was attended by 18 teachers and 218 pupils and pre-schoolers from different educational units: 5 primary classes from Vladimirescu Secondary School, 2 primary classes from Mândruloc Primary School, 5 classes from Horia Secondary School, as well as from Horia PN, Cicir PN and Vladimirescu PN2 Kindergartens.

The activity involved the development of an innovative educational experience using virtual reality (VR) technology to create an engaging and interactive learning environment for pre-school and school children. They had the opportunity to interact with savanna animals (VR ZOO Safari) , as well as marine species (VR Ocean Aquarium 3D), in a highly stimulating and engaging way, facilitating their understanding and approach to the world's diverse fauna and ecology. The virtual experiences were accompanied by detailed educational information and discussion sessions on relevant topics such as pollution and its impact

on the environment, as well as on endangered animals, stimulating awareness of current environmental issues.

In addition to the direct impact on pupils and pre-school children, the activity also played an important role in familiarizing teachers with the potential of virtual reality as a great educational tool that can revolutionize traditional learning methods. In this sense, teachers had the opportunity to experience VR technology and to understand how it can support the learning process, bringing an innovative and interactive dimension to teaching activities.

As a result of this activity, the following aspects were observed:

- Of the 18 participating teachers, none had previously had the opportunity to experience a virtual reality-based learning activity and had no contact with virtual reality glasses, either in the form of testing or direct observation.
- Of the 218 pre-schoolers and pupils involved, only 18 recognized or had heard of virtual reality glasses technology, and 5 of these had already had the opportunity to try out this technology in a previous activity.
- All participating teachers and children gave positive feedback on the activity, considering it an innovative and interesting educational experience.
- Four preschoolers were initially reluctant to use the VR goggles, expressing fear, but after experimenting with them, they expressed their appreciation of the activity.
- Some participants experienced brief episodes of motion sickness, but no significant incidents or long-lasting effects.

Given the success of the activity, it was subsequently implemented in five additional schools within Arad County.

Challenges and limits:

Generally speaking, the main obstacles associated with the implementation of virtual reality (VR) in the educational process include financial issues, which can be a significant barrier due to the high costs of the necessary equipment and software. Also, the effective use of VR technologies requires specialized training of teachers, which entails additional resources in terms of time and investment in training programmes (Kavanagh et.al., 2017).

In addition, accessibility can be a major challenge, as some learners may have difficulties related to technological infrastructure, socio-economic conditions or special needs that are not always integrated into the available solutions.

Conclusions and future perspectives

In conclusion, virtual reality (VR) is emerging as a particularly valuable educational tool, especially in extracurricular activities, offering students unique, immersive and complementary learning opportunities to traditional methods. It is important to emphasize that VR does not aim to replace established and effective teaching methods, but to energize and reinforce them, bringing an interactive and engaging dimension to the educational process. As technology continues to advance, it is expected to become more accessible and efficient, allowing wider integration into diverse educational contexts and opening up new innovative learning opportunities. Future research should aim not only to evaluate the long-term effectiveness of VR use, but also to identify the most appropriate ways of integrating it into curricular subjects so that it directly supports educational objectives. It is also essential to analyze the psychological impact that these immersive experiences can have on students, to ensure that the use of technology is not only educationally beneficial, but also safe and tailored to their needs. These research directions will help to strengthen VR as a valuable ally to traditional methods in developing the future of education.

References

- Ceobanu, C., Cucuș, C., Istrate, O., Pânișoară, I.-O. (2020), *Educația Digitală*, Polirom;
- Cruz-Neira, C., Sandin, D.J, DeFanti, T.A., Kenyon, R.V și Hart, J.C., (1992). The CAVE: Audio visual experience automatic virtual environment. *Communications of the ACM*,6,65-72;
- David, D., Matu,S-A, David, O.,(2015),*Psihologie și tehnologie.Fundamente de roboterapie și psihoterapie prin realitate virtuală*, Polirom;
- Fredricks, J. A., & Eccles, J. S. (2006). Extracurricular involvement and adolescent adjustment: Impact of duration, number of activities, and breadth of participation. *Applied Developmental Science*, 10(3), 132–146;
- Kavanagh, S., Luxton-Reilly, A., Wuensche, B. & Plimmer, B. (2017). A systematic review of Virtual Reality in education. *Themes in Science and Technology Education*, 10(2), 85-119.
- http://edu-vr.ro/eduvr/storage/app/media/EduVR_6.1.1.pdf
- <https://play.google.com/store/apps/details?id=zoo.animals.vr.safari.park.wildlife.experience.virtual.reality.adventure&hl=ro>
- <https://play.google.com/store/apps/details?id=com.sculfa.vroceanaquarium>

IMPACTS OF INDUSTRIAL DISHARMONY ON TERTIARY INSTITUTIONS IN NIGERIA

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Abstract: *The issue of disharmony in Nigerian tertiary institutions has become a significant challenge, affecting academic quality, institutional stability, and national development. This paper examines the various cases and underlying causes of disharmony within Nigerian universities, polytechnics, and colleges of education. Through a critical review of the literature and empirical data, the paper highlights the adverse impacts of disharmony, such as reduced academic productivity, a decline in the quality of graduates, infrastructural decay, and loss of public trust in higher education. The study argues that addressing disharmony requires collaborative efforts between government, management of institutions, staff unions, and students. By promoting inclusivity, strengthening institutional autonomy, and ensuring effective conflict management mechanisms, Nigerian tertiary institutions can foster a more harmonious and productive academic environment.*

Key words: *disharmony; Nigerian tertiary institutions; infrastructural decay.*

Introduction

Nigerian workers prefer security and permanence in their workplaces over actualization and unusual redundancies, which are frequently seen and heard about. They want a good measure of love and interaction with their coworkers; they want to be seen, recognized, and not just heard; they want acceptance and full integration into all aspects of their work. These and other goals can be achieved if employees have adequate knowledge and kept up to date on organizational developments. The

above is obviously lacking due to employers' anti-worker policies, so industrial unrests are frequent visitors to industrial settings. In the words of Nwokocha (2014) and Mojalefa (2021), it is an undeniable fact that where and when workers are deprived of the right to protest against opposing issues as a result of authoritarian and strict employer leadership styles, the result will be resistance, absenteeism, espionage, and sabotage of any effort that appears to subject them inhumanely in the workplace. During this hanging-in-the-balance scenario, the worker's productive capacity is affected, undermining any progressive process in work organizations until the situation normalizes.

Furthermore, all stakeholders, including the government, employers, workers (labor unions), and the environment, share responsibility for establishing and maintaining industrial harmony in the workplace (Odoh & Moluno, 2023). This can only be achieved through the principle of cultural dialogue involving all necessary stakeholders. Interestingly, Mayowa (2015) claims that it is not surprising that in practice, organizational policies fail to encourage the tenet as well as spirit of mutual collaboration based on reaching agreements, and as a result, unfriendly and dehumanizing labor policies remain embedded in organizations. As a result, this serves as an engine of mistrust, posing a barrier to dialogue, and tensions and crises are on the horizon, putting strain on employers and labor relations. Albert and Yahaya (2013), as cited in Girigiri and Badom (2021), emphasize that where organizations are deficient or inadequate in providing sufficient processes for equalizing varying demands submitted by other parties, patterns and the probability of conflict of interest addressing a breaking point is undoubtedly imminent, capable of interfering with the productivity chain as well as stability of organizations. It suffices to say that when employers' and workers' interactions policies decrease the spirit of social justice in an organization, the propensity for situations of crisis is already triggered.

Industrial harmony, which is pragmatically defined as the preservation of employment, can be achieved by creating a human work environment. Dehumanizing the workplace, on the contrary, is simply denying another person's humanity in the workplace. Status, power, and social connections all help to facilitate this. Creating a humane organizational culture and setting that integrates and embraces new social approaches to work by equalizing opportunities for self-improvement and growth in the workplace, while also ensuring appropriate work quality, necessitates a positive business environment. However, where this sense of humanness has been lost or been beclouded by arrogant nature of employers, the moral exclusion of these necessary demands has a consequential negative effect on the morale and obligation of the

employees in terms of putting in their effort for better performance and productivity (Odoh & Moluno, 2023).

Industrial conflict is unavoidable in modern organizations, as it has been since time immemorial, because management's dominant goal is to maximize profits (Mojalefa, 2021), whereas labor's primary concern is to guarantee and uphold the highest level of wages and the best working conditions for their employees. According to Makinde (2013), the root causes of conflict are unable to be noticed solely by examining the organization and what happens within it. Managerial, employee, and collective aspirations for organizational norms mediate a wide range of structures, processes, values, and norms found outside the organization. External financial variables such as price and wage posture, advancements in technology, market conditions, or the industrial framework can influence managerial action on the normative system; social forces such as increasing public expectations of executive performance, membership in employers' associations, trade union membership, or political variables such as laws and policies implemented by the government. Collectivity desires can be influenced by those of larger collectivities that are externally related to events in the economic and social landscape as a whole, as well as changes in other organizations (Girigiri & Badom, 2021).

Within the organization, the translation of these external stimuli into effective action upon the social organization, via the perceptions and aspirations of individuals or collectivities, is differently shaped by their location (Girigiri & Badom, 2021). This is inherently tied to the social organization and access to power, individually or collectively applied. Thus, aspirations constantly interact with the nature of the division of labour and the distribution of power produce patterns of conflict. Ibukun (2019) emphasized that conflict takes place at multiple levels among and between the various players, including workers, employers/management, and the government. Certain conflicts are related in the industrial framework. Conflicts regarding stakes among the various groups are constant and strong enough to result in prolonged work stoppages. The three primary actors in an organization develop distinct briefings and perceptions of what is important to them (Fejoh et al., 2021). The pursuit of competing goals by each at the cost of others causes severe friction, which leads to strikes/lockouts. These groups, whether organized or unorganized, express their conflicts in a variety of ways, some of which are overt and others covert. Other factors that could lead to conflict or discontent according to Girigiri and Badom (2021) include, dispute within the union, and workers' awareness of their union officials' wrongful use of union funds, as well as compromise when bargaining union issues with management. It may end up being the

primary cause in a strike (especially if workers' grievances about their circumstances are not considered serious by management).

One single event that had a significant negative impact on industrial relations within the nation between labor and government, as well as the economy, was the constant increase in the price of petrol and diesel, in spite of the fact that our nation, Nigeria, is one of the world's largest producers (Nwankwo et al., 2023). The tactical significance of having these products available at affordable prices for Nigeria's socioeconomic activities cannot be overstated. The consequences of this are that a rise in their prices has a negative impact on the prices of other commodities, transportation, and, ultimately, the population's standard of living (Girigiri and Badom, 2021). This is supported by Badom (2019), who found that an upsurge in the price of petroleum-based goods owing to its scarcity, which are extensions of oil and gas workers' industrial actions, triggered increased prices of agricultural products and increased fare. It is therefore, not unexpected that the attempted privatization of the downstream industries of the petroleum industry combined with the government's preference to constantly increasing the pump cost of oil and gas products creates a dramatic running battle between trade union and the state.

Badom, Anele, and Badey (2018) argue that Marxian conflict analysis is based on a constant battle of power between employees and their superiors over control of various aspects of work. This leads to disparities in the distribution of the organization's proceeds, job insecurity for workers, and ineffective management control strategies. Marx contended that economic influences, rather than human ideas, ideals, or values, are the primary causes of conflict as well as social change in organizations or societies. This presupposes that good industrial harmony is primarily based on economic (material) well-being of the workers. Looking at the above, perhaps, it seems very clearly that one of the constant industrial conflicts in Nigeria is due largely because of her workers poor economic (material) condition and dehumanizing nature of the working environment. As Oguwa (2022) stated, the interests of social collaborators are not entirely mutual. For example, the employer represents and mainly deals with a property interest, which is closely linked to the financial interests of a small number of shareholders. The employees' organization or union is primarily concerned with workers' material, spiritual, social, as well as psychological needs. The preceding demonstrates that employers, including their managers, on one side, and employees on the other, have diagonally divergent goals at all times, resulting in an unavoidable conflict situation.

Mukoro (2013) lends credence to this view, that the pattern of industrial relations in Nigeria has been conflictual in nature with disruptive

consequences and significant work-stoppages. Various reasons and explanations have been adduced as to why the relationship between labour and management is conflict ridden. Consequently, labour and management have developed a web of rules to govern their day-to-day interactions so as to promote harmonious relationship between them. Different conflict handling mechanisms have also been developed to minimize the occurrence and reoccurrence of industrial disharmony in tertiary institutions. Collective bargaining, work-floor democracy and other grievance management procedures were introduced to induce industrial harmony. Despite these innovations, industrial disputes seem to be assuming unprecedented level in the tertiary institutions in Nigeria. This study therefore examined the impacts of industrial disharmony on tertiary institutions in Nigeria.

Literature Review

Disputes in Nigerian universities date back to the 1960s, when first-republic politicians attempted unsuccessfully to change the before independence legal image of the university system by putting universities under unwarranted government control. Starting in 1973, university lecturers went on strike. During the dictatorship of General Yakubu Gowon, university staff went on strike to demand better working conditions as a result of the deplorable conditions left behind by the Nigerian civil war. In 1980, Alhaji Shehu Shagari led another wave of strikes. When Obasanjo, the then-president, became president in 1999, ASUU demanded that the 1992 agreement be implemented (Abolo & Oguntoye, 2020).

Pressure from university staff resulted in the FGN and ASUU consensus of 2001. Following a series of appeals to the FGN for the enactment of the 2001 Agreement, ASUU called on its members to go on a total and endless nationwide strike on December 29, 2002. FGN's failure to fulfil its own part of the contract by using an avoidance strategy resulted in another three-day alerting strike on April 24, 2006. The successful election of President Yar'Adua in 2007 gave academics hope, but this was short-lived because nothing was done to put the agreement into effect. Following several unsuccessful negotiations, the employees went on endless strike in 2009. The 2009 strike can be termed the highest over time as it further involved all the facets of the university including NASU (Ndubuisi-Okolo et al., 2022).

The suspended 2009 strike could only be described as a repeat of the past, as the technical committee/inter-ministerial panel undermined the previously reached agreement; failure by the state to honor the 2009 agreement. The ASUU national body joined the strike in June 2010, after all attempts to persuade the five East-South State Governors to relent failed. Ubabukoh (2011) refers to this as the university staff union strikes because it affects all university unions. The issue of strikes, which has

been a perennial problem, did not appear to have abated. The federal government has ignored the universities' repeated calls for the complete implementation of the 2010 agreement (Odoh & Moluno, 2023). As usual in the circle of the university's conflicts, ASUU decided to drive home their demands in a one-week warning strike in September 26th, 2011. NASU also followed with their warning strike effective from 3rd October. The song of victory is yet to be sung as the universities launched a full blown nationwide indefinite strike from December 5th, 2011 to February 2nd, 2012. Conflicts in the Nigerian federal universities continue due to most unfulfilled agreements (Abolo & Oguntoye, 2020).

Odoh and Moluno (2023) define staff effectiveness as a worker's total input into their duties. It entails the general dexterity of staff in performing their duties in order to achieve organizational goals. This includes employee behavior, skills, competence, morale, connections with coworkers, and the ability to follow guidelines from management without stress. The work environment is typically a collection of people and organizations from various cultural, social, political, and economic backgrounds. Given this situation, employees' interests and expectations in organizations are bound to diverge (Igbaji, 2019). These differences in staff are reflected in their unique responses to responsibilities during conflicts. Workers' collective interest is represented through expressions by the workers' trade unions like ASUU and NASU in the universities. Workers performance during or after conflicts is typically an indication of the degree to which university unions persuade employees to respond to issues that have yet to be resolved. According to Adejuwon (2020), this would manifest as a variety of work attitudes, including low or high morale, inaction, or a lack of enthusiasm for duties. Because most conflicts arise as a result of workers' demands for better treatment, the continuation of conflicts has an impact on workers' productivity and, ultimately, hinders the accomplishment of organizational goals. Most employers have had a hostile attitude towards trade unions, particularly in higher education establishments where the administration (state or federal) serves as both employer and umpire. The union therefore finds it difficult to persuade unsatisfied and unwilling workers to increase their productivity to enable organizations achieve their goals (Adejuwon, 2020).

The educational segment, specifically tertiary institutions (universities), in Nigeria has recently experienced a series of industrial unrests. The consequences of recurred and abrupt closures of universities owing to industrial deception on academic programmes and the objectives for which they were developed can be better understood. Educational standards are now thought to be questionable. Many academic timetables in universities have become disorganized, with some

semesters being lost (Abolo & Oguntoye, 2020). Students' academic performance has dropped significantly, while different types of exam misconduct are on the rise. The situation has reached such alarming proportions that the general populace now reproaches the 'ivory towers' of producing graduates who lack the moral fibre to contribute towards the development and growth of the country. In the opinion of Odoh & Moluno (2023), empirical findings show that conflicts have a negative impact on organizational performance and the use of scarce resources. Similarly, organizational conflicts, such as those found in Nigerian universities, can have a positive impact on innovation and decision-making quality in the institutions. In addition, conflicts foster a spirit of collaboration and camaraderie among employees. This occurs especially when the staff of the universities come together to resolve the conflict. Between 1994 and 2023, the ASUU went on strike for approximately 47 months. Recurrent strikes have been among the major barriers to higher education in Nigeria. According to Chukwuka (2013), industrial conflict increased the average number of years students were anticipated to remain at university before graduating. During periods of labour unrest, the majority of pupils would have engaged in anti-social behaviour such as political brutality, armed burglary, illicit drug trade, abduction, and prostitution. The majority of Nigerians are not unaware of industrial strikes often embarked on by ASUU and NASU (Non- Academic Staff Union) (Odoh & Moluno, 2023). It appears dissatisfied with the way in which industrial strikes frequently paralyse academic activities in universities, with strong challenges to the viewed neglect of students who have been writing or protecting their research projects. Four-year courses are frequently extended to more than five years. Parents and observers typically blame either ASUU for being overly demanding in their protests or governments for failing to fund education adequately. Whatever the case, when the two elephants fight, the greenery suffers, as do the innocent students, who are partially sponsored by their parents. Unfortunately, the constant dispute over wages in our institutions of higher learning has a negative impact on the quality of education (Ndubuisi-Okolo et al., 2022).

In October 2010, all universities in Nigeria's Southeast zone went on indefinite strike, demanding the enforcement of the agreements ratified with ASUU, especially regarding salary and allowances. According to a report in the national newspapers, all tertiary institutions in Kwara State (one of Nigeria's 36 states) have gone on strike, demanding the complete execution of the Consolidated Polytechnics and Colleges of Education Salary Structure (CONPCASS) and the Consolidated Tertiary Institutions Salary Structure (CONTEDISS), which take effect in January 2009. Of recent, the Academic Staff Union of Universities (ASUU) declared a strike over the non-implementation of the

agreements reached with Federal Government since year 2023. The strike lasted for almost ten months and was suspended during the last week of March, 2023 (Odoh & Moluno, 2023). These are few cases of strikes that occurred in tertiary institutions in Nigeria.

The internal effectiveness of Nigerian universities has been harmed by frequent labor unrest. Labor unrest in Nigerian universities can take many forms, including disruptions to the academic calendar, intimidation, lockouts, strikes, picketing, and boycotts. To express their dissatisfaction with management's display of superiority and indifference to workers' plights, organized labour has recently used a variety of pressure tactics, including strike measures, picketing, boycotts, overtime bans, intimidation, active non-compliance (ANC), and a slew of others. Thus, industrial conflict has become a recurring issue in all sectors of the Nigerian economy including the educational sub-sector with attendant negative consequences for various stakeholders (Odoh & Moluno, 2023).

Various factors identified by scholars as primary causes of labor unrest in Nigeria include:

- i. Perceived Low Income:** A basic salary is a reward for employees to increase productivity and stay on the job, especially if it is commensurate with their labor. According to Ajewole (2014), Nigeria has generated more than \$300 billion in oil revenue over the last 25 years, after subtracting payments to foreign companies. Between 2004 and 2007, oil revenue totaled \$112 billion, while in 2008, the nation earned \$57 billion from oil and gas. The total oil revenue generated up to April 2008 was estimated at \$500 billion. Nonetheless, the country is impoverished, ranking as one of the world's poorest. Over 70% of the nation's population lives below the poverty line due to inequitable distribution of the national resources, restricted access to social services such as education and public health care.
- ii. Hike of Fuel Price:** The rise in fuel prices has been recognized as another major cause of strikes in our institutions. In accordance with Chukwuka (2013), in 2007, during Olusegun Obasanjo's regime, the Nigerian Labor Congress went on a nationwide strike to protest the increase in fuel prices, with the goal of fighting for the interests of Nigerian citizens, who are the primary consumers of the product.
- iii. Industrial and Economic Policies:** As stated by Igbaji (2019), potential external factors of industrial conflict include the government's industrial as well as economic policies, the scope

of labour regulations, the conduct of the economic and political groups, and national economic poor management.

- iv. **Lack of Conducive working conditions:** Unions in Nigerian universities often embark on industrial strike because of their perception on poor working conditions such as obsolete laboratory equipment, inadequate offices, and lack of research grants and shortage of power supply.
- v. **Reinstatement of the Sacked Lecturers:** For example, there was a conflict at the University of Ilorin between the university authority, which was backed by the Federal Government, and the Academic Staff Union of Universities (ASUU) University of Ilorin (UNILORIN) branch. The immediate cause of the conflict was that the University of Ilorin Authority fired 49 lecturers for participating in a National Strike called by ASUU in defiance of the university's position. The dismissed lecturers proceeded to court to seek for redress. And the court ruled to the advantage of the dismissed lecturers. But despite legal victory, the Lecturers were not reinstated. The National body of ASUU went on strike severally over the non-re-instatement of the sacked Lecturers and the issue of re-negotiation of agreement reached with Federal Government in 2001 (Akingbehin, 2014).
- vi. **Federal Government/ASUU 1999 Signed Agreement:** Another factor is the Federal Government's failure to implement the agreement it signed with ASUU. Some labor agitations include allegations that one of the parties affected has refused to follow the terms of the parties' agreement. The benefits were part of the union's 2009 agreement with the federal government (Akingbehin, 2014).
- vii. **Payment of Entitlements:** As reported by Akingbehin (2014), workers have threatened to go on strike in order to demand payment of government-approved entitlements such as allowances. For example, the Senior Staff Association of Nigerian Universities (SSANU) threatened to go on strike if the 2013 budget did not include its members' allowances. All of these factors, among others, usually lead to the cessation of work by unions in Nigerian universities, which will keep going until solutions are proposed.
- viii. **National Minimum Wage by the Federal Government:** In August 2011, the Nigeria Labor Congress went on a nationwide signaling strike over the Federal Government's failure to implement the new national minimum wage promised by

President Goodluck Jonathan during his presidential campaign (Chukwuka, 2013).

However, effective conflict resolution can lead to improved staff performance as well as better interactions within the organization. Staff participation, innovativeness, and productivity would all improve if conflict was properly managed. The education sector is not an exception. Therefore, the leadership of public institutions ought to strengthen their conflict management techniques in order to have a greater awareness of conflict in the university. Service quality, operational effectiveness, and both informal and formal student training and teaching have been recognized as indicators for assessing administrative staff performance in higher education establishments (Ologunde, Akindele, & Akande, 2013). According to Abba and Mugizi (2018), the roles of teaching, research/publication, and community service are critical to the development of any nation on a global scale because they promote charitable work, financial literacy, health, and decreased crime in communities. Research, which is one of the reasons for the establishment of universities, resulting to the creation of new knowledge, fostering innovation, improving service quality, and increasing university status as well as economic value, has regrettably suffered a significant decline in Nigerian universities as a result of conflict (Dickson & Biriowu, 2020). Thus, in order for the university to achieve the needed research results, conflict must be dealt with effectively.

As things stand, the government and the Academic Staff Union of Universities (ASUU) are unable to come to an agreement. The issue is still present and needs to be resolved appropriately for the university community to breathe the sweet scent of industrial peace. This scenario demonstrates how the government's careless attitude has exacerbated industrial discord and slowed down the steady pace of academic profundity that academic experts in the university system have projected. In spite of the listed obstacles, a variety of conflict resolution techniques have been developed to lessen the impact of the industrial discord in Nigerian universities. To promote industrial harmony in Nigerian universities, work-floor democracy, collective bargaining, and other grievance management techniques have been implemented. Unflinchingly, ASUU has tried to resolve her differences with the Federal Government of Nigeria, but to no avail. Instead, an unprecedented level of industrial disharmony appears to be developing. Given the aforementioned circumstances, workers are displaying careless attitudes towards their jobs, which include irritable behaviour as well as appearance, moodiness, anxiety, unneeded stress, insubordination, and similar traits (Odoh & Moluno, 2023).

Effects of Labor Unrest in Nigerian Tertiary Institutions

The costs of labor disputes have consistently outweighed the benefits. Labor unrest has a negative impact on Nigerian universities' ability to achieve their goals. The adverse impacts of disharmony on Nigerian tertiary institutions, include reduced academic productivity, a decline in the quality of graduates, infrastructural decay, and loss of public trust in higher education. Others include:

Disruption of Academic Calendar: The academic calendars of most Nigerian universities are irregular. Many state and federal universities have lost one or more academic sessions. As a result, four-year courses are frequently extended to five or six years due to school closures caused by industrial strikes. Igbaji (2019) lamented that educational standards are now considered questionable. Many academic calendars in universities have been disorganized, resulting in the loss of some academic sessions. Students' academic performance has dropped significantly, while various forms of examination malpractice are said to be on the rise.

Retardation of the Economic: An ongoing strike causes student to repeat, drop out, waste, and brain drain, all of which have an adverse effect on economic growth. Anyim, Chidi, and Ogunyomi (2012) noted that trade disputes, such as strikes, have a significant impact on the smooth as well as orderly development of the economy, as well as the maintenance of law and order in society. They occasionally elicit reactions from the public because they may harm the public in addition to the parties involved in the conflict.

Financial Losses: All stakeholders in university education - the government, parents, and students - suffer monetary harm as a result of the ongoing labour unrest. For example, the government is required to pay the salaries of employees even while they were on strike. Parents will also have to continue nourishing their children and paying their rents. Barinem and Porbari (2021) observe that employers, particularly in the public sector, rarely use the no-work, no-pay rule, perhaps because employers are usually to blame for failing to prevent a looming strike. In the words of Igbaji (2019), the government suffers financial losses as a result of school closures, while students and parents suffer intangible losses. They further submitted that the above anomaly has contributed in no small measure to a steady decline in the quality of education as some students resorted to examination malpractice to make up for the lost time during conflicts in schools especially where these have resulted to closures.

Dropout, brain drain and educational Wastage: Strikes incur costs such as lost production or output, disruptions in essential services (oil, electricity, and banking), capacity underutilization, scarcity and high costs of essential items, unemployment, and manpower contraction,

among others. A strike-prone country is unlikely to attract foreign investors, as this index has become a critical factor for foreign industrialists and multinational corporations. However, it may be instructive to note that regardless of whether the dispute staged is deemed successful or not, some damage must have occurred, and parties and the public must bear the costs (Anyim et al., 2012).

Mutual Bargaining as a Mechanism for Compromise

Collective bargaining is characterized as all negotiations and consultations held between employers and workers represented by unions to determine all aspects of working conditions, including wages, job security, welfare, and work production. The relative bargaining power possessed and demonstrated by each requires the other party to be aware of the implications of its actions and to think bilaterally (Badom, 2019). Collective bargaining is the process by which an employer or employers and a group of employees reach an agreement on working conditions (Armstrong, 2012). Accordingly, Makinde (2013) defines collective bargaining as a mechanism for discussion as well as negotiation, whether formal or informal, between employer(s) and worker representatives with the goal of reaching an acceptable compromise or understanding on the general working relationship that exists between employer(s) and workers. As a result, acknowledging this power grants one the right to be heard. In effect, each party makes a decision based on the potential reactions of the other party. Collective bargaining creates what is commonly known as industrial legal doctrine in the workplace. The basis of collective bargaining is shared responsibility of work roles by the union and management, which results in a collective agreement. The collective agreement specifies the rights and obligations of workers individually and management against the arbitrary treatment/ regimentation of the union leadership (Badom et al., 2018).

It is worthy of note that collective agreement has a built-in flexibility to provide for issues not covered by the collective agreement. Another way the collective bargaining introduces industrial harmony in the workplace is that through their union made up of their elected representatives, the individual worker makes contributions to the union relations with the management. In effect, the point being made is that collective bargaining therefore provides the means by which workers influence the industrial relations policy of management through logical and informed ideas when dialoguing collectively (Badom, 2019). Collective bargaining has really helped the employers to gain insight into the problems and aspirations of the workers, while the workers on their own come to know more about the economic and technical problems of management (Mojalefa, 2021). It is also wise to note that, through the time consuming and tortuous process of collective bargaining, the emotionally charged

workers or their representatives (Trade union) and employers or their representatives have time to cool-off and soften their problems. Thus, this has paved way for industrial democracy and peaceful coexistence (Albert & Yahaya, 2013; Adele, 2022).

According to Makinde (2013), collective bargaining is based on the principle that workers have a right to contract with their employers as to ways and conditions of work and that the employer recognize that right. In effect, it serves as a system of wage and condition of service determination in which the employer shares administrative decision-making responsibilities with the union. The collective bargaining process manifests the power relationship between unions and employers on issues directly affecting conditions of employment. It is also a means of limiting unilateral decisions and actions by employers and government. Strong, stable, and well-focused and democratic unions expand the scope of collective bargaining and thereby strengthen industrial democracy and harmony. Badom (2019) posits that collective bargaining is in fact a multifaceted institution which internationally has diverse meanings and functions. In addition to rulemaking, which reduces the degree of uncertainty confronting workers and management, it can also be a vehicle for resolving disputes, a power relationship, a form of joint industrial government and channel to addressing conflict. A central integrating mechanism viewed as medium that provides industrial harmony and peaceful industrial atmosphere at resolving conflicting matters at workplace between trade unions i.e. workers' representatives and management which represent employers' interests (Abolo & Oguntoye, 2020).

Barinem and Porbari (2021) remarked that collective bargaining is a process that replaces the individual worker's usually feeble attempt to gain improvements for himself, and is rather based upon the cumulative and pooled experience of many workers, thrashed out through their union, co-ordinate into a single programme, and backed by their collective strength; and it is bargaining; because at any one time the programme is adoptable to the practical situation, and because there is a constant process of give and take of experience and of views, and positions. The knowledge of both trade unions and management in collective bargaining issues being that of complementary, where 'each side yielding in and gaining at a point then the end result has the more practical strength of both point of views; richer and more pointed to the collective issues that informed the bargaining between parties (Mayowa, 2015).

Again, collective bargaining presumes mutual consent and recognition by parties concerned through their representatives of each party interest. In the instance, a measure of autonomy and the right of such interests are certainly to be protected against trespassing each other's rights. The

protection of interest assumes a capacity to do so, namely, an element of power, which is assumed to be fairly distributed, hence making possible a bargaining situation (Osamwonyi & Ugiagbe, 2013). The above point to the fact that the matters were collectively discussed, analyzed and finally agreed upon and it will be binding on all parties. No individual workers can at any point be punished and/or on his/her own challenge management on issues covered in the bargaining except management acting counter wise with a sinister motive to undermine the collective but agreeable decision reached.

Conflict Management through Arbitration

Arbitration is an alternative method to resolve conflicts with one or more arbitrators. It is a more agile way than a judicial process and it is common in commercial contracts which include a clause that states that any problems that may arise between parties in a contract may be solved by arbitration. An arbitration process is a quicker process than a trial. The law provides that the arbitration may be in law, equity or technical. The referees dictate their decision on the basis of their specific knowledge of a particular issue, trade or science (Ogochukwu & Eberinwa, 2014). They further added that the parties may agree who will be in charge of the arbitration procedure. Also, the parties may freely determine the place of arbitration but usually the arbitration institution decides which will take place.

The arbitration process shall not exceed five months duration unless the parties or the arbitrator decide to prolong it. The active role of arbitrators is very important in the arbitration process because they are the ones who carry out the process, determine what evidence will be accepted and valued and at the end they dictate the arbitration award which will end the conflict. The award has the force equivalent to a court order and the parties must comply with it (Osamwonyi & Ugiagbe, 2013). Arbitrators must meet certain requirements to serve as arbitrators and when they accept their position, they assume the obligation to fulfill its function with "dedication and commitment" and as well the responsibility to repair damages caused to third parties by their fault or negligence (Obianuju, Emmanuel & Anzor, 2016).

Before going under an arbitration process, it is essential that the parties know about the arbitration clause and also about the arbitration law which will govern the whole process. The arbitration procedure is generally, time consuming but it has the advantage of encouraging parties. In the interim, the Head of State or the Minister of labour can make the arbitration obligatory and binding if the possibility of a strike action is considered familial to public order or against the general interest, as in cases involving essential service (Osamwonyi & Ugiagbe, 2013).

However, according to Barinem & Porbari, 2021), a positive approach to organizational conflict is that it is absolutely necessary. Accordingly, opposition to ideas should be explicitly encouraged and both the stimulation and resolution of conflict should be encouraged. Even if this view is not hold by, management conflict in organizations is inevitable. This inevitability of conflict is caused by forces residing both inside and outside the organization. The external environments of the organization sometime change in ways that necessitate a reshuffling of priorities and resources allocation among internal subunits and stimulate shifts in the balance of power and patterns of influence between them. Therefore, instead of avoiding conflict, organizations should endeavour to manage or reduce them to the benefit of the organization (Dickson & Biriowu, 2020). There are several managerial strategies used in managing conflict, and essentially, they are directed at its cause, these include:

- i. **Controlling the Issue in Dispute:** The attempt here is to control the issue in an attempt to resolve the dispute. This involves separating issues into their smallest components and dealing with them separately in attempt to make it easier to resolve major disputes. Fractioning conflict issues help to avoid stalemate by making it possible for one party to concede on one issue without feeling it has lost the contest.
- ii. **Controlling the Context:** To minimize conflict that arises out of organizational design and layout strategies, management must formulate sound procedural strategies to institutionalize and channel conflict. If conflicts are inevitable and normal in organizational life, then proper procedures for solving them must be established.
- iii. **Controlling the Relationship Directly:** In adapting this strategy, management hopes to change the attitudes of the group members or individuals toward each other. This approach is more functional in inter-group conflict. Management directly intervenes in the dispute by physically separating the unit involved on holding direct negotiations between the units or individual or formally requiring intense interaction.
- iv. **Altering the Individual Involved:** Because altering the individual personality is much more difficult than altering his position in the organization, it may be feasible to swap the individuals in dispute.
- v. **Develop a Common Set of Goal:** Much of the conflict between groups in any social organization arises because the subsystems have different goals. Most managers are rewarded through pay increases, promotions etc to the extent that they accomplish the

goals and the objectives of their particular subsystem which is concerned about making itself look good and is also concerned about working with other subsystems towards common goals and objectives. An approach known as the “the organizational confrontation meeting” is developed by Beckhard to encourage organizational subsystems to work towards establishing and striving for common goals (Abba & Mugizi, 2018).

Conclusion and Recommendations

Disharmony within Nigerian tertiary institutions continue to impede their ability to fulfill their mandate of producing skilled manpower and contributing to national development. From frequent strikes and poor communication between institutional management and staff to political interference and ethnic divisions, the challenges are multifaceted. The impact on academic performance, student life, and institutional reputation is profound, creating a ripple effect on society at large. Without concerted efforts to tackle the root causes, disharmony will persist, threatening the future of higher education in Nigeria. The study recommended that addressing disharmony requires collaborative efforts between government, management of institutions, staff unions, and students. By promoting inclusivity, strengthening institutional autonomy, and ensuring effective conflict management mechanisms, Nigerian tertiary institutions can foster a more harmonious and productive academic environment:

1. **Strengthening Institutional Autonomy:** The federal and state governments should grant more autonomy to tertiary institutions to reduce political interference in decision-making processes, thereby fostering more stable environments.
2. **Improved Communication Channels:** Universities should establish effective communication frameworks that allow for transparent and consistent dialogue between management, staff, and students to address grievances promptly before they escalate into full-blown crises.
3. **Conflict Resolution Mechanisms:** Institutions should establish permanent conflict resolution bodies with representatives from management, staff, and students to mediate disputes in a timely and fair manner.
4. **Enhancement of Funding:** Increased and timely funding from the government is critical to ensuring that institutions can maintain their infrastructure, provide competitive salaries, and reduce the need for strikes over unmet financial demands.

5. **Promotion of Inclusivity and Diversity:** Policies aimed at fostering inclusivity and unity within the institutions should be strengthened to reduce the influence of ethnic and religious divisions among staff and students.
6. **Capacity Building for Leadership:** Regular leadership training for university administrators should be encouraged, equipping them with the skills to manage conflicts effectively and create harmonious work and learning environments.

References

- Abba, H.D. & Mugizi, W. (2018), Performance of academic staff in polytechnics: An analysis of performance levels in North West geo-political zone of Nigeria. *Research Journal of Business Management*, 2(3), 186 -192.
- Abolo, E. V., & Oguntoye, O. (2020). Conflict resolution strategies and staff effectiveness in selected federal universities in Nigeria. *Educational Planning*, 23 (3), 29 -39.
- Adejuwon, K. D. (2020). Improving civil service performance in Nigeria through the application of balanced scorecard methodology. *University of Mauritius Research Journal*, 22(12), 280 - 309.
- Afrin, S., Asyraf, B., Mohd, K., M., Yusof, M. F., Hassan, M. S., Islam, M. A., & Khairuddin, K.N.B. (2023). Investigating the determinants of employee performance for sustainability: A study on the bangladesh insurance industry. *Sustainability*, 15, 1 – 16.
- Ajewole, I. P. (2014). Managing labour unrest in Nigerian universities. *Journal of Education and Policy Review*, 6(2), 75 – 90.
- Akingbehin, B. (2014). Incessant labour unrest: Any hope for the future? *News Agency of Nigeria*. 25th April, 2014.
- Anyim, C. F., Chidi, O. C. & Ogunyomi, O. P. (2012). Trade disputes and settlement mechanisms in Nigeria: A critical analysis. Department of Industrial Relations and Personnel Management, Faculty of Business Administration, University of Lagos, Nigeria. *Interdisciplinary Journal of Research in Business*, 2 (2), 01- 08.
- Armstrong, M. (2012). *A handbook of human resource management practice*. New Delhi: Kogan Page Limited.
- Badom, M. P. (2019). Oil and gas workers' industrial actions and impacts on commuters in Rivers State, Nigeria. (PhD thesis). School of graduate studies, university of Port Harcourt, Nigeria.
- Badom, M. P., Anele, K. A. & Badey, D. (2018). Oil and gas workers' industrial actions as precursor of development in Nigeria.

- International Journal of Social Science and Humanities Research. 6(4), 835- 843.
- Barinem, G. W., & Porbari, M. B. (2021). Industrial harmony and work discontent: Employer and employees relations perspective. *International Journal of Resource Personnel*, 80(1), 209 -219.
- Bernardo, M.A.C. & Baranovich, D. (2014). Higher education in the heart of armed conflict: The pivotal role of student affairs. *International Journal of Educational Development*, 35, 78-85.
- Chukwuka, C.O. (2013). Industrial conflict – causes and effects in universities/colleges. Retrieved from [www.com/industrial-conflict-effects-universities colleges](http://www.com/industrial-conflict-effects-universities-colleges) on 15 June, 2023.
- Dickson, A. P. I., & Biriowu, C. (2020). Employee absorption and industrial harmony of tertiary institutions in Rivers State, Nigeria. *The Strategic Journal of Business & Change Management*, 7(1), 410 – 421.
- Fejoh, J., Boyede, M. A., Adesanwo, E. O., & Onanuga, P. A. (2021). Industrial disharmony and sustainable development goals of state government-owned tertiary institutions in Southwest Nigeria. *Journal of Education in Black Sea Region*, 7(1), 72 -84.
- Girigiri, B. W., & Badom, P. M. (2021). Industrial harmony and work discontent: Employer and
- Igbaji, P. (2019). Industrial conflict and goal achievements of tertiary institutions in Cross River State, Nigeria. *Journal of Research in National Development*, 7(2), 122-135.
- Makinde, H. O. (2013). Securing a harmonious working environment through effective industrial relations of workplace. *The Nigerian perspective. Business management dynamics*. 3(3), 46-89.
- Mayowa, S.O. (2015). Industrial conflict and its management in selected Nigerian manufacturing companies. *International Journal of Organizational Leadership*, 4, 34 -51.
- Mojalefa, M. L. (2021). Factors contributing to industrial conflicts within higher education institutions in Lesotho: A case of the national university of Lesotho. *Business and Economic Research*, 11(2), 319 – 329.
- Mukoro, S. A. (2013). Improving industrial harmony and staff performance in a school organization through effective communication. *International Journal of Scientific Research in Education*, 6(3), 263-270.
- Ndubuisi-Okolo, P. U., Onyeizugbe, C., & Anekwe, R. I. (2022). Industrial harmony: Antidote to workplace deviant behaviour among lecturers in Nigeria. *Asian Journal of Economics, Business and Accounting*, 22(2), 31 – 39.
- Nwankwo, E. C., Obi, A. N., & Onyemachi, C. A. (2023). Effect of industrial relations practices on the productivity of the public

- sector in Nigeria. *International Journal of Advanced Multidisciplinary Research and Studies*, 3(2), 217 – 224.
- Nwokocha, I. (2014). Sustainable managerial strategies for employees retention in two private sector organizations in Port Harcourt, Rivers State, Nigeria. PhD Thesis Submitted to Ebonyi State university, Nigeria.
- Obianuju, M. C., Emmanuel, C. D., & Anzor, E. C. (2016). Conflict management and performance of selected tertiary institutions in Enugu State, Nigeria. *International Journal of Advance Research*, 4(11), 1153 -1161.
- Odoh, C. O., & Moluno, S. U. (2023). Cases and impacts of industrial disharmony on employee performance in tertiary institutions in Nigeria. *Journal of Public Administration, Finance and Law*, 28, 316 – 327.
- Ogochukwu, M., & Eberinwa, A. (2014). *Industrial relations in a new era*. Onitsha: Out-Right Publishers.
- Oguwa, B. A. (2022). Conducted a study to evaluate the influence of employee relations strategies on Organizational performance in Kenya Commercial Bank Kisumu Branch. *British Journal of Management and Marketing Studies*, 4(4), 57 – 67.
- Ologunde A. O., Akindele R.I., & Akande, W.O. (2014). Moonlighting among university lecturers and their performance in the South–Western Nigeria. *Journal of Management and Sustainability*. 3(4):92–102.
- Osamwonyi, I. O., & Ugiagbe, E. O. (2013). Harmonious industrial relations as a panacea for ailing enterprises in Nigeria. *Journal of Asian Scientific Research*, 3(3), 229 -246.
- Ubabukoh, O. (2011). ASUU strike: South-East Governors to meet. Retrieved from [http:// www.punchy.com/Articl.aspx?theatre](http://www.punchy.com/Articl.aspx?theatre) on 15 June, 202.

THE FORMATIVE DIMENSIONS OF COOPERATIVE LEARNING

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Abstract: *Cooperative learning is a pedagogical approach that involves pupils and students working together to achieve common goals or accomplish group tasks. The efficacy of cooperative learning as a pedagogical practice is widely acknowledged, with evidence indicating its capacity to facilitate socialisation and learning among students at all levels, from kindergarten to university, and across diverse subject areas. The approach emphasises the importance of pupils and students working together as a unified team in a collaborative and supportive environment. This enables them to provide constructive feedback, enhance their existing knowledge, engage in active and creative thinking, and negotiate solutions collectively. When teachers structure activities in small groups, pupils/ students are more interactive, using more equitable communication so that ideas are shared between group members and they develop more ideas to explain the problem at hand. The fact that pupils and students interact and work together not only enables them to learn from each other, but also allows them to accept more autonomy over the tasks they have to accomplish and the decisions they have to make. Research also shows that students have a lot to learn when they have opportunities to interact with each other, listen to what others have to say, share ideas and information, ask questions, critique others' ideas, and use the information to reason and solve problems together.*

Key words: *cooperative learning; communication; learning from each other; interaction; interpersonal skills.*

Introduction

According to the *Dictionary of Pedagogy* (2021), cooperative learning "represents a type of learning and, at the same time, a teaching method, based on the organisation—according to well-defined operational objectives—of collective work founded on complementarity and teleological convergence (shared goals). It is oriented towards ensuring the social aspect of learning and aims to develop students' interpersonal communication skills, interactions, social competencies. This method

values students' need to work together as a genuine team in a collegial and supportive climate, allowing them to correct one another, activate, update, and review prior knowledge, practice active, logical, divergent, and creative thinking, and negotiate within the process of learning and knowledge acquisition. Thus, learning and knowledge are both the result of personal experience and collective cooperation among classroom group members" (M. Bocoş (ed.), 2021, pp. 904-905). The same dictionary further defines the concept as "a type of cooperative learning carried out by leveraging the facilities provided by computers in the following areas: mediating the process of acquiring new knowledge, supporting the effective conduct of learning processes (regulating rules, tasks, roles, necessary operations, etc.), facilitating interactions and exchanges within the group, and controlling and monitoring these activities".

What are the essential elements of cooperative learning?

According to the Johnson & Johnson model, cooperative learning is an instructional approach that involves students working in teams to achieve a common goal under conditions that include the following elements:

1. **Positive Interdependence.** Team members are required to rely on one another to achieve the goal. Everyone faces consequences if any team member fails to complete their part.
2. **Individual Accountability.** All students in a group are responsible for completing their portion of the work and mastering the entire material to be learned.
3. **Face-to-Face Interaction.** Although some group work can be divided and completed individually, it must involve interactive processes where group members provide feedback to one another, challenge reasoning and conclusions, and, most importantly, teach and encourage each other.
4. **Appropriate Use of Collaborative Skills.** Students are encouraged and supported in developing and practising skills such as building trust, making decisions, communicating effectively, and managing conflicts.
5. **Group Processing.** Team members set group goals, periodically evaluate their performance as a team, and identify changes they will make to function more effectively in the future.

Research has shown that compared to traditional individual and competitive instructional methods, properly implemented cooperative learning results in better learning outcomes and the superior development of communication and teamwork skills (e.g., leadership, management, and conflict resolution skills). This technique has been successfully used across all scientific disciplines, including chemistry.

However, the benefits of cooperative learning are not automatic. If implemented imperfectly, it can create significant challenges for educators. Teams may become dysfunctional, and students might resist or exhibit hostility towards group work.

What is the role of teachers in cooperative learning?

Teachers play a crucial role in fostering interactions among students, and cooperative learning provides opportunities to encourage these interactions. The fact that students interact and work together not only allows them to learn from one another but also to assume greater autonomy regarding the tasks they need to complete and the decisions they must make. This opportunity to be more active in their own learning sparks students' interest, reduces disruptive behaviour, and has a positive impact on the learning process (Sharan & Shaulov, 1990).

Hertz-Lazarowitz (1989) found that when teachers shift their instructional style in favour of cooperative learning, they become more engaged in a complex process of linguistic change, and their language becomes more attentive and personal as they work more closely with small groups. Consequently, their language is often more spontaneous, varied, and creative, and it conveys positive emotional messages to their students.

How Can Cooperative Learning Be Organized?

Cooperative learning can be implemented through formal cooperative learning groups, informal cooperative learning groups, and base cooperative learning groups.

Formal Cooperative Learning Groups teach specific content, facilitate active cognitive processing of information during lectures or demonstrations, and provide long-term support for academic progress (Johnson, Johnson, & Holubec, 1992, 1993). Formal cooperative learning involves students working together over a single class period or several weeks to achieve common learning objectives and complete specific tasks (such as decision-making, problem-solving, completing a curriculum unit, writing a report, conducting a survey or experiment, reading a chapter or reference book, learning vocabulary, or answering questions at the end of a chapter).

Informal Cooperative Learning Groups involve students working together to achieve a common learning objective in temporary, ad hoc groups lasting from a few minutes to a class period (Johnson, Johnson, & Holubec, 1992; Johnson, Johnson & Smith, 1991). During a lecture, demonstration, or film, informal cooperative learning can be used to: (a) focus students' attention on the material to be learned, (b) create a conducive learning atmosphere, (c) establish expectations for what will

be covered in a session, (d) ensure students cognitively process the material being taught. In direct teaching, the challenge for the teacher is to ensure that students engage in the intellectual work of organizing the material, explaining it, summarizing it, and integrating it into their existing conceptual frameworks.

Base cooperative groups are long-term, heterogeneous cooperative learning groups with stable memberships (Johnson, Johnson, & Holubec, 1992; Johnson, Johnson & Smith, 1991). The purpose of base groups is to provide support, assistance, encouragement, and help that each member needs to achieve academic progress (attending classes, completing all assignments, learning) and to aid their cognitive and social development in healthy ways. Base groups meet daily in elementary school and twice weekly in secondary school (or as often as the class meets). They are permanent (lasting from one to several years) and foster long-term peer relationships essential for consistently motivating members to work hard in school. These groups formally meet to discuss each member's academic progress, offer mutual help and assistance, and ensure that all members complete their assignments and make satisfactory progress in the academic program. They are also responsible for informing absent members about what occurred in class when they missed a session. Informally, members interact daily during and between classes, discussing assignments and helping each other with homework.

Using base groups tends to improve attendance, personalise the work and school experience, and enhance the quality and quantity of learning. The larger the class or school and the more complex and difficult the subject matter, the more important it is to have base groups.

What are the advantages of cooperative learning concerning competitiveness and the individual approach to learning?

Research indicates that, compared to competitive and individualistic efforts, cooperation aims to:

- (a) better results and higher productivity,
- (b) closer, more supportive, more committed and
- (c) better psychological health, social skills and self-esteem.

Unlike cooperative situations, competition situations are those in which students work against each other to achieve a goal that only one or a few can achieve.

In competition there is a negative interdependence between the achievement of objectives; students perceive that they can achieve their goals if and only if the other students in the class fail to achieve their goals (Deutsch, 1962; Johnson & Johnson, 1989). An evaluation of the achievements takes place according to the proposed rules. The result is that students either work hard to perform better than their peers or take

it easy because they don't think they have a chance to win.

In individualistic learning situations, students work alone to achieve goals that are unrelated to those of their classmates and are evaluated based on a benchmark. The students' achievements are independent; students perceive that achieving their learning goals is unrelated to what other students are doing (Deutsch, 1962, Johnson & Johnson, 1989). The result is a focus on self-interest and personal success, and a view of others' successes and failures as irrelevant.

Why use cooperative learning?

The benefits of adopting cooperative learning would be as follows:

1) Learning for all

Cooperative learning has value in inclusive classrooms because it is based on heterogeneity and encourages peer support and bonding. However, cooperative learning is not only valuable for children with disabilities. Cooperative learning has value for all students. All students must learn and work in environments where their strengths are recognized and their individual needs are addressed. All students need to learn within a supportive community to feel safe enough to take risks.

2) School results

In experimental studies comparing the effects of cooperative learning on learning outcomes, most have found that outcomes are significantly better in cooperative classes than in control classes. Group goals and individual responsibility are leveraged for these academic benefits to be present. Research on behaviors within groups that contribute to learning gains has shown that students who give and receive elaborate explanations are the ones who gain the most from these activities. (Slavin, 1990)

Critical thinking is stimulated, and students clarify their ideas through discussions and debates. The level of discussion and debate in groups of three or more people and between pairs is significantly higher than when the whole class participates in a teacher-led discussion.

Students immediately receive feedback or questions about their ideas and formulate answers without having to wait for long periods of time to participate in the discussion.

Using cooperative learning, students continuously discuss, debate, and clarify their understanding of the concepts and materials considered during class. They build their knowledge base. The emphasis is on understanding the material evidenced by the students' ability to explain ideas to their peers. This leads to a sense of mastery of the content versus a passive acceptance of information from an external expert.

3) Communication skills

The researchers found that students engaged in cooperative learning activities developed interpersonal communication skills more easily

than learners who were in other classroom contexts. They were more attentive to the feelings of others, worked in intercultural situations more easily, and liked their classmates and teachers more than other students. The researchers found that students made friends from other cultures and kept these friends outside of class hours. They had positive expectations for future interactions. They also showed a more accurate understanding of others' perspectives. In conflictual situations, they were better able to negotiate and resolve conflicts in a mutually beneficial way.

4) Psychological health

Students who were part of classes in which most of the learning activities were carried out through cooperation, were psychologically healthier than students who were not in such classes. They had higher self-esteem. Slavin (1990) also documented the findings that these learners have feelings of individual control over their own fate in school, the time spent solving the task was greater, and their cooperativeness and altruism were also higher.

References

- Bocoş, M.-D. (2013), *Interactive Training. Axiological and Methodological Landmarks*, Polirom Publishing House, Iaşi.
- Bocoş, M. D. (coord.), Răduţ-Taciu R., & Stan, C. (2021), *Dictionary of Pedagogy*, Cluj University Press Publishing House, Cluj-Napoca.
- Deutsch, M. (1962). Cooperation and trust: some theoretical notes. In M. R. Jones (Ed.), *Nebraska symposium on motivation* (pp. 275-319). Lincoln, NE: University of Nebraska Press.
- Hertz-Lazarowitz, R. (1989). Cooperation and helping in the classroom: A contextual approach. *International Journal of Educational Research*, 13, 113-119
- Ionescu, M., & Bocoş, M. (2001), "Methodology of training", in Ionescu, M., Chiş, V. (coord.), *Pedagogie. Supports for teacher training*, Cluj University Press Publishing House, Cluj-Napoca.
- Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: theory and research*. Edina, MN: Interaction Book Company.
- Johnson, D. W., Johnson, R., & Smith, K. (1991). *Active learning: Cooperation in the college classroom*. Edina, MN: InteractionBook Company
- Johnson, D. W., Johnson, R., & Holubec, E. (1992). *Circles of learning* (4th ed.). Edina, MN: Interaction Book Company
- Johnson, D. W.; Johnson, R. T.; &Stanne, M. E. *Cooperative Learning Methods: A meta-analysis*. University of Minnesota, Minneapolis: Cooperative Learning Center, 2000;

<http://www.cooperation.org/pages/cl-methods.html> (accessed October 5, 2006).

- Popa, C. (2010), Learning through cooperation – Applications to the third and fourth grades, Editura Didactics and Pedagogy, Bucharest.
- Sharan, S., & Shaulov, A. (1990). Cooperative learning, motivation to learn, and academic achievement. In S. Sharan (Ed.). Cooperative learning: Theory and research (pp.77-94). Praeger: New York
- Sharan, S., & Shachar, C. (1986)"Cooperative Learning Effects on Students' Academic Achievement and Verbal Behavior in Multiethnic Junior High School Classrooms in Israel." University of Tel Aviv, Israel. Unpublished paper,
- Slavin, R. E. (1990). Comprehensive cooperative learning models: Embedding cooperative learning in the curriculum and the school. In S. Sharan (Ed.), Cooperative Learning (pp.261-283). Westport, CT: Praeger.

ASSESSMENT OF SECONDARY SCHOOL STUDENTS' DIFFICULTIES IN TRANSLATING WORD PROBLEMS INTO ALGEBRAIC EQUATIONS

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Abstract: *The purpose of this study was to assess the difficulties secondary school students encounter in translating algebraic word problems into algebraic equations. This study was conducted at Nsukka Local Government Area, Enugu State, Nigeria. A survey research approach was employed in this study. Two research questions were answered and one hypothesis was tested in this study. The sample was 140 participants, selected using stratified proportionate random sampling approach. The data gathering tool was an essay test constructed by the researcher and entitled 'Algebraic Word Problem Test (AWPT)'. The AWPT was validated by experts after which the inter-rater reliability was determined using Kendall's correlation of concordance (W) which yielded reliability index of 0.81. The findings indicated that students did not encounter difficult in representing unknown variables with letters. However, students had difficulties in: (i) generating linear algebraic terms, (ii) creating linear algebraic expressions, (iii) equating two algebraic expressions to obtain the required equations, (iv) in generating the two distinct simultaneous equations as required by the questions, (v) creating quadratic terms, (vi) generating quadratic algebraic expressions, and (vii) creating and writing the final quadratic equation. Gender had no influence on difficulties encountered by students in translating word problems to equations. Recommendations were made in light of the findings.*

Key words: *mathematics; algebra; assessment; secondary school education.*

Introduction

Students' ability to solve algebraic word problems is one of the essential mathematical skills needed in applying Mathematics in solving real-life problems. It is a key factor for instilling problem-solving skills among learners (Teoh et al., 2024). However, students often see word problems

as uphill tasks. Consequently, it is often reported that student fail woefully in questions involving translating word problems to algebraic equations (The West African Examination Council [WAEC], 2016-2021). Worryingly, the specific areas of the students' difficulties in translating word problems to algebraic equations are yet to be properly identified; thereby making effective interventions by Mathematics teachers challenging. It is worth mentioning, that, identification of a problem is key phase in solving it. There is scarcity of knowledge on whether the difficulties secondary school students in Nigeria encounter in translating word problems to algebraic equations revolve around simple linear equations, simultaneous equations, quadratic equations, or even polynomial equations. Hence, this current study is poised to fill this knowledge gap by assessing the difficulties secondary school students' encounter in translating algebraic word problems into algebraic equations which is one vital and often tested content areas of secondary school Mathematics.

Mathematics involves series of activities designed to enable individuals and nations solve problems (Ogbu & Ugwu, 2023). Hence Mathematics could be described as an activity-based subject with problem solving orientation. Mathematics could serve as a tool for communication and a mean to solve computational challenges in various areas of lives (Ekwueme, 2013). According to Iyoke (2015), the applications of Mathematics knowledge is an integral part of the daily activities of individual which can easily be seen in business transaction, architectural designs, arts work, decision making processes, engineering work, and even sports. Fundamentally, Mathematics makes use of axioms, numbers, symbols, and logic to derive solutions to mathematical tasks. Hence, Mathematics could be defined as the study and use of axioms, theory of numbers, letter, symbols, shapes and dimensions of shapes, quantities and changes in the quantities, and logics in solving mathematical related problems. It is an indispensable tool for development of science and technology. It is the subject that enables students to acquire wider areas of skills, including skills in computation and logical thinking (Abdul-Rauf & Akanmu, 2019). Because Mathematics knowledge is applied in virtually all spheres of human endeavours, any nation that aspires to attain scientific, technological, and economic independence, is expected to lay solid foundation in science and Mathematics.

Mathematics is designed to facilitate the solving of complex computational problems in concrete or abstract sense which needed for transformation of nations. The current rapid advancement in technologies among nations in recent times, undoubtedly, owes a lot to improvement in scientific and mathematical knowledge. For instance, Mathematics is needed to make accurate and precise prediction of

events; hence the reason Mathematics cannot be separated from science and research. In Agriculture, basic mathematical knowledge is also required to enable farmers determine, for example, the right compositions of materials for fertilizers, feeds, pesticides and herbicides that would yield the maximum results. In transportations, knowledge of Mathematics could help pilots, sailors, and drivers to accurately determine how long an embarked or prospective journey could take. The construction and development most modern means of transportation (such as cars, ships, and airplanes) and equipment are guided by laws and principles developed using mathematical ideas (Gimba & Agwagah, 2012). Of course, the importance and roles of Mathematics in the society is obvious and seems to have been recognized by education stakeholders.

The importance of Mathematical knowledge cannot be over stressed as such knowledge could be applied in many areas of human endeavors. For instance, a student who wishes to further a career in Engineering, Pharmacy, Physical Sciences, Social Sciences, Education, Banking, Finance, and even some medical related courses, such student is expected to have good knowledge of Mathematics. This major admission requirement of many tertiary institutions in Nigeria which stipulates a minimum of credit grade in Mathematics in senior secondary school certificate examinations conducted by examination bodies such as the National Examination Council (NECO) and the West African Examination Council (WAEC) is strong pointer to the need of Mathematics for the society. Mathematics is a problem-solving based subject that was initially designed by primitive man to keep accurate record of the increasing number farm produce beyond the use of pebbles, counters, or the making of stroke of lines on the stones and walls. Another interesting way to appreciate the importance of Mathematics is to examine the stipulated aims of teaching Mathematics at secondary school level in Nigeria, which include providing learners with the desired computational skills and inculcating in the learners the desire to apply Mathematics in solving everyday problems. Essentially, it implies that Mathematics is recognized as problem solving discipline. Mathematics is an essential tool needed to guide every day informal and formal decisions and business transactions. It also serves as agent of creativity and technologies as evidence in the second aforementioned objective of teaching Mathematics in secondary schools in Nigeria. Rapid change in technologies owes a lot to adoption of scientific and mathematical knowledge as mathematical ideas are applied in production and modification of many technological equipment and devices. This is evidence, for example, in the calibration of many measurement devices that are based on the principle of Mathematics. These devices are used in many manufacturing industries to facilitate

industrial services. Interestingly, companies could maximize their profit and minimize loss through the application of Mathematics. Engineers, for example, need substantial knowledge of geometry, quantum mechanics, analysis, and calculus to build bridges, buildings, and other architectural works (Gimba & Agwagah, 2012). Mathematics is important because it is very much needed to educate pupils and students in technological related disciplines which would enable graduates to become problem solvers (Igbojinwaekwu, 2020). It is expected that the objectives of teaching Mathematics at secondary school level should be attained to great extent given the importance of mathematical and unrelenting efforts to ensure effective teaching and learning of the subject.

It is worth recognizing some efforts towards effective teaching and learning of Mathematics. Students who have exceptional knowledge of Mathematics are often reward; a vicarious attempt to get low Mathematics students motivated to learn Mathematics. For example, in Nigeria, Mathematical Association of Nigeria (MAN) and National Association of Science Teachers (NAST) have continued, on annually basis, to reward the best performing students selected through competition Mathematics examinations. Mathematics teachers are also being retrained through workshops and seminars organized by educational stakeholders on the best approaches for effective teaching of Mathematics. The WAEC Chief Examiners Reports have usually outlined the areas of students' weaknesses in Mathematics with a view to instigate necessary interventions. In the same vein, some employers of labours have continued to demand for candidate with basic mathematical knowledge, suggesting that students are expected to demonstrate sound knowledge of Mathematics.

However, notwithstanding the roles and the importance Mathematics and the efforts to ensure effective teaching of the subject, students' achievement in Mathematics seems not to match the developmental expectation of Nigeria in terms of mathematical knowledge. Students' achievement in Mathematics in this paper is operationalized as the grades or scores students obtained either in the internal or external Mathematics examinations. Internal examination is used in this context to denote the examinations conducted by individual classroom or subject teachers while external examinations are set and administered by external bodies such as NECO and WAEC. Furthermore, academic achievement entails performance indicators that describe the degree to which an individual has attained a given educational target that were outlined by the teachers before instructional activities commenced (Ogbu, et al., 2024). It is the overall manifestation of possessed competence, skills, and knowledge in the subject (Pandey, 2017). Hence, a student with higher competence, skills, and mathematical knowledge

are expected to achieve more in Mathematics as compare to students with low skills, and poor knowledge of Mathematics. In other words, students with low Mathematics ability are likely to be associated with poor achievement in the subject.

Plethora of evidences indicate reoccurring students' poor achievement in Mathematics. For instance, in Nigeria, secondary school students' achievement in Mathematics in WASSCE was noted to be unsatisfactory (Ntibi & Edoho, 2017). The WAEC Chief Examiners' Report (2016-2021) indicated that students encountered a lot of difficulties in Mathematics, especially in the area of solving word problems. Ogbu and Anyaegbu (2021) in a content analysis of the WAEC Chief Examiners' Reports on students' weakness in Mathematics for the year 2009 to 2019 revealed that the most frequently occurring weakness of students in Mathematics is generally in algebra and word problems in particular. Of course, multiple factors may account for this students' poor achievement in Mathematics. For instance, poor teaching methods, school related factor, students' related factors, and the nature of Mathematics itself is could cause students' poor achievement in the subject.

Mathematics, at secondary school, has different branches which include algebra, geometry, number and numeration, probability and statistics, and Trigonometry. Algebra represents about 30% of the content of secondary school mathematic curriculum in Nigeria. It is pointed out the Trend in International Mathematics and Science Study (TIMSS) which the common benchmark for enhancing students' knowledge of Mathematics contains 30% algebra for eight grade Mathematics (Teoh et al., 2024). The content of TIMSS is designed in such a way that students' mastery of algebra will enhance their performance not only in TIMSS but in Mathematics generally. More importantly, the mastery of foundational concepts of algebra before enrolling in university is crucial, hence the teaching and learning of algebra in schools need to be scrutinized to determine reason for students' inability to fully comprehend and used mathematical language correctly (Teoh, et al., 2024). Mathematics is often and erroneously described as an abstract subject; comprising inexplicable non concrete concepts. It is worth to emphasize that most of the concepts of Mathematics could be applied in solving problems in real time by translating real life situation into mathematical models. Hence, the perception of the subject as being abstract by its nature is unwarranted once the students understand the link between mathematical equations and word problems.

Word problems may be described as the link between Mathematics and the solution to real life problems. When individuals assert that Mathematics is applied in solving problems, it implies that the problems are transformed into Mathematics expression where manipulations are performed to arrive at the solution to the problems. Notwithstanding the

roles of the knowledge of words problems in modeling and solving real life problems, secondary school students have challenges in dealing with Mathematical word problems. Word problems are long recognized as the most dreaded, feared, and disliked part of Mathematics (Bullock, 2015; Ogbu & Anyaegbu, 2021). Algebra often makes use of numbers, shapes, letters, and symbols to represent ideas. When these numbers, shapes, letters, and symbols are represented using words for the purpose of finding solution to problems, it is called word problems.

Several studies have explored the challenges students encounter in algebra (Wahyuni et al., 2020), however, studies on the best way to learn algebra is vital as students' performance in algebra has continued to decline (Teoh, et al., 2024). Students' unparalleled dislike and anxiety for word problem is a growing concern for Mathematics teachers (Murray, 2012). Experts have noted that students have great deal of aversion in solving word problems which results in the students' inability in solving and obtaining good grades in Mathematics tasks involving word problems (Rembert, Mack, & Gilbert, 2019). Specifically, the chief examiner for WAEC has continuously lamented on the students' inability to solve word problems in WASSCE. For instance, WAEC Chief Examiners' Report for the year (WAEC, 2017, 2018, 2019, 2020, 2021), noted that most students could not attempt word problem tasks. Secondary school students' mastery of secondary school algebraic content is below expectation (Teoh et al., 2024). More so, in rare instances, most of the few students who attempted these tasks did not produce appropriate algebraic expression for the word problem tasks (Taley, 2022). The inability of the students to transform worded tasks into algebraic expression restrained them from providing accurate solutions, Taley further observed. Students do not possess the needed mathematical language to obtain good performance in word problem (Teoh et al., 2024). Sugiarti and Retnawati, (2019) categorized students' difficult in algebra into concept related difficulties and principle related difficulties. Adu, et. al. (2015) also noted that though approximately 60% of the students attempted most of the word problem question, only 2% percent produced correct answers, which underscored students' inability to comprehend and transform word problems into equations. Hence, there is the need to pinpoint the specific areas of students' difficulties in transforming word problems to algebraic expressions to direct proper and effective actions necessary to overcome these challenges.

Measures have been taken to ascertain students' challenges with regards to solving of word problems. For example, Adu, et. al. (2015) explored students' errors in solving word problems in linear equations using ten questions on word problem that were given to the student. The authors further noted that about 75% to 84% of the students examined committed

various errors, including comprehension and transformation errors. Identifying students' error in solving word problems as comprehension and transformational errors may not give Mathematics teachers clear direction on how to reduce students' difficulties in solving word problems. Comprehension and transformation errors seem to be generic in that one could not precisely point out one area where students do not comprehend. It has also been suggested that one of the ways to overcome the challenges of students in dealing with word problems is to adequately address the issues of student's poor knowledge of Mathematics lexicons and terms (Adu, Assuah, & Asiedu-Addo, 2015; Moleko & Mosimege, 2020). In addition, how these terms and lexicons are related to mathematical operators are of great importance in dealing with word problems. There is gap in the knowledge on the exact difficulties students possess in translating word problems to simultaneous and quadratic equations. For instance, neither the WAEC Chief Examiner's Reports nor previous researchers have pinpointed student's difficulties in translating word problems to simultaneous and quadratic equation. Hence the need for further studies because of the important of word problems in real life situations.

While it is important for students to understand the meaning of Mathematical terms, teachers may be in better position to guide the students if the teachers have knowledge of students' difficulties in not just on mathematical lexicons but also in other areas. For instance, do the students have difficulties in representing unknown using letters or symbols in translating words problems to linear, simultaneous, and quadratic equations? Could the students have difficulties in generating algebraic terms involving linear, simultaneous, and quadratic equations? Do the students have difficulties in crating algebraic expression, and obtain the final require algebraic equation while translating words problems into linear, simultaneous, and quadratic equation? This knowledge would enable Mathematics teachers effectively teach word problems to students regardless of the students' gender.

Gender is the biological condition that indicates whether an individual is male or female. It is societal coined concept that attributes roles, responsibility, and cultural expectations to male and female members of the society (Akande & Ajisebiyawo, 2018). Society has covertly assigned some roles predominately to a particular gender. In terms of academic related outcomes, such as students' achievement, or difficulties in learning, there seems to be no established direction with respect to male and female learners. A meta-analysis study has revealed that, in Mathematics tasks that involves word problems, male students outperformed their female counterparts (Anghel et al., 2019). However, some studies show that female had better academic achievement in Mathematics than male student (MTeucci & Mignani, 2021). More so,

the role of gender on learning outcome may even depend on the level of students' education. For example, it is noted that gender is an influential factor on students learning of Mathematics whereby at senior classes, the gender gaps favour male students but favour female students at junior classes (Breda & Napp, 2019). However, it was surprising that at primary school level, male and female pupils did not show any significant difference in their achievement in Mathematics (Third International Mathematics and Science Study [TIMSS], 2018). In recent times, it noted that despite the increase in the number of female students in STEM related fields, Mathematics remains males dominated subject (Andersen & Smith, 2023). The controversial effect of gender on learning outcome seems to be an old one that would keep calling for more evidence. Unfortunately, while there is still no consensus on the influence of gender on students' learning outcome, there is even little or no study that have examined the roles of gender on students' difficulties in dealing with word problems. Since evidence has shown that word problems is the most difficult areas for secondary school Mathematics students, understanding the role of gender in this important area seems not only imperative but could be said to be timely. Hence, this study seeks to find out if gender actually has an influence on secondary school students' challenges in translating word problems to algebraic equations. Evidences have shown that most frequently occurring difficult areas in the secondary education Mathematics is in the algebraic word problems. The consequence of students' persistent poor achievement in Mathematics is that the growing demand for technological independence of Nigeria may not be fully achieved. Hence, there is a need for urgent solution to address students' poor achievement in Mathematics. While some studies have attempted to solve this problem by ambiguously identifying and classifying student errors in solving words problems, these studies couldn't provide specific information enough to guide teacher for effective interventions. This could even be the reason students still struggle to learn word problems. Worryingly, most of the researchers who analyzed student' difficulties in solving word problems failed to explore the influence of gender on students' difficulties in solving word problems given the age long controversial role of gender in students' learning outcomes. Of course, filling this knowledge gap may give teachers and other stakeholders focus on addressing students' weaknesses in algebra. For this reason, the problem of this study, therefore is: what are the difficulties senior secondary school students encounters in translating algebraic word problems to algebraic equation and what could be the influence of gender on the difficulties encountered by senior secondary school student in translating algebraic word problems to algebraic equations?

Purpose of the Study

The overall aim of this study was to assess senior secondary school students' difficulties in translating algebraic word problems to algebraic equations. Specifically, the study seeks to determine:

1. The difficulties secondary school students have in translating algebraic word problems to algebraic equations.
2. the influence of gender on the difficulties secondary school students has in translating algebraic word problems to algebraic equations.

Research Questions

The following research questions were formulated for the study:

1. what are the difficulties secondary school students have in translating algebraic word problems to algebraic equations?
2. What the influence of gender on the difficulties secondary school students has in translating algebraic word problems to algebraic equations?

Hypotheses

The following hypotheses tested at 0.05 level of significance guided the study;

H₀₁: There is no significant influence of gender on the difficulties secondary school students have in translating algebraic word problems to algebraic equations.

Materials and Methods

Research Design

This study followed a survey approach. The study was conducted at Nsukka Local Government Area in Enugu State, Nigeria. Nsukka LGA is one of the three Local Government areas in Nsukka Education Zone. Nsukka LGA is also one of the 17 LGAs in Enugu State, Nigeria. Nsukka Local Government Area is located in the South-Eastern Nigeria. The residents of this area are predominantly the Igbo tribe. The occupation of the residents includes farming, trading, civil and public servants, and artisans. Large number of the residents are students. The prominent educational institution in the area is the University of Nigeria. The population of the study consisted of 2388 SS2 Mathematics students from the 32 public secondary schools in Nsukka Local Government Area Enugu State (PPSMB, 2023). The sample for the study was 140 SS2 Mathematics comprising of 58 male students and 82 female students. Proportionate stratified random sampling was adopted in drawing the participants for this study.

Tools for Data Collection

The instrument applied for data collection was entitled 'Algebraic Word Problems Test (AWPT)' constructed by the researcher. The AWPT was made up of two sections: Section A which elicited personal information

(eg. Gender) and Section B which contains three essay questions on word problems. Out of the three questions, the first one was on word problems leading to simple linear equations, the second was on word problems leading to simultaneous equation and the third was on word problem leading to quadratic equations. A scoring rubric was developed to identify students' difficulties in translating the word problems to algebraic equation (See Appendix A for the question with the corresponding rubrics). The instructions for the questions only required students to translate the word problems into algebraic equations and not to solve them. Hence, the scoring rubric did not go beyond generating the equation, although some students attempted solving the equations. The students were given adequate time 30 minutes and were asked to generate algebraic equation for the word problems. The difficult students had in translating word problems to algebraic equation were categorized using the scoring rubric developed by the researcher. The instrument was submitted for validation using three experts (two in Education Mathematics Unit and one in Pure and Applied Mathematics) from the University of Nigeria, Nsukka. The experts were further requested to make any comment or/and suggestion that could improve the quality of the instrument and the study generally. The corrections and modifications were affected in the final version of the instrument. The AWPT was subjected to trial testing. The trial testing was carried out by administering the AWPT on 20 students from one school outside the study area. The answer scripts obtained from the students were subjected for inter-rater reliability using Kedall's Coefficient of Concordance (W). Three Mathematics teachers were given the scoring rubric developed by the researcher and were asked to rank the 20 students' scripts in terms of their difficulties in translating algebraic word problems to algebraic equation. The resulted yielded reliability index of $W=0.81$. This implied that the instrument was reliable as the reliability index was above 0.70 considered by Nworgu (2015) as an indication of reliable instrument. The researchers first obtained permission from the principals of the schools and then briefed the teachers on the purpose of the study. Having intimated the teachers, the researchers adopted on-the-spot administration and collection of the questionnaire in order to ensure high return rate. The researchers with the help of the mathematics teachers administered the AWPT to all the SS2 students in the sampled secondary schools and their responses collected immediately. Research question one (1) was answered using frequency and percentage. While Research question two (2) was answered using mean and standard deviation, the hypothesis was tested using t-test at 0.05 level of significant. Students are said to experience difficult in a given step (difficult area) in translating word problems to algebraic equation when the percentage of student that have difficulties in that step (difficult area) is 50% and

above, otherwise the difficult is said not to be difficult for the students. The 50% was the benchmark for identification a particular content area as difficulty.

Results

Research Question One: what are the difficulties secondary school students have in translating algebraic word problems to algebraic equations?

S/N	Areas of Difficulties	N	%	Remarks
1	Inability to represent unknown variables with letters	10	14.29	ND
2	Inability to generate linear algebraic terms.	38	54.29	D
3	Difficulties in creating algebraic expressions	36	51.43	D
4	Inability to equate two algebraic terms or expressions as required by the question.	46	65.71	D
5	Inability to represent two unknown variables with two distinct letters when translating algebraic word problems to simultaneous equation with two unknowns	10	14.29	ND
6	Inability to generate the two distinct equations for algebraic simultaneous	64	91.43	D

	equations			
7	Inability to create quadratic terms (such as $1.80/x$)	66	94.29	D
8	Inability to generate quadratic algebraic expressions.	59	84.29	D
9	Inability to write the required final quadratic equation	66	94.29	D
	Grand Percentage		62.70	D

Key: N=Number of students, %= percentage of students having difficulties, D=Difficulty, ND=Not Difficulty

Table I: Frequency and Percentage of Difficulties Students encounter in Translating algebraic word problems to Algebraic Equations

Table 1 shows percentage of students who had difficulties in the nine difficult areas ranged from 14.29% to 94.29%. The percentage of students' who had difficulty in representing unknown variables with letters (such as, x, y, n, a, etc) in translating algebraic word problems to simple linear equations was 14.29%. Similarly, the percentage of students who had difficulty in representing unknown variables with two distinct letters when translating algebraic word problems to simultaneous equation with two unknowns was also 14.29%. These percentage values are below 50.00% benchmark stated for the indication of students' difficulty areas in Translating algebraic word problems to algebraic equations. It implies that students had no difficulties in the use of letter to represent unknowns in both single linear and simultaneous equations in two unknowns. However, the percentage of students' difficulties in the remaining six difficulty areas ranged from 51.43% to 94.29%. These percentage values were above the 50.00 benchmark which implies that these are some the difficulty areas the students' had in translating algebraic word problems to algebraic equation.

Research Question Two: what is the influence of gender on secondary school students' difficulties in translating algebraic word problems to algebraic equations?

Gender	Mean	SD	Remarks
Male	38.14	10.58	Females encountered more difficult
Female	39.44	11.36	

Table 2: Mean and Standard Deviation for Comparing Difficult by Gender

Data in the Table 2 shows that male students had mean difficulty score ($M=38.14$, $SD=10.58$) in translating algebraic word problems to algebraic equation. On the other hand, the female students had ($M=39.44$, $SD=11.36$) in translating algebraic word problems to algebraic equations. The higher standard deviation value for the female group indicated that their raw scores had more variation from their mean scores as compared to their male counterparts with standard deviation value of 10.58. The female students had more difficulties than their male counterparts in Translating algebraic word problems to algebraic equations. A t-test was performed to ascertain whether the mean difference was a mere chance occurrence or genuine difference.

Hypothesis One: There is no significant influence of gender on the difficulties secondary school students have in translating algebraic word problems to algebraic equations.

Gender	N	Mean	SD	t	df	P	Decision
Male	5	38	10	0	1	0	Not Sig
Female	8	.1	.5	.	3	.	
Male	8	39	11	6	8	4	Sig
Female	2	.4	.3	9		9	
Male	4	6					
Female	4	6					

Table 3: A t-test for Significance Influence of Gender

An independent sample t-test was further performed to compare the difficult scores for male and female students in translating algebraic word problems to algebraic equations as shown in Table 3. There was no significant difference in the difficulties encountered by male students ($M = 38.14$, $SD = 10.58$) and female students in translating algebraic word problems to algebraic equations ($M = 39.44$, $SD=11.36$; $t(138) = 0.69$, $p = 0.49 > 0.05$). The null hypothesis was therefore, rejected at 0.05 level of significance, which means that gender does not play any role on

the difficulties students encounter in translating algebraic word problems to algebraic equations.

Discussion

This study examined the difficulties students encounter in translating algebraic word problems to algebraic equations. This study is important considering the persistent poor performance of students in algebra generally and word problems in particular. The findings of the study showed that students' difficulties in translating word problems to algebraic equations include inability to generate linear algebraic terms, difficulties in creating algebraic expressions such as $5x+2$, $3y+5$, $7-2y/3$, etc., inability to equate two algebraic terms or expressions as required by the question, inability to generate the two distinct equations for algebraic simultaneous equations, inability to create quadratic terms (such as $3x^2$, $5y^2$, etc.), inability to generate quadratic algebraic expressions (such as $3x^2 +7$, etc.), and Inability to write the required final quadratic equation. These findings are in consonance with Aforklenu and Bukari (2023) who noted that students' poor knowledge of Mathematics lexicons and terminologies negatively affect students' ability to solving Mathematics word problems. The study also corroborated Teoh et al. (2024) that students' have challenges learning algebra. The reason for this finding could be that students have not fully mastered the terminology associated with Mathematics. Students need to understand the meaning of terminologies such as: and, product, sum, is, result, difference, ago, 'in x years' time', factor, interchange, varies directly or inversely, add, costs, among others in other to effectively use them to form mathematical terms and operation which would give rise to the required algebraic equations. Interestingly, the English meanings of these terms that are expected to enable students translate word problems into mathematical equation are the same even when they are used in Mathematics context. This implies that when they are lacking, in terms of poor knowledge of the terms, they are likely to perform below expectation in algebraic task that involve the terms. Although, high proficiency in English language may not directly translate to high ability algebra (Suhr et al., 2024). High language proficiency is a powerful tool in understanding of algebraic word problems (Sandilos, et al., 2020). This implies that for effective teaching of word problems to take place, Mathematics teachers are expected to ensure that the students acquire sufficiency knowledge of terms that are often used in in word problems. Of course, there are many strategies teachers could adopt to facilitate students' mastery of terms used in algebraic word problems. First, they could provide the students with a comprehensive list of the commonly use English terms and their meanings. Secondly, they could show the students how some of the simple terms are used. For example, the six

and five ($6+5$), the sum of X and Y ($X+Y$), two times Y ($2Y$), two times Y is four ($2Y=4$), the students should be made to relate the terms in the word problem with the mathematical symbols and operations in the equations. More importantly, the teachers should know that while the students can easily use letters to represent an object as demand from the tasks, most students could not solve beyond this step. As a matter of fact, the students' difficulties mostly are in translating word problems to simultaneous and quadratic equations. This implies that the terms involved in simultaneous and quadratic equation should be properly explained to the students by building on their knowledge of simple linear equations.

The finding revealed that there was no significant difference in the difficulties encountered by male students and female students in Translating algebraic word problems to algebraic equations. These findings were not surprising, giving that, in recent times, both male and female students are encouraged to pursue science related disciplines. This finding aligned with Ajai and Imoko (2015) who reported that gender had no role on students' learning of Mathematics as both male and female students demonstrated similar abilities to collaborate and compete in solving Mathematics tasks. The findings are in agreement with Ogbu (2018) that gender had no significant role on teachers' mastery of Mathematics contents. Lack of significant difference in the difficulties encountered by both male and female students may be as a result of the teaching methods used by the teachers in teaching students' Mathematics which gave no particular group of student advantages over the others. In addition, it seems that gone were those days when mathematics was perceived as discipline made for the male folks. Large number of mathematics teachers are female and this could serve as motivation to female students that they could do as well as their male counterparts do even better. The implication of this findings is that no special attention should be given to a particular gender in the efforts to enhance their word problems solving ability. In other words, the teachers should see the students a group of students with a common difficult in translating algebraic word problems to mathematical equation. Hence, gender friendly approach is expected to be incorporated into teaching and learning of algebra in schools.

Conclusion

The students' difficulties in translating algebraic word problems to mathematical equations have been explored. Out of nine difficult areas outlined, students had difficulties in seven areas which revolved around Inability to generate linear algebraic terms, difficulties in creating algebraic expressions such as $5x+2$, $3y+5$, $7-2y/3$, etc., inability to equate two algebraic terms or expressions as required by the question,

inability to generate the two distinct equations for algebraic simultaneous equations, inability to create quadratic terms (such as $3x^2$, $5y^2$, etc.), inability to generate quadratic algebraic expressions (such as $3x^2 + 7$, etc.), and Inability to write the required final quadratic equation. While using of letters to represent an object was not difficult for the students, students' difficulties in other steps in translating word problems to algebraic equations were obvious. Hence, a comprehensive seminar and workshop on word problems should be organized by government from time to time for teachers on how to impact the knowledge of word problem translations to the students. Teachers are expected to use the expert knowledge to teach the students how to translate word problems to algebraic equations. Teachers should encourage the students to work hard so as to clear all difficulties they do encounter while translating algebraic word problems to algebraic equation. More so, the need for students to change their negative impression about word problems and try to see their major difficult areas so as to consciously put more time in learning them cannot be overstated. Mathematics text book authors should try to give more examples on students' major difficult areas while the government should allow only qualified Mathematics teachers to teach the students. Curriculum planners should plan the curriculum in such a way that more time will be allocated to students' difficult areas in Mathematics such as word problems. Parents should try to help their wards by providing Mathematics tutor for them who will help explain some of these words problem concepts to them to enable them translate to Mathematical equations.

Female students, although had more difficulties in translating algebraic word problems to algebraic equations. There was no significant influence of gender on the difficulties secondary school students encounter in translating algebraic word problems to algebraic equations, implying that teachers need not pay more attention to a particular gender in the attempt to enhance students' difficulties in word problems. Therefore, the focus of researcher should be on how to apply gender friendly strategies in tackling students' difficulties in translating word problems into mathematics equations.

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Appendix A
Rubric FOR Identification of Students' Difficulties in translating Word Problems to Algebraic Equations

Question One		
Word problems involving linear equation		
Questions	Nature of Difficulties which could be Identified	Criteria for Identification of Difficulties
<p>1. A boy is one-fifth of his father's age. In three years' time, the sum of the boy and his father's age will be 72 years. Translate the word problem into algebraic equation</p>	<p>a. Inability to represent unknown variables (eg age) with letter such as x.</p> <p>b. Inability to generate linear algebraic terms.</p> <p>a. Difficulties in creating algebraic expressions such as $3(x+5)$.</p> <p>b. Inability to equate two algebraic terms or expressions as required by the question.</p>	<p>a. No letter was used at all.</p> <p>b. Two different letters were used when one letter should be used.</p> <p>c. No evidence of obtaining $(x+5)$</p> <p>d. No evidence of $3(x+5)$ obtained</p> <p>e. No evidence of equating $3(x+5)$ to 36 thus: $3(x+5)=36$</p>
<p>2. In a two digit number. The units digit is thrice the tens digit. If 36 is added to the number, the digits interchange their place. Find the number.</p>	<p>ai. Inability to represent two unknown variables with two distinct letters (eg x and y) when translating algebraic word problems to simultaneous equation with two unknowns.</p> <p>aii. Inability to generate the two distinct equations for algebraic simultaneous equations.</p> <p>aiii. Inability to generate the two</p>	<p>ai. Using the same letter to represent the digit in unit and tens</p> <p>aii. Not using letters at all to represent the digits.</p> <p>aiii. No evidence of obtaining $10y + x$, and $10x + y$</p> <p>aiv. In ability to obtain the equations $x = 3y$ and $10y + x + 36 = 10x + y$ or their equivalents</p>

	distinct equations for algebraic simultaneous equations	
3. Sunny bought some biscuits for 1.80 naira. If the biscuits had been 10 kobo a packet cheaper, he would have bought three more for his money. Obtain the equation representing the question.	<p>3i. Inability to create quadratic terms</p> <p>3ii. Inability to generate quadratic algebraic expressions (such as $3x^2 + 7$, etc.)</p> <p>3iii. Inability to write the required final quadratic equation</p>	<p>a. No letter was used to represent the number of packs bought.</p> <p>b. Not representing the cost of each pack by $1.80/x$ kobo</p> <p>c. Not representing cheaper by 10 kobo by $(180/x - 10)$ kobo</p> <p>d. Not representing 3 more packs by $(x+3)$ packets</p> <p>e. No evidence of the final equation $180/x - 10 = 180/(x+3)$</p>

References

- Abdul-Rauf, M. & Akanmu M.A (2019). Effect of interactive basic programme on students' performance in linear and quadratic inequalities in Saki, Oyo State. *Abacus: The Journal of the Mathematical Association of Nigeria*, 44(1), 28-36.
- Adu, E., Assuah, C. K., & Asiedu-Addo, S. K. (2015). Students' error in solving linear equation word problems: Case study of a Ghanaian senior high school. *African Journal of Education Studies in Mathematics and Science*, 11(2015), 17-30.
- Adu, E., Assuah, C. K., & Asiedu-Addo, S. K. (2015). Students' errors in solving linear equation word problems: Case study of a Ghanaian senior high school. *African Journal of Educational Studies in Mathematics and Sciences*, 11, 17–30.
- Aforklenu, D. K., & Bukari, H. I. (2023). Algebra word problem difficulties: A case study in Tema Education Metropolis in Ghana. *Journal of Mathematics and Science Teacher*, 3(1), em036. <https://doi.org/10.29333/MThsciteacher/13133>
- Ajai, J.T. & Imoko, I.I. (2015). Gender differences in mathematics achievement and retention scores: A case of problem-based learning method. *International Journal of Research in Education and Science (IJRES)*, 1(1), 45- 50.

- Akende, A. & Ajisebiyawo, A. S. (2018). Women, inclusive government and sustainable development goals in Nigeria. *Sokoto Journal of the Social Sciences*, 8(3), 315-330.
- Andersen, I. G. & Smith, E. (2023). Gender differences in math and science academic self-concepts and the association with female climate in 8th grade classrooms. *The Journal of Early Adolescence* 44(5) <https://doi.org/10.1177/02724316231188682>
- Anghel, B., Rodríguez-Planas, N., & Sanz-de-Galdeano, A. (2019). Culture, Gender, and Math: A Revisitation. <https://ideas.repec.org/p/iza/izadps/dp12371.html>
- Breda, T. & Napp, C. (2019). Girls' comparative advantage in reading can largely explain the gender gap in math-related fields. <https://doi.org/10.1073/pnas.1905779116>
- Bullock, G. P. (2015). *Algebra in words presents: word problems decoded* (1st ed.). SAGE Publications Inc.
- Ekwueme, C.O (2013). *Mathematics teaching and learning in school*. Calabar: Radiant Venture Nigeria Limited.
- Jimba, R. W., & Angwagah, U. N. V. (2012). Importance of Mathematics to Science and Technology. *Journal of Science, Technology, Mathematics*
- Igbojinwaekwu, P. C. (2020). Impact of videotaped instruction on learning of Mathematics at senior secondary school level. <https://www.globalacademicgroup.com/journals/pristine/IMPACT%20OF%20VIDEOTAPED%20INSTRUCTION%20ON%20LEARNING%20OF%20MATHEMATICS.pdf>
- Iyoke, J.O. (2015), Effects of Mathematics Games on Secondary School Students Achievement, Interest and Retention in Algebra. Unpublished M.Ed. theses, ESUT, Enugu.
- Moleko, M. M., & Mosimege, M. D. (2020). Teachers' and learners' experiences for guiding effective teaching and learning of Mathematics word problems. *Issues in Educational Research*, 30(4), 1375–1394.
- MTteucci, M., & Mignani, S. (2021). Investigating gender differences in Mathematics by performance levels in the Italian school system. *Studies in Educational Evaluation*, 70, 101022.
- Murray, H. (2012). Problems with word problems in Mathematics. *Learning and Teaching Mathematics*, 2012(13), 55–58.
- Ntibi, J. E. & Edoho, E.A. (2017). Influence of school location on students' attitude towards Mathematics and basic science: European Center; *British Journal of Education*, 5(10) 76-85
- Nworgu, B. G. (2015). *Educational Research Basic Issues & Methodology*. University Trust Publisher: Nsukka Enugu.
- Ogbu, S. Ugwu, C. B. A., Ngwu, A. N., Aniaku, O. L, Ugwu, T. U., Nwakwo, A. L Abamu, J. Ogbanufe, U. O. & Agugoesi, O.

- J. (2024). Modelling the Effects of Selected Sociological and Psychological Factors on Secondary School Students' Achievement in Mathematics. *Multicultural Education*, 10(5). <http://ijdri.com/me/wp-content/uploads/2024/05/4.pdf>
- Ogbu, S., & Ugwu, F. C. (2023). Development and validation of mathematics persistence scale for secondary school students. *International Electronic Journal of Mathematics Education*, 18(4), em0756. <https://doi.org/10.29333/iejme/13742>
- Ogbu, S. & Anyaegbu C. C. (2021). Content analysis of WAEC chief examiners reports on students' weakness in May/June WASSCE Mathematics examinations from 2008 to 2019. *International Journal of studies in Education*, 17(1), 167-174.
- Ogbu, S. & Anyaegbu, C. C. (2018). Assessment of teachers' mastery of the newly introduced content areas in the senior secondary school Mathematics curriculum. *Review of Education*, 30 (1), 65-74.
- Pandey, B. D. (2017). A study of mathematical achievement of secondary school students. *Int.J.of Adv. Res.*, 5(12), 1951-954. <https://www.journalijar.com>
- Rembert, D. M., Mack, N. A., & Gilbert, J. E. (2019). Exploring the needs and interests of fifth graders for personalized MTh word problem generation. *Proceedings of the 18th ACM International Conference on Interaction Design and Children, IDC 2019*, 592–597. <https://doi.org/10.1145/3311927.3325309>
- Salminen, J, Khanolainen, D, Koponen, T, Torppa, M. & Lerkkanen, M. K. (2021). Development of numeracy and literacy skills in early childhood—a longitudinal study on the roles of home environment and familial risk for reading and math difficulties, *Frontiers in Education*, 6.
- Sandilos, LE, Baroody, AE, Rimm-Kaufman, SE & Merritt, E. G. (2020), 'English learners' achievement in mathematics and science: examining the role of self-efficacy. *Journal of School Psychology*, vol. 79, 1–15.
- Sugiarti, L. & Retnawati, H. (2019) Analysis of student difficulties on algebra problem solving in junior high school. *J. Phys.: Conf. Ser.*, <https://doi:10.1088/1742-6596/1320/1/012103>
- Suhr, MP, Nese, JFT & Alonzo, J (2021), Parallel reading and mathematics growth for English learners: does timing of reclassification matter? *Journal of School Psychology*, 85, 94–112.
- Taley, B.I. (2022). Teachers and student views on Mathematics word problem-solving task at senior high school level. *FNAS Journal of Mathematics and Science Education*, 3(2), 39-49.

- Taley, B.I. (2022). Teachers and students views of mathematics word problem-solving task at high school level. *FNAS Journal of Mathematics and Science Education*, 3(2), 39-49.
- Teoh, S. H. Ghazali, I Singh, P. Cheong, T. H, & Boon, Z. H. J. (2024). Students' algebraic proficiency and attitude towards learning algebra. *ASM Sc. J.*, 19, <https://doi.org/10.32802/asmscj.2023.1475>
- Wahyuni, R., Prabawanto, S & Herman, T. (2020). Students' difficulties in solving algebra task in middle school. *International Conference on Mathematics and Science Education 2019 (ICMScE 2019)*. *Journal of Physics: Conference Serie*, <https://doi:10.1088/1742-6596/1521/3/032071>
- Wiberg, M 2019, 'The relationship between TIMSS mathematics achievements, grades, and national test scores'. *Education Inquiry*, 10(4); 328–343.

EARLY EDUCATION: CHALLENGES AND PERSPECTIVES FOR DEBUTANT TEACHERS

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Abstract: *The study focuses on the transition of debutant teachers from theoretical training to teaching practice. It also identifies significant challenges they face in their first career years and examines the experiences of debutant teachers in their initial teaching years, exploring sustainment opportunities, adaptation methods, and support measures. The research investigates resilience strategies developed by these beginner teachers, which include stress management techniques and innovative approaches to building relationships. It also proposes solutions to enhance institutional support, which could enhance job satisfaction and to retain debutant teachers within the educational system. The primary methodological tool is an anonymous questionnaire distributed online in the Cluj and Sibiu counties, structured around four key areas: identifying main challenges, exploring opportunities, analyzing adaptation methods, and proposing solutions and recommendations in order to support the integration and professional development of teachers in their early career, in accordance to the needs of the early education for children. Among the general conclusions of the survey, it is highlighted the importance of mentorship and both initial qualification and continuous training, addressing specific topics such as communication with parents, managing administrative tasks, and supporting children with special needs. Therewith, the research emphasizes that a healthy organizational culture, focused on collaboration and continuous development, increases the efficiency of the educational process, enhances the well-being of the school community, and reduces the risk of early-career teacher abandonment.*

Key words: *debutant teachers; teaching practice; early career integration; teacher abandonment risk; communication with parents; mentorship; initial qualification; continuous training.*

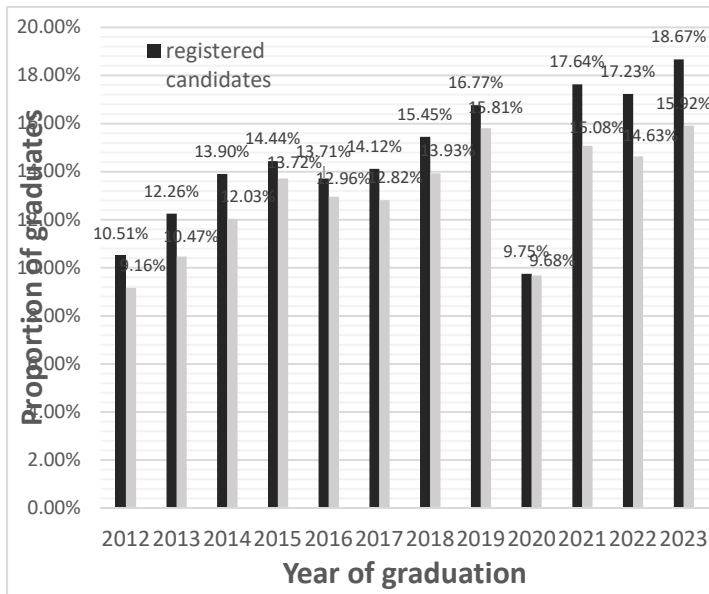
Introduction

The transition from theoretical preparation for teaching to the practical execution of educational activities represents a major challenge for teachers at the starting stage of their careers. Debutant teachers begin their professional way driven by ambition and enthusiasm, many of them being within formal contractual relation for the first time in their life. In this context, a series of determination factors could influence their professional evolution, the retention rate into the educational system, as well as the development of their creativity, performance and innovation capacity that they will demonstrate in the future.

The professional integration of debutant teachers in the early education domain is, therefore, an essential process, not only for their professional success, but also for providing quality education to preschoolers. Debutant teachers need constant and appropriate support to build solid careers and provide quality education.

Context and justification

Although not always the first option for graduates and, in some cases, perceived as a compromise solution, in Romania, the teaching profession continues to attract interest in the labor market, due to its stable program and predictable income. According to statistical data provided by the Ministry of Education (2021, 2022, 2023), there is a significant increase in interest in the teaching career, seen in almost doubling the number of graduates participating in the annual national tenure competition. A possible explanatory factor for this increased interest could be the temporal proximity between the moments of graduation and job competition for the young teachers.



Note. The proportions of graduates who registered for the tenure competition and the proportions of graduates who participated in the evaluation tests each year are presented.

Figure 1. Participants in the preuniversity school teaching tenure competition, current series (% of total)

There is a discrepancy between the number of those interested in accessing a job in pre-university school system and the number of those who complete the selection process, in other words, between those who just manifest a wish for a teaching job and those who really take the exam and are evaluated and graded. However, the data does not indicate statistically significant differences in the results achieved by candidates from current cohorts in comparison with the candidates from previous cohorts.

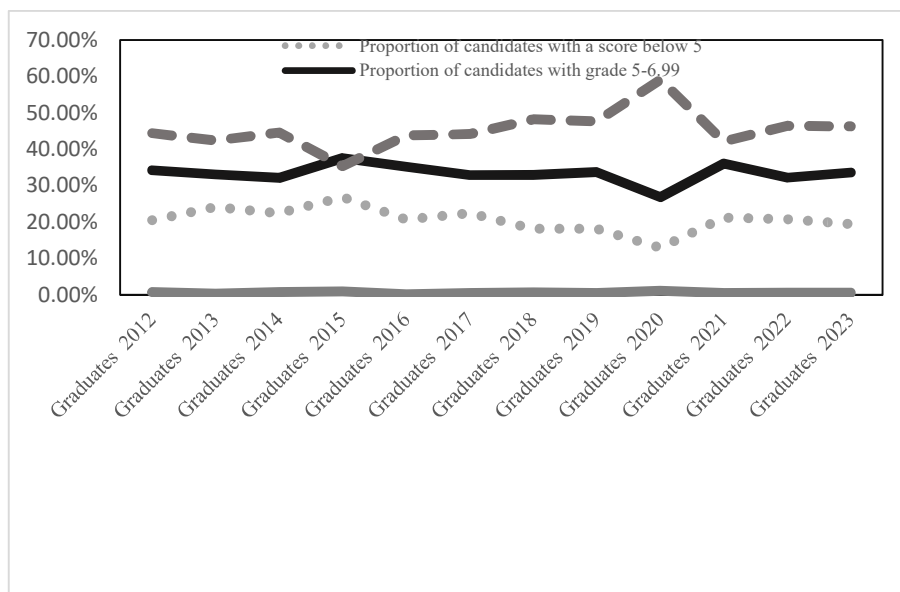
Year	Proportion of candidates with a score below 5	Proportion of candidates with grade 5-6.99	Proportion of candidates with grade 7-9.99	Proportion of candidates with grade 10	
2012	Graduates from previous series	17,84%	32,68%	48,63%	0,85%
	Graduates 2012	20,51%	34,29%	44,47%	0,73%
2013	Graduates from previous series	18,96%	31,86%	48,63%	0,55%
	Graduates 2013	24,13%	33,14%	42,41%	0,32%
2014	Graduates from previous series	18,74%	31,18%	49,47%	0,61%
	Graduates 2014	22,51%	32,18%	44,61%	0,70%
2015	Graduates from previous series	23,74%	36,80%	39,26%	0,20%

2016	Graduates 2015	26,85%	37,60%	35,45%	0,90%
	Graduates from previous series	18,67%	34,68%	46,24%	0,41%
2017	Graduates 2016	20,72%	35,27%	43,87%	0,14%
	Graduates from previous series	19,29%	33,07%	47,06%	0,57%
2018	Graduates 2017	22,44%	32,92%	44,19%	0,46%
	Graduates from previous series	16,48%	33,81%	49,13%	0,58%
2019	Graduates 2018	18,19%	32,93%	48,27%	0,61%
	Graduates from previous series	17,32%	34,30%	47,90%	0,47%
2020	Graduates 2019	18,14%	33,71%	47,71%	0,44%
	Graduates from previous series	12,60%	26,61%	59,80%	0,99%
2021	Graduates 2020	12,98%	26,83%	59,13%	1,06%
	Graduates from previous series	18,26%	35,02%	46,19%	0,52%
2022	Graduates 2021	21,24%	36,11%	42,22%	0,43%
	Graduates from previous series	16,31%	32,96%	50,14%	0,59%
2023	Graduates 2022	20,80%	32,21%	46,47%	0,52%
	Graduates from previous series	16,21%	33,40%	49,85%	0,53%
	Graduates 2023	19,50%	33,64%	46,32%	0,53%

Note. The data is public (edu.ro) and presents the comparative distribution of evaluated candidates, depending on the year of graduation and the grades obtained.

Table 1. Data of achieved results situation to the written part of the teaching tenure competition for preuniversity school jobs

Competitors who scored at least 7 in the tenure competition constitute the most significant proportion of the total candidates; a result recorded regardless of their graduation year. Thus, annually, over 40% of candidates achieve scores that allow them to choose a position in the education system. The results obtained in the human resources selection process within the education system may indicate a good to very good level of theoretical preparation among debutant teaching staff. However, challenges arise in the practical application of theoretical knowledge.



Note. The evolution of the results by grade range is presented. Approximately a quarter of the candidates in a cohort do not obtain grades above 5.

Figure 2. The range of graduates' scores from current cohort achieved in the tenure competition

At the beginning of their careers, debutant teachers get in the education system eager to contribute to the improvement of education both inside and outside the classroom (Levenson, 2014). However, their teaching initial experiences raise concerns about the loss of valuable professional potential, both in terms of the quality and quantity of their contributions to educational practice (Kelchtermans, 2017). Various studies indicate that these teachers' ideas often face resistance from colleagues or are not taken seriously (Correa et al., 2015; Kessels, 2018). Other studies report that a significant percentage of these debutant teachers leave early their profession, with figures ranging from 15% to 40%, with notable differences between countries, urban/rural areas and educational sectors. The highest abandonment rates are recorded in the first year of working (Noordzij and Van De Grift, 2020). This decision is usually driven by factors such as an unpleasant school atmosphere, lack of support, unclear expectations, lack of communication or strained relationships (den Brok et al., 2017).

Research objectives and questions

Debutant teachers have a crucial impact on the education system, and their first years of activity are decisive not only for their professional development, but also for the quality of education in the long term. The first survey's objective aims to explore *the main challenges* they face at

the start of their careers – from adapting to the diverse dynamics of the classroom and managing administrative tasks to build relationships with colleagues and students. At the same time, the research examines existing *support opportunities*, such as mentoring and in-service training programs, which play a key role in strengthening the careers of these teachers and increasing the quality of the educational process they support. The third objective approaches *the adaptive strategies* that debutant teachers develop to address challenges and capitalize on available opportunities. Their ability to navigate the complexities of their early career years is often supported by resilience and innovative approaches to organizing activities, interacting with students and colleagues, and managing stress. Finally, the research *proposes specific solutions and recommendations* to support the integration and continuous development of these teachers in schools. These suggestions aim to create a more supportive environment better tailored to their needs, ensuring not only their professional success but also a high-quality educational process for students.

The first research question analyzes the most common challenges faced by debutant teachers in the first years of their career. Adapting to diverse classroom demands, managing administrative workload and maintaining a balance between professional and personal demands are aspects that may significantly influence the experience and efficiency of a teacher at the beginning of his or her career.

The second question aims to identify the professional opportunities perceived by debutants as the most useful for their integration and development. In this context, mentoring programs, continuous training courses and access to educational and pedagogical resources become key elements for developing a sustainable career.

The third one explores the adaptation and resilience strategies that these teachers develop in order to address the challenges. Depending on the level of support and resources available, novice teachers can develop their own methods of managing stress, organizing activities, and maintaining motivation. Finally, the study focuses on the relationship between the support provided by school institutions and the level of satisfaction and retention of debutant teachers within the educational system. To the extent that support and resources are available and tailored to teachers' needs, the debutants may feel greater job satisfaction and an increased likelihood of remaining in the educational system for a prolonged period.

These questions provide an overview of the experiences of debutant teachers, contributing to the initiation of more effective support strategies for their integration and development in the teaching career.

Methodology

The practical aim of the study is to identify and analyze the challenges, opportunities and adaptation strategies of debutant teachers in their first years of teaching. The research wants to provide relevant information for improving their integration process in the education system, offering solutions to support their professional development and for creating a more supportive environment in schools.

The data were collected through an anonymous *questionnaire* comprising 17 questions distributed online through the professional associations of early education teachers in Cluj-Napoca and Sibiu. The questions were structured around the four objectives of the research: identifying the main challenges, exploring opportunities, analyzing adaptation strategies and proposing solutions and recommendations to support the integration and development of debutant teachers within schools. The factual data collected includes years of teaching experience, chronological age of respondents as well as the type of educational institution where they currently work (nursery/kindergarten, public/private). Questions 5, 6, and 7 focus on understanding specific challenges and their impact on the daily activities of debutant teachers, which is essential for evaluating their professional context. Questions 8, 9, 10, and 11 allow for an analysis of the diversity of professional development activities and an evaluation of their impact on the professional growth and satisfaction of debutant teachers. Questions 12 to 15 aim to understand how debutant teachers adapt to challenges and identify the types of resources or measures that could contribute to their more effective integration into the educational system. Questions 16 and 17 address professional satisfaction and the motivational factors influencing teachers' decisions to remain in the profession.

This approach ensures a comprehensive understanding of the experiences of debutant teachers, providing actionable insights for enhancing their support systems and integration processes in the educational system.

Data analysis and main findings

The sample consists exclusively of female participants. (Note: according to “Report of the status of preuniversity education in Romania 2022-2023”, the share of female teachers in the early educational system is 99.7%). Teachers aged between 25 and 30 years represent the largest category within the sample, also having up to 3 years of teaching experience. The distribution of respondents by age and years of experience in education is as follows:

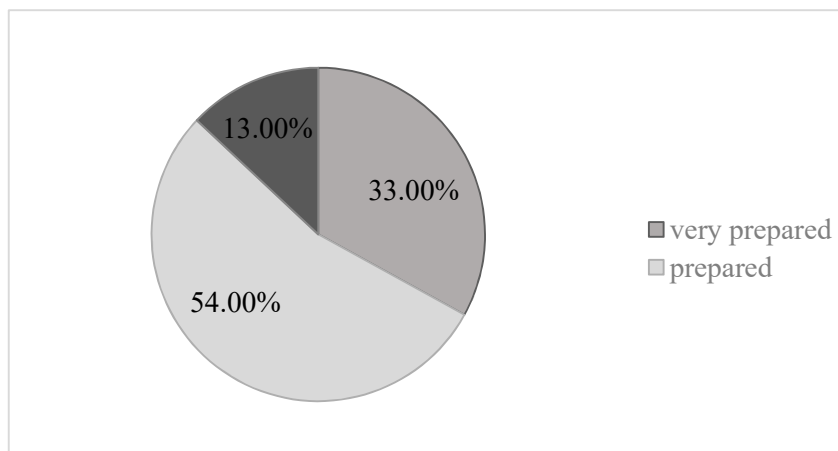
Age	
< 25 ani	19,51%
25-30 ani	46,34%
31-35 ani	14,63%
> 35 ani	19,51%

Table 2. The respondents' age

Experience in teaching (years)	
0-1	7,32%
1-2	19,51%
2-3	73,17%

Table 3. The number of teaching experience years

Respondents declare themselves prepared to address professional challenges in early education (Figure 3).



Note. We considered the answers to the question: To what extent do you feel prepared to face the challenges of early childhood education?

Figure 3. Assessment of the level of professional preparation for a teaching career in early education

As a first dimension of the present study, the following section details the statistics derived from the responses of the interviewed subjects regarding the main challenges faced by debutant teachers during their first years of activity. These include both a general overview of the issues and the distribution of specific aspects frequently encountered

during this period.

General Assessment of Issues Faced by Novice Teachers		Specific Aspects Encountered by Novice Teachers	
Aspect	Percentage	Percentage	Aspect
High volume of administrative tasks	66.70%	28.21%	Relationships with parents
Classroom and discipline management	56.40%	25.64%	Administrative documents and activities
Adapting to children's educational needs	51.30%	23.08%	Children with special educational needs (SEN) and behavioral problems
Communication with parents	35.90%	17.95%	Classroom management
Creating engaging and educational activities	33.30%	17.95%	Others (e.g., class size, children's age-specific characteristics, absenteeism, teaching creativity, etc.)
Other: _____	26.00%	10.26%	Material and teaching resources
Managing teaching resources	20.50%	7.69%	Horizontal collaboration relationships
Integration into the institution's team	10.30%	2.56%	No issues encountered

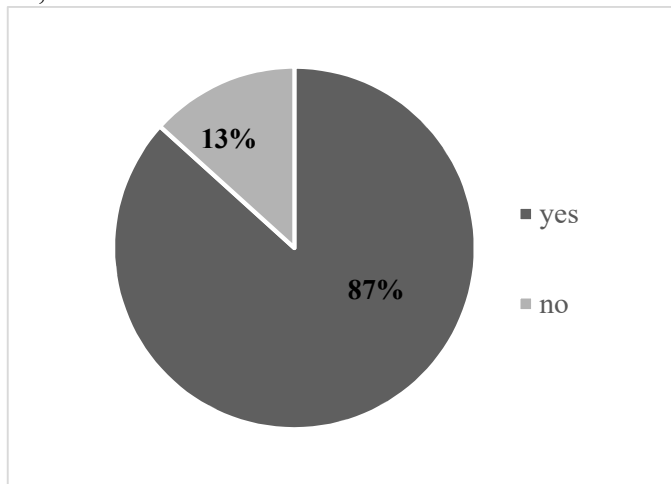
Note. These tables complement each other by showing both general trends and specific issues faced by novice teachers. The first table provides a holistic view, grouping challenges into broader categories. The second table focuses on detailed, specific aspects of challenges, offering a more granular breakdown.

Table 4. General and specific challenges during the starting teaching period

The second dimension of our study focuses on the opportunities that debutant teachers in early education believe they have to advance in their careers and achieve the best results in their work.

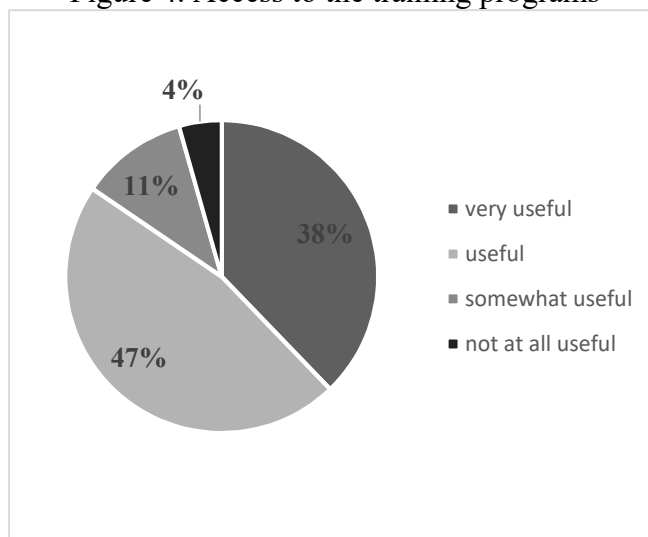
87% of the respondents to the question "Have you had access to training

programs or mentoring sessions specific to early education?" reported that they had access to various training or mentoring programs in their professional activity, considering them for the most part. Additionally, nearly all respondents (97%) believe there is a connection between participating in continuing education programs and performance and satisfaction in their professional work. The most appreciated support activities are methodology courses dedicated to early education and training sessions on highly practical topics: language development, educational alternatives, tailored approaches for children with special needs, etc.



Note. These are the answers to question no. 8 "Did you have access to the training programs or mentoring sessions specific to early education?"

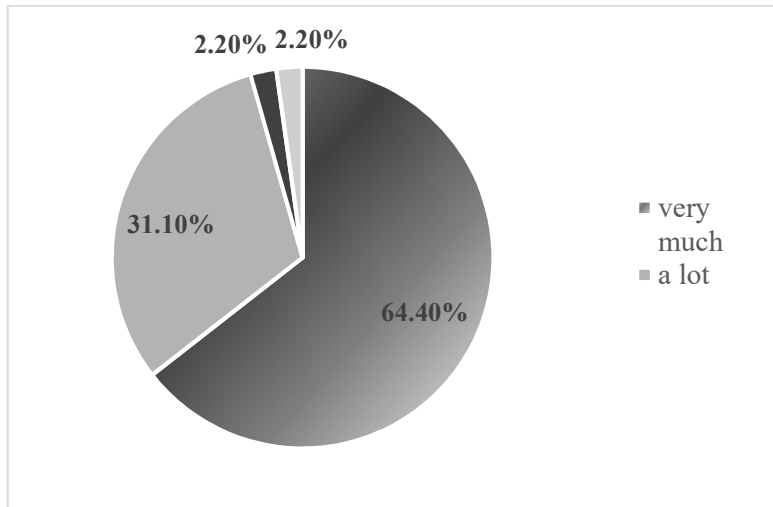
Figure 4. Access to the training programs



Note. These are the answers to question no. 9 "How useful do you

consider these opportunities to have been for your professional development?"

Figure 5. Training sessions' utility



Note. These are the answers to question no. 11 "To what extent do you think that access to these opportunities influences your satisfaction and efficiency in your work?"

Figure 6. Access to the training and professional satisfaction

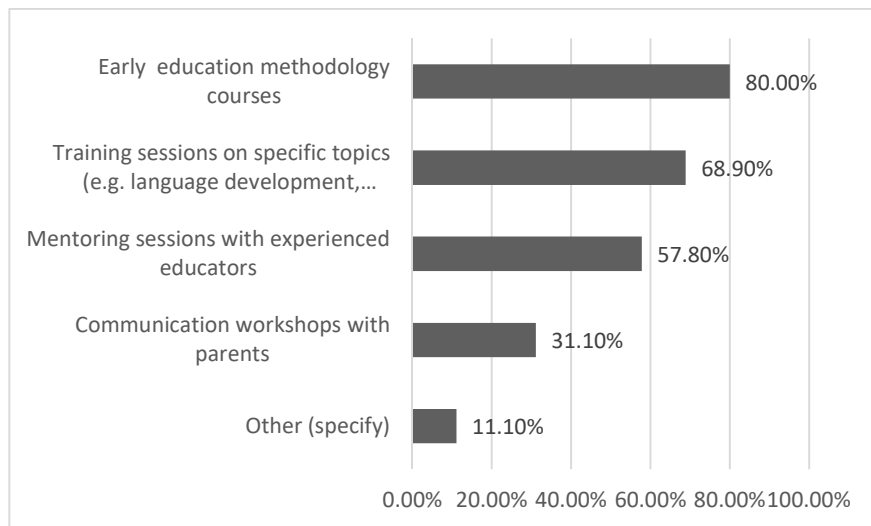


Figure 7. Types of the development activities needed

Note. These are the answers to question no. 10 "What type of professional development activities do you consider would be necessary to support you in early childhood education?"

The adaptation and resilience strategies developed by debutant teachers

in response to these challenges were coded in questions 12, 13, and 14. Thus, the most popular strategy is consulting with more experienced colleagues, chosen by 73.3% of respondents. This is followed by three medium-level strategies: advance planning, seeking additional resources, and adjusting teaching methods to meet children's needs – each having over 60% of respondents. The strategy represented by participation in continuing education courses has a selection rate of 51.1%. The respondents' own preferred methods represent the least common strategy, chosen by 2.2% of them. In terms of potential and future trends, the highest response rate for consulting experienced colleagues suggests a strong preference for peer-to-peer support. The equal percentages for planning, resource-seeking, and adaptive teaching methods indicate that these approaches are similarly valued, possibly implying that respondents view them as complementary strategies. While participation in training is relatively popular, it is not as common as informal peer support, possibly due to time or resource constraints. Very few respondents selected the "Other" option, indicating that the listed strategies sufficiently cover their approaches.

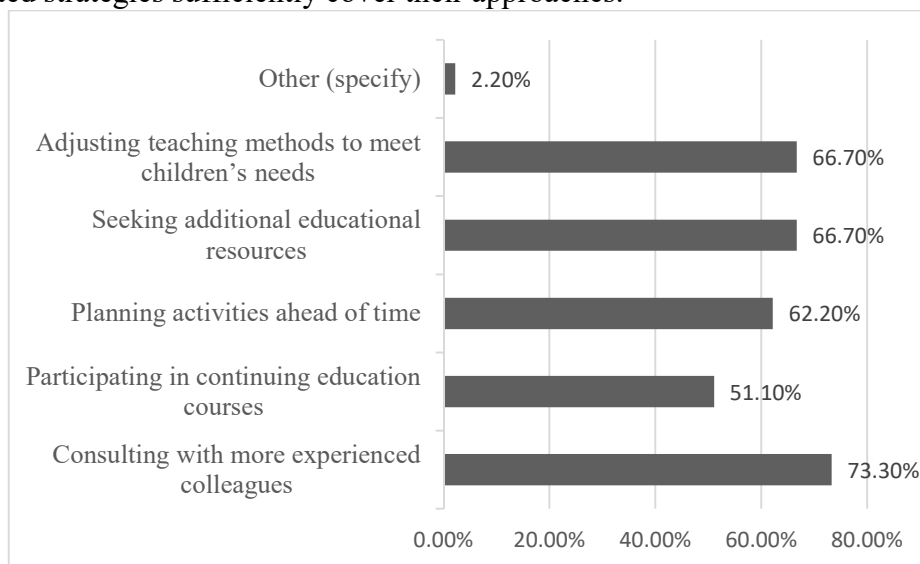


Figure 8. Strategies for addressing the challenges met during professional activity

Note. These are the answers to question no. 12 "What strategies do you use to manage challenges encountered at work?"

Analyzing the responses of debutant teachers, we can observe a diversity of strategies and approaches. We grouped them into main categories to highlight trends and priorities:

- professional development and continuous training (examples: "online videos with open lessons," "in-person training

courses," "webinars," "online courses," "seminars," "participating in courses," "individual study");

- support and collaboration with colleagues (examples: *"discussions with more experienced colleagues," "consultation with colleagues, even those without experience," "consulting with more experienced colleagues," "collaborating with colleagues from other educational units," "open communication with colleagues");*
- building a positive relationship with children (examples: *"affection for children is the most important," "children respond very well when they are loved," "continuous communication with children," "monitoring and assessing progress," "constant adjustment to the children's needs");*
- collaboration with parents (examples: *"talking with parents," "building a harmonious relationship with parents," "planning counseling sessions with parents");*
- consultation with school specialists: psychologist, counselor, principal (examples: *"help from the deputy principal," "communication with the kindergarten psychologist," "approaching sensitive topics with the school counselor");*
- modern methods and adaptative strategies into the teaching process (examples: *"modern methods," "different means for conducting activities," "experimental methods," "continuous adaptation to daily challenges");*
- self-awareness (example: *"patience and self-awareness").*

The solutions and recommendations collected from the debutant early education teachers who completed the questionnaire have been organized into themes and notable suggestions:

- a. *support and guidance from experienced colleagues*: dedicated mentoring (a mentor or an experienced colleague providing guidance, counseling, and practical support is a frequent suggestion. This includes help with teaching and administrative matters, as well as emotional support); collaboration and open communication (encouraging open communication within the team and a friendly attitude, where beginners are not discriminated against for their lack of experience); constructive feedback (experienced teachers providing regular feedback and sharing resources and ideas, even assisting during the early weeks in the classroom).

- b. *continuous training and access to educational resources*: training courses (participating in continuous professional development courses, including those on teaching methodology, is mentioned as essential); access to teaching materials (debutant teachers need both theoretical and practical resources, including supplies, IT equipment, and other teaching materials. It is necessary for all kindergartens to be well-equipped with the necessary materials); further individual study (individual study and reviewing methodologies are recommended as part of continuous training).
- c. *reducing administrative tasks and simplifying processes*: allowing teachers to focus on educational activities and avoid burnout. Clarity of information is another component, aiming at standardized training for methodologists to avoid inconsistent communication that may confuse the debutants teachers.
- d. *active involvement in professional and methodical activities*: participation in projects and committees by encouraging debutants to get involved in activities, projects and committees to develop their experience. Also, debating and discussions in the teacher council, regular meetings between methodical teachers and debutant colleagues to discuss current dilemmas and challenges, are practical proposals of the respondents.
- e. *building a collaborative work environment and emotional support*: support in managing stress and anxiety is recommended, especially in the first year of activity, but also weekly meetings to create a support community, where debutants can share experiences and receive constant help.
- f. *practical learning experience before teaching*: it was suggested that debutant teachers should start their work with a year of teaching assistantship, to learn through observation and practice before taking on full responsibilities.

This analysis highlights a clear need for structural and emotional support, as well as ongoing training and access to resources. Debutant teachers would benefit from strong mentoring, an administrative support system and a collaborative working environment helping them to become more confident in their role.

Discussions and proposals. Challenges

Debutant teachers face a range of challenges at the beginning of their careers, especially in early education, where the demands are often different from those in other educational levels. Some of the most common **difficulties** include **adapting to the school environment**

(teachers must adjust to the dynamics of a classroom with young children, which requires different pedagogical approaches), **managing relationships with parents** (effective communication with parents is an essential part of early education, and debutants may struggle to find a balance between parents engagements and maintaining their professional autonomy), **lack of practical experience in implementing pedagogical strategies tailored to each child** (even if the theoretical preparation is solid, debutants may face challenges in implementing educational strategies that are customized for each child), and **emotional overload** (intense emotional involvement in working with young children can lead to burnout, especially when teachers deal with difficult behaviors or children with special needs).

Many countries have implemented successful programs to support the integration of debutant teachers. For example, in Finland, debutants benefit from a mentoring program lasting several years (Jokinen et al., 2012), while in Australia, there are professional networks dedicated to sharing experience between debutant and experienced teachers (IEU Queensland NT, AITSL).

More than any other school age, the early education stage is a complex process, full of challenges. Each aspect plays an important role in professional success and influences the quality of the educational act.

- 1. Adaptation to the school environment.** For a teacher at the beginning of his career, adapting to the dynamics of a classroom with young students is a significant challenge. The teacher must adopt nuanced pedagogical approaches suited to the different personalities and needs of the children. The educational environment for preschool children is often unpredictable and dynamic, and teachers need to be able to respond quickly to their behavioral changes and emotional. A study by Murray (2019) emphasizes that understanding children's behavior and adapting teaching strategies to these needs is essential for success in early education.
- 2. Managing relationships with parents.** Effective communication with parents is an essential part of early education, but debutant teachers may struggle to balance parental engagement with their professional autonomy. Parents are often very involved in their children's education and may have high expectations of teachers. Debutant teachers may feel pressure to please parents, which can affect their self-confidence in their own abilities. Harris and Goodall (2008) suggest that training in communicating with parents may help teachers develop more constructive relationships and better manage their expectations.

For many debutants, lack of experience can lead to insecurity in interactions with parents, which may create tensions or even bring a lack of mutual trust. Communication with parents thus becomes a critical component, as parents have high expectations from early education, considering this stage as a crucial period for the emotional and cognitive development of their children. Debutants must find the balance between reassuring parents that their little ones are in a safe and stimulating environment while also managing their own fears and doubts related to the profession. Effective communication with parents is essential for building a solid educational partnership. Studies show that parents play an active role in their children's education, and close collaboration between educators and parents can have positive effects on children's behavior and performance. For debutants, developing communication skills is crucial, as they need to manage individual discussions with parents, provide feedback on children's progress, and address any potential problems or concerns that parents may have. Transparent and consistent communication not only gives parents confidence in the teacher but also fosters an atmosphere of cooperation and support. For example, open communication can include regular meetings, informal daily discussions when handing over children, informational letters, or even a wider use of online platforms to facilitate ongoing connection between educators and parents.

- 3. Lack of practical experience in implementing pedagogical strategies tailored to each child.** One of the biggest obstacles faced by debutant teachers is applying theoretical knowledge in a practical and effective way. Although their academic preparation is solid, the lack of practical experience can hinder their ability to manage the dynamics of a diverse classroom effectively. Each child has individual learning needs, and standardized approaches do not always work. In this regard, support from more experienced colleagues and access to continuous training resources play a crucial role. Furthermore, observation-based methods and reflection, such as formative assessments and personalized instruction, can help debutant teachers develop the skills necessary to respond to the needs of each student (Hattie & Yates, 2014). The lack of practical experience can lead to uncertainties in teaching and inefficient application of theoretical knowledge. Kelchtermans (2017) highlights that mentoring and support from more experienced

colleagues are essential for overcoming these obstacles. These professional relationships not only enhance teaching skills, but also contribute to teachers' ongoing professional development.

4. **Emotional overload.** Intense emotional involvement in working with young children can lead to burnout, especially when teachers face challenging behaviors or children with special needs. This is a well-known issue in the literature, which underscores the impact that stress and burnout can have on teachers' mental health. Chang (2009) discusses the negative effects of emotional exhaustion on professional engagement and pedagogical performance. Therefore, it is crucial that debutant teachers have access to support resources, including counseling and personal development programs, to better manage these challenges.

Facilitating Factors for Teacher Integration

To address these challenges, it is essential to have adequate and well-organized support. Among key elements that can facilitate successful professional integration, we can find the follows:

- a) **Mentorship and peer support:** Implementing a mentorship program where experienced teachers provide guidance, emotional support, and practical advice to debutants can be extremely beneficial. Supportive collegial relationships provide opportunities for exchanging best practices and learning from real-life experiences. Ingersoll (2001) states that mentoring relationships helps reduce feelings of isolation and increase self-confidence for new teachers. An experienced mentor may offer encouragement and solutions to daily challenges, helping debutants navigate initial difficulties more easily. Another advantage of mentorship is access to practical advice and real-world experiences. Experienced teachers can share effective classroom management strategies, innovative teaching methods, and solutions to specific challenges encountered in the classroom. Feiman-Nemser (2001) highlights the importance of learning through practice, showing that mentors can help debutants transform theory into applicability, adapting to the needs of their students. The mentorship program encourages a culture of continuous learning by offering opportunities for the exchange of best practices among colleagues. Through collaboration with mentors, debutant teachers can discover new teaching techniques and benefit from constructive feedback. Vescio, Ross, and Adams (2008) demonstrated that the exchange

of experiences among teachers not only improves individual performance but also contributes to the professional development of the entire educational community.

- b) Continuous professional preparation:** Providing continuing professional training programs that address practical aspects of early education, such as classroom management, child-centered teaching strategies, or children's socio-emotional development, is essential. Technology can facilitate access to continuing education, providing flexible options for teachers. Online programs allow teachers to attend courses and training sessions on their own schedule. This makes training more accessible and adaptable to individual teachers' needs and facilitates the creation of common interest communities and participation in professional groups and communities. These groups allow teachers to collaborate, share experiences, and develop common teaching strategies. Vescio, Ross, and Adams (2008) suggest that these communities can contribute significantly to the development of pedagogical skills and increased professional engagement.
- c) Constructive feedback:** Debutant teachers need regular and constructive evaluations that allow them to continuously improve their skills. Feedback should not only be critical but also development-oriented, highlighting strengths and offering suggestions for improvement. Constructive feedback is an essential component in the training and professional development of debutant teachers. It not only helps improve pedagogical skills but also contributes to creating a positive and supportive learning environment. Effective feedback must be regular, balanced, development-oriented, and highlight both strengths and areas that need improvement. Constructive feedback enables debutant teachers to better understand teaching methods and adjust their strategies according to the needs of their students. According to research by Hattie and Timperley (2007), feedback is considered one of the most effective ways to improve learning. Regular evaluations help clarify expectations and develop the necessary skills for effective teaching. However, organizational culture, evaluator training, and clear goal setting can affect the proper structuring of constructive feedback. Encouraging beginning teachers to reflect on their own teaching practices and identify specific support needs are effective ways to integrate constructive feedback.

- d) Emotional and psychological support:** The teaching profession, particularly in early education, can be emotionally and psychologically demanding. Debutant teachers face numerous challenges, including managing classroom diversity, adapting to administrative demands, and developing relationships with parents and colleagues. For these reasons, emotional and psychological support becomes essential in preventing burnout and ensuring a positive experience for both teachers and students. Often under significant pressure, which can lead to chronic stress and burnout, debutant teachers can benefit from organizing support groups within schools or educational communities, which offer a safe space for sharing experiences and receiving guidance. Participation in support groups can significantly reduce stress levels and contribute to good mental health. Emotional burnout is a common issue among debutant teachers, which can affect not only their personal well-being but also the quality of education they provide. Emotional support, including access to psychological counseling, can help teachers cope with daily challenges and develop effective coping strategies. Maslach and Leiter (2016) highlight the importance of proactive interventions in preventing emotional burnout, thus promoting a healthy work environment. Another benefit of support groups and psychological counseling is the improvement of interpersonal relationships. Teachers who receive emotional support are more likely to develop positive relationships with colleagues, students, and parents. This connectivity can enhance the sense of belonging and support within the educational community (Hattie, 2015).
- e) The importance of attention and concentration in the early education stage.** In his book *“Focus: The Hidden Driver of Excellence”*, Daniel Goleman emphasizes the crucial role that attention plays in performance and personal success. Debutant teachers, who face numerous challenges in early education, need to develop their ability to concentrate to successfully manage multiple tasks in the classroom. Distributive attention is essential in managing children’s behavior, adapting pedagogical strategies, and responding to the emotional and cognitive needs of each child. Goleman also highlights that a high level of attention not only improves professional performance, but also reduces stress levels, allowing teachers to be more effective and empathetic in their daily interactions.

- f) Emotional self-regulation/adjustment and its impact on relationships with parents and colleagues:** Another important concept discussed by Goleman is emotional self-regulation/adjustment, which plays a vital role in early education. Debutant teachers who do not effectively control their emotions may feel the pressure imposed by parents' demands and relationships with colleagues more acutely, which can affect their performance and self-confidence. In *Focus*, Goleman argues that self-regulation/adjustment allows individuals to maintain emotional balance even in tense situations. For debutants, this skill is crucial, as frequent interactions with parents and unexpected situations in the classroom require a calm and well-managed response. Furthermore, by cultivating self-regulation/adjustment, teachers can avoid burnout and maintain a positive educational environment for children.
- g) Cultivating empathetic attention and a supportive culture in school:** In early education, empathy is one of the most valuable skills a debutant teacher can develop. Goleman introduces the concept of "empathetic attention" in *Focus*, explaining that it involves the ability to understand the needs and emotions of others through focused attention. For debutants, empathetic attention can facilitate managing relationships with both parents and students, helping them respond sensitively to their concerns and needs. In addition to benefits for interpersonal relationships, a supportive culture based on empathy and understanding can encourage collaboration and provide teachers with a safe space for professional and personal development.

Proposals for improving the efficiency of the integration of debutant teachers

Making the integration of debutant teachers more efficient starts with their initial training, which needs to be more practical, flexible and adapted to the realities of the classroom. Here are some measures that could improve this stage:

- **expanding internship stages:** Starting from the early stages of university education, initial teacher training should include more supervised pedagogical internship periods. These internships would give future teachers the opportunity to experience various school contexts and learn how to manage classes of different ages and physical and cognitive developmental levels. Integrating theory with real practice in classrooms would help debutant teachers to be better prepared for everyday challenges.

- **specific training for managing relationships and stress:** Developing training modules focused on managing relationships with parents, collaborating with colleagues, and managing emotional stress is essential. Emotional intelligence, social skills, and emotional regulation/adjustment are key factors for professional success (Goleman, 2013). Therefore, future teachers should learn self-regulation/adjustment techniques and be prepared to manage complex interactions with parents and colleagues.
- **training through mentorship and observation:** Integrating mentorship into initial training, where trainees are observed and guided by experienced mentors, would facilitate an effective transfer of practical knowledge. Learning through direct observation and constant feedback can improve debutant teachers' ability to apply educational theory in real contexts and adjust their teaching methods accordingly.
- **simulations and role-playing:** During initial teacher training, the use of simulations and role-playing to replicate common school situations—from managing classroom conflict to dealing with difficult parents—would help future teachers be better prepared for the challenges they will encounter. This method provides a controlled setting in which debutant teachers can practice strategies without major risks.
- **flexible and adapted curriculum:** A flexible university curriculum that integrates modern educational technologies and is customized to the needs of each teacher would provide better training suited to real-world requirements. Additionally, courses should include more specific preparation for early education and managing diverse classrooms.

By implementing these measures, initial teacher training could become a more effective process, preparing future teachers to successfully handle the challenges of their first years in the profession and contributing to a smoother and longer-lasting professional integration.

Expectations and implications

In the context of education, debutant teachers often face various challenges: adapting to the demands of the profession, student diversity, implementing effective teaching methods and understanding the school climate. Research in the field of supporting debutant teachers has a fundamental role in identifying strategies that can contribute to their success and longevity in their careers. The expectations and implications of the research target several interested groups, each with their own

objectives and needs: teachers, schools and decision-makers.

(1). *Expectations and implications for teachers*: research has the potential to provide a better understanding of how to manage the challenges specific to the first years of their careers. At this stage, teachers are often able to adapt quickly to a dynamic and demanding educational environment. Research can identify effective ways in which teachers can access the resources needed for professional development and take advantage of training opportunities. The knowledge resulting from the research can provide examples of good practices and innovative solutions to common problems, such as managing student behavior or developing adaptive teaching strategies. Thus, teachers will be able to benefit from more solid training, contributing to increasing the quality of teaching and reducing the feeling of professional burnout.

(2). *Expectations and implications for schools*: For schools, the research can facilitate the identification of strategies to support beginning teachers and the implementation of effective mentoring models. Schools that provide a supportive environment for debutant teachers contribute not only to their retention within the institution, but also to the creation of a climate of collaboration. The mentoring and support models identified by the research can have a positive long-term impact, strengthening support networks and interaction between colleagues. This not only facilitates the continuous development of debutant teachers but can also reduce the rate of early-career abandonment. In addition, schools that invest in such programs become more attractive to future employees, benefiting from motivated and well-prepared teachers.

(3). *Expectations and implications for decision-makers*: research provides a basis for the development of educational policies and training programs that support teachers at the beginning of their careers. In a time when there is a teacher shortage, it is essential that educational policies are formulated based on relevant data and studies. Decision-makers can use research to implement measures that reduce professional burnout and encourage continuity. Thus, initial and in-service training programs can be adjusted to meet the real needs of debutant teachers. At the same time, funding for mentoring and professional development programs can be prioritized, thus contributing to creating a more equitable education system.

Conclusions

The integration of debutant teachers is essential from multiple perspectives. First, they represent a valuable resource for the educational

system, bringing fresh energy and innovative ideas. However, without adequate support, the risk of them leaving the profession is real, due to the difficulties encountered at the beginning of their career, which can lead to a considerable loss of professional potential and instability in the educational domain.

Second, a correct integration of debutant teachers contributes to improving the quality of the educational process. Well-supported and trained teachers are better able to cope with the complexity of early education, to respond to the varied needs of children and to collaborate effectively with parents. At the same time, correct professional adaptation directly influences the well-being of teachers, preventing the risks of burnout and ensuring them a long-lasting and satisfying career. Ultimately, the resources and support provided to debutant teachers are essential for creating a stable and innovative educational environment in which both teachers and students can thrive. A positive organizational culture that promotes collaboration and continuous development contributes to increased educational effectiveness, the overall well-being of the educational community, and the reduction of attrition among young teachers.

The expectations and impact of research in support of debutant teachers are varied and fundamental to a quality education system. Through this, teachers acquire the necessary tools to overcome professional challenges, schools can implement effective support and mentoring models, and decision-makers benefit from essential information for the development of sound educational policies. All these elements point out towards the same goal: creating an education system that values and supports the continuous development of teachers.

Possible limitations of the research

A first factor that may influence the results is the biased response of debutant teachers. They may be reluctant to provide negative details about their experiences, fearing possible professional repercussions or negative evaluation by their superiors.

The diversity of educational contexts also represents a significant limitation. Significant differences between urban and rural environments, as well as variations within different stages of education (nursery, kindergarten) may affect the applicability and relevance of the generalization of the results obtained, given the particularities of each educational environment

References

- Chang, M. L. (2009). An Appraisal Perspective of Teacher Burnout: Examining the Emotional Work of Teachers. *Educational Psychology Review*, 21, 193-218. <http://dx.doi.org/10.1007/s10648-009-9106-y>
- Correa, J.M., Martínez-Arbelaiz, A., and Aberasturi-Apraiz, E., (2015). Post-modern reality shock: beginning teachers as sojourners in communities of practice. *Teaching and teacher education*, 48, 66–74. doi: <https://doi.org/10.1016/j.tate.2015.02.007>
- den Brok, P., Wubbels, T., and van Tartwijk, J., (2017). Exploring beginning teachers' attrition in the Netherlands. *Teachers and teaching: theory and practice*, 23 (8), 881–895. doi: <https://doi.org/10.1080/13540602.2017.1360859>
- Feiman-Nemser, S. (2001). From Preparation to Practice: Designing a Continuum to Strengthen and Sustain Teaching. *Teachers College Record*, 103, 1013-1055. <https://doi.org/10.1111/0161-4681.00141>
- Goleman, D. (2013). *Focus: The hidden driver of excellence*. HarperCollins Publishers, 3-60.
- Harris, A., & Goodall, J. (2008). Do parents know they matter? Engaging all parents in learning. *Educational Research*, 50(3), 277–289. <https://doi.org/10.1080/00131880802309424>
- Hattie, J. (2015). The Applicability of Visible Learning to Higher Education. *Scholarship of Teaching and Learning in Psychology*, 1, 79-91. <http://dx.doi.org/10.1037/stl0000021>
- Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research*, 77(1), 81-112. <https://doi.org/10.3102/003465430298487>
- Ingersoll, R. M. (2001). Teacher turnover and teacher shortages: An organizational analysis. *American Educational Research Journal*, 38(3), 499–534. <https://doi.org/10.3102/00028312038003499>
- Jokinen, H., Heikkinen, H.L.T., Morberg, Å. (2012). The Induction Phase as a Critical Transition for Newly Qualified Teachers. In: Tynjälä, P., Stenström, ML., Saarnivaara, M. (eds) *Transitions and Transformations in Learning and Education*. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-2312-2_11
- Kelchtermans, G. (2017). 'Should I stay or should I go?': unpacking teacher attrition/retention as an educational issue. *Teachers and Teaching*, 23(8), 961–977. <https://doi.org/10.1080/13540602.2017.1379793>
- Kessels, J.W.M., (2018). De ecologie van de professionele ruimte. *Pedagogische studiën*, 95, 220–226

- Levenson, M., (2014). Pathways to teacher leadership: emerging models, changing roles. *Pathways to teacher leadership. emerging models, changing roles* (pp. 176), Harvard Education Press: Harvard Education Press
- Maslach C, Leiter MP. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*. 2016 Jun;15(2):103-11. doi: 10.1002/wps.20311
- Noordzij, T. and Van De Grift, W.J.C.M., (2020). Uitval van bevoegde leraren in het voortgezet onderwijs tijdens de inductiefase. *Pedagogische studiën*, 97 (2), 96–107
- Rushton, E. A. C., & Bird, A. (2024). Space as a lens for teacher agency: A case study of three beginning teachers in England, UK. *The Curriculum Journal*, 35, 254–270. <https://doi.org/10.1002/curj.224>
- Staudt Willet, K. B. (2023). Early career teachers' expansion of professional learning networks with social media. *Professional Development in Education*, 50(2), 386–402. <https://doi.org/10.1080/19415257.2023.2178481>
- van Leeuwen, J. L., Schaap, H., Geijssel, F. P., & Meijer, P. C. (2022). Early career teachers' experiences with innovative professional potential in secondary schools in the Netherlands. *Professional Development in Education*, 50(2), 403–419. <https://doi.org/10.1080/19415257.2022.2129738>
- Vescio, V., Ross, D., & Adams, A. (2008). A Review of Research on the Impact of Professional Learning Communities on Teaching Practices and Student Learning. *Teaching and Teacher Education*, 24, 80-91. <http://dx.doi.org/10.1016/j.tate.2007.01.004>
- Ministerul Educației, Raport privind starea învățământului preuniversitar din România 2020 – 2021, <https://www.edu.ro/rapoarte-publice-periodice>
- Ministerul Educației, Raport privind starea învățământului preuniversitar din România 2021 – 2022, <https://www.edu.ro/rapoarte-publice-periodice>
- Ministerul Educației, Raport privind starea învățământului preuniversitar din România 2022 – 2023, <https://www.edu.ro/rapoarte-publice-periodice>.

STUDENTS' PERCEPTIONS OF COLLABORATIVE LEARNING APPROACH AND THE INTERPLAY OF SOME DEMOGRAPHIC VARIABLES IN LEARNING BASIC SCIENCE

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Abstract: *In recent pedagogical innovations aimed at enhancing students' understanding of basic scientific knowledge, the collaborative learning approach (CLA) has emerged as an enterprising pedagogical approach. However, there has been limited research attention on students' perceptions of the use of CLA amidst its obvious benefits. For this purpose, students' perception, toward the use of CLA in Basic Science was evaluated. Using cross-sectional survey design and Social cognitive theory (SCT), students learning behaviour and perception were explained. Data have been collected through questionnaires from basic education students. Descriptive statistics were utilized to answer the research questions, while hypothesis testing was conducted using independent sample t-tests and ANOVA at a 0.05 alpha level. The findings provided evidence that students' perception is generally positive towards the use of CLA, & no significant difference in the perception of male & female students was observed. The findings also provided evidence that there is no significant difference between students' birth order and their perceptions of CLA in the classroom. Amongst all, the classroom setting & teacher relationship with the students should be revisited to enhance equal participation of males & females.*

Key words: *collaborative learning approach; basic science; demographic variables students' perception.*

Introduction

The recent evolution of innovative instructional strategies focusses on enhancing classroom delivery of scientific knowledge, leading to a shift from conventional methods such as the lecture method to student-centred approach. This shift correlates with 21st-century demand for skills such as problem-solving and critical thinking which innovative teaching approaches provide. Despite this focus, poor research attention focusing on students' perceptions of innovative teaching especially collaborative learning (CLA), and particularly among basic education students in Nigeria persisted. Furthermore, there is insufficient research on how demographic factors such as birth order and gender, affect students' perceptions and reactions to this instructional technique.

Collaborative Learning Approaches (CLA) is an approach that emphasizes shared responsibility and social interaction among students to achieve collective learning goals. Based on this student-centred framework, learners engage in small groups to tackle tasks, exchange ideas, and enhance their understanding through task collaboration (Laal, 2016; Nur & Butarbutar, 2022; Paul & Kundu, 2021). CLA promotes higher learning engagement, critical thinking, and community building (Ramzan et al., 2023). The approach effectively motivates students, thus, encouraging a positive outlook on collaborative methods in educational settings (Nwafor et al., 2023). Additionally, student perceptions, which may differ based on gender, can influence learning engagement and academic outcomes, highlighting the diverse nature of learners in a given learning environment.

Existing literatures have contrasted between individualized instruction and collaborative learning (CLA), revealing that while self-motivated students tend to embrace independent learning, CLA yields higher achievement levels among students (Salma, 2020). Individualistic learners, on the other hand, focus on personalized goals and self-directed exercises, which can limit social interaction and feedback inherent in CLA settings (Sartain, 2018). Nevertheless, studies by Kubat (2015) and Tong (2022) suggest that students who prefer working independently demonstrate improved knowledge and performance. To this end, the effectiveness of pedagogical approaches can vary amongst students. Based on these contrasting reports, the current study explored students' perceptions of CLA and how demographic factors influence these perceptions in basic education contexts.

Literature Review

Theoretical background

Social cognitive theory of learning (Bandura, 1977)

Perception constitutes a multifaceted cognitive phenomenon that generates a distinctive representation of the world, which may differ

from objective reality. Social Cognitive Theory (SCT) explains the interrelationship among learner behaviour, the environment, and learner characteristics in a triadic framework. This theoretical construct discusses individuals' responses as a function of these interrelated elements. In educational research, SCT offers a conceptual foundation for defining the mechanisms by which students acquire knowledge in the classroom. This theory posits that individual experiences, the conduct of others, and environmental variables significantly influence personal learning behaviors. Based on this theory, students' learning behaviours and their perceptions can be modulated through social interactions with peers within a collaborative learning context.

Social interaction can influence students' engagement in the classroom. The active participation of students in CLA is regarded as a critical indicator of their cognitive engagement (Fan & Dai, 2021), and underscores the necessity of social interaction and communicative exchanges in facilitating successful collaborative learning outcomes. Students' environment in the context of this study, encompasses their educational settings, family dynamics, and interactions with their peers. Consequently, the principles of SCT serve as a foundational framework that underpinned the present study.

Students' perception of innovative methods of teaching

Variations in perceptions on the use of CLA could differ amongst students in the same learning environment. Razman, Javaid, and Ali (2023); and Crisiantita and Mandasari (2022) concurred that students possess predominantly positive and favorable perceptions concerning the use of CLA. They linked their assertions to various factors such as learning opportunities, constructive feedback, and students' awareness of other advantages associated with collective learning experiences. Conversely, students who maintain individualistic and autonomous learning preferences tend to favour independent project execution (Kubat, 2015; Kilarkaje et al., 2019). Kubat and Kilarkaje maintained that how an individual engages with learning constitutes the optimal approach for that learner. This implies that learning style should not be perceived as a deficit but rather as an enhancement to pedagogical strategies. The present study therefore, focused on explaining students' perceptions regarding the utilization of CLA in the classroom.

Demographic variables and students' perception

Research indicates that students' perceptions of CLA differ by demographics, as highlighted by studies from Zhou et al., (2019) and Al-Quasham et al., (2022), who maintained that Male students tend to view CLA more positively than female students, showing their preference for dynamic and heterogeneous groups. However, female students prioritize

the quality of learning in a collaborative setting, while male students focused more on opportunities for improvement (Ahmadi et al., 2021). Similarly, female students exhibited stronger engagement in collaborative tasks, while male students were more engaged in less collaborative behaviours (Feng et al., 2023). Studies by Wokocha & Allen, (2021); Nwafor et al., (2023) Suaco et al., (2023) observed no significant gender differences in perceptions of CLA, indicating that the relationship between gender, birth order, and students' perceptions of CLA remains complex and context-dependent.

According to Menchak et al., (2022), the sequence of birth exerts an influence on the perceived academic performance among students, with firstborns, middle-borns, and last-borns demonstrating distinct academic outcomes. Nevertheless, within the African-American demographic, female firstborns articulated elevated perceptions of educational opportunities in comparison to their male counterparts. In a similar vein, middle-borns expressed more pronounced sentiments regarding sibling cohesion when contrasted with their youngest siblings, thereby revealing a sophisticated comprehension of family dynamics (Michele et al., 2016). While birth order may affect individual perceptions and experiences, its overarching influence appears to be constrained when juxtaposed with other variables such as gender.

In conclusion, existing literatures revealed a divergence in the perceptions of the CLA between male and female students, notwithstanding its evident advantages. More so, studies (Kunwar, 2020; and Robinson & Lee, 2023), have revealed the potential influence of demographic variables on students' perceptions and preferences regarding pedagogical approaches. Nevertheless, there is a lack of consensus on this specific issue. The majority of the existing studies predominantly utilized qualitative research design in their approaches, especially among students in higher education, leaving a paucity of studies addressing the same issues among students in basic education in Nigeria. Moreover, there has been no investigation dedicated to explaining how demographic variables such as gender, birth order, and family size, affect students' perceptions of the CLA. To address these identified gaps, the current study aimed to ascertain;

1. Students' perception about the use of CLA in learning Basic Science
2. Male and female students' perception about the use of CLA in learning Basic Science
3. Frequency and percentage of students' perception of CLA based on their family birth order
4. Level of significance of male and female students' perception about the use of CLA in learning Basic Science

5. Level of significance of students' perception of CLA based on their family birth order in learning Basic Science

Methods

Study design

To explore students' perceptions regarding the utilization of CLA and the influence of some demographic variables, the present study employed a cross-sectional descriptive survey design. The survey research design explains one or more attributes of a particular demographic group (Pandey, 2024). This design explains critical insights into a collective's attitudes, behaviours, beliefs, and demographic characteristics. Following this design, questionnaires serve as effective instruments for data collection due to their reliability, validity, and generalizability (Fraenkel, et al., 2012).

Population and sampling

The sample size of the study was made up of 200 (male = 108 {54%}; female = 92 {46%}) basic education students in public secondary schools in Awka Metropolis. They were obtained from three intact classes in three different local governments in the study area using the Taro Yemane formula.

Instrumentation and Collection of Data

The instrument for data collection was a structured questionnaire. It was assembled by the researchers after a thorough review of the literature. The instrument was made up of 9 item statements rated on a 4-point Likert scale with 4 numerical values: 4 (strongly agree); 3 (agree), 2 (disagree), and 1 (Strongly disagree). The questionnaire was structured to reflect students' perceptions of the use of CLA in the classroom. The instrument was subjected to validation by three experts. The recommendations of the experts were incorporated leading to the final copy of the questionnaire. The instrument using the Cronbach Alpha reliability formula; yielded a coefficient value of .746, which accounts for the reliability of the agency. This data was collected at the end of the 3rd term of the 2023/2024 academic session.

Statistical technique

To obtain the participants' demographics, a Statistical Package for Social Science (IBM SPSS v27) was used by applying descriptive statistics methods i.e. mean, standard deviation, frequency and percentage to answer the research questions. Meanwhile, the hypotheses were tested using an independent sample t-test and analysis of variance (ANOVA).

Demographic information

Variables	Subgroup	Freq.	%
Gender	Male	108	54%

	Female	92	46%
Students' birth order in the family	1 st Born	64	32%
	2 nd Born	54	27%
	3 rd Born	41	20.5%
	4 th Born	17	8.5%
	5 th Born	9	4.5%
	6 th Born	8	4%
	7 th Born	4	2%
	8 th Born	3	1.5%
Number of household members	1-2 persons	7	3.5%
	3-4 persons	51	25.5%
	5-6 persons	82	41%
	7 or more persons	60	30%
			200

Table 1: distribution of the study subjects according to individual characteristics

The study found that most students in Awka Education Zone had a positive perception of the use of CLA, citing its ability to help students express their ideas, understand Basic Science concepts, develop problem-solving skills, improve teamwork, and express ideas comfortably. However, some students had a negative perception.

s/n	Statement	Male			Female		
		\bar{X}	SD	Remark	\bar{X}	SD	Remark
1	My teacher encourages me to participate in group work in the class.	3.00	1.10	Negative	3.01	.97	Negative
2	My teacher provides opportunities for us to share our ideas and thoughts during lessons.	3.31	0.90	Positive	3.04	1.09	Negative
3	Collaborative learning activities in the classroom help me understand Basic Science concepts well.	3.32	0.73	Positive	3.38	.70	Positive
4	I learn more from my peers through collaborative learning activities	3.14	0.93	Negative	2.99	.92	Negative

	during Basic Science classes.						
5	Collaborative learning activities in Basic Science classes help me develop problem-solving skills.	3.26	0.64	Positive	3.15	.78	Positive
6	I think collaborative learning is an effective way to learn Basic science.	3.33	0.65	Positive	3.24	.94	Positive
7	Collaborative learning activities in Basic Science helped me develop teamwork and communication skills.	3.42	0.77	Positive	3.36	.92	Positive
8	I feel comfortable expressing my ideas during group activities.	3.21	0.82	Positive	3.07	.92	Negative
9	I prefer studying Basic Science alone rather than in a group.	2.70	1.17	Negative	2.66	1.18	Negative
Weighted Mean		3.18	0.85	Positive	3.10	0.93	Negative

Table 3: Male and female students' perception of CLA in the classroom

s/n	Statement	Male			Female		
		\bar{X}	SD	Remark	\bar{X}	SD	Remark
1	My teacher encourages me to participate in group work in the class.	3.00	1.10	Negative	3.01	.97	Negative
2	My teacher provides opportunities for us to share our ideas and thoughts during lessons.	3.31	0.90	Positive	3.04	1.09	Negative
3	Collaborative learning activities in the classroom help me understand	3.32	0.73	Positive	3.38	.70	Positive

	Basic Science concepts well.						
4	I learn more from my peers through collaborative learning activities during Basic Science classes.	3.14	0.93	Negative	2.99	.92	Negative
5	Collaborative learning activities in Basic Science classes help me develop problem-solving skills.	3.26	0.64	Positive	3.15	.78	Positive
6	I think collaborative learning is an effective way to learn Basic science.	3.33	0.65	Positive	3.24	.94	Positive
7	Collaborative learning activities in Basic Science helped me develop teamwork and communication skills.	3.42	0.77	Positive	3.36	.92	Positive
8	I feel comfortable expressing my ideas during group activities.	3.21	0.82	Positive	3.07	.92	Negative
9	I prefer studying Basic Science alone rather than in a group.	2.70	1.17	Negative	2.66	1.18	Negative
Weighted Mean		3.18	0.85	Positive	3.10	0.93	Negative

Table 3: Male and female students' perception of CLA in the classroom

Table 3 shows contrasting views on the use of CLA among male and female students. Female students have a generally negative perception, while male students have a positive perception. This implies that CLA appeals more to male students in Basic Science, while female students do not find it conducive or comfortable.

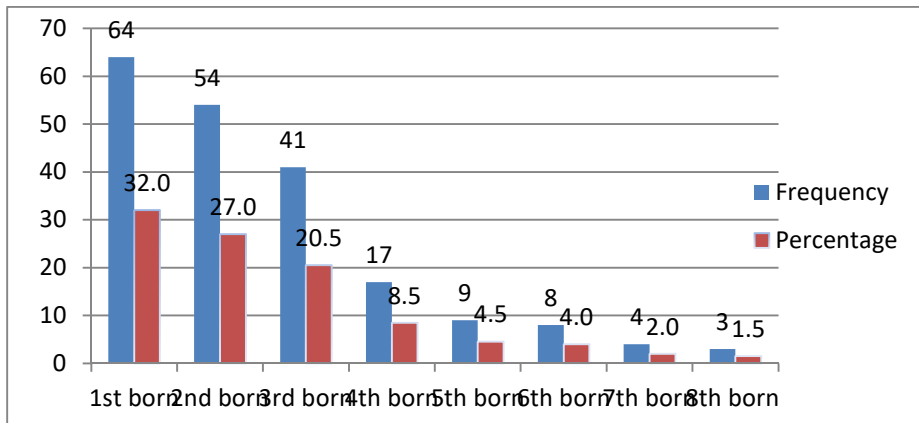


Figure 1 Frequency and Percentage distribution of students' Perceptions based on their Birth Order in the family

Based on the student’s birth order, Figure 1 shows the frequency and percentages of how they perceived CLA in the classroom. According to the table, students who are first-born, accounting for 32.0% (64), of the study sample, had the highest perceptions of CLA in the classroom. Those who were second-born (27.0%), third-born (20.5%), fourth-born (8.50%), fifth-born (4.50%), and so forth followed accordingly. This revealed a descending order among students in their perception of CLA, which suggests that the frequency and percentage of student’s perception of the use of CLA in the classroom decreases with an increase in their birth order.

Hypothesis 1: There is no significant difference in the perception of male and female students toward the use of CLA in the classroom

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	\bar{X} Dif. f.	Std. Error Diff.	95% Confidence Interval Diff.	
									Lower	Upper
Perception x Gender	Equal var. assumed	3.585	.060	1.29	198	.183	.79	.61372	-.51233	1.837
	Equal var. Not assumed			1.26	170	.181	.79	.62613	-.51233	1.837

Table 4: independent t-test of difference in perception about collaborative learning approach based on gender

Table 4 shows that an independent sample t-test was conducted to compare male and female students' perceptions regarding the use of CLA in Basic Science classrooms in Awka Metropolis. The table shows that there is no significant difference ($t(198) = 1.29$, $P = .060$) in the scores of males ($M = 27.90$, $SD = 4.88$), and females ($M = 28.69$, $SD = 3.78$), although the female show more mean perception than the male. The magnitude of the difference in means (mean difference = .79, 95% CI -.51233 to 1.83793) was not significant. Thus, H1 was not rejected, meaning that there is no significant difference in the male and female students' perception of the use of the collaborative learning approach in the classroom.

Hypothesis 2: there is no significant difference in the perception of students toward the use of CLA in the class and the number of family members in their homes.

	Sum of Squares	Df.	Mean Square	F	Sig.	Decision
Between Groups	9.341	3	3.114	.164	.921	<i>Not Significant</i>
Within Groups	3726.879	196	19.015			
Total	3736.220	199				

Table 5: ANOVA test of significance between students' perception of CLA and the number of members in their family

Participants were divided into four groups (group 1: 1-2 members; group 2: 3-4 members; group 3: 5-6 members; group 4: 7 and above). The ANOVA result suggests that there is no evidence that students' birth order in the family influences their perception of CLA in the classroom ($F = .164$; $p = >0.05$). This implies that irrespective of a student's birth order in the family, their perception of CLA remains the same. Therefore, there is no evidence that birth order influences how students perceive the use of CLA in the classroom.

Discussion

The study investigated students' perception towards the use of the collaborative learning approach (CLA), and the interplay of some demographic variables. Research questions and hypotheses that guided the study were answered and tested respectively.

The first question in table 2 addressed students' perceptions on the use of CLA in the classroom. The finding revealed that about 85% of the students in the study area had a positive perception toward the use of CLA. This outcome explains their awareness of the approach and the prospect the learning method holds in enhancing peer interaction and the formation of community in the classroom. The outcome also explains a strong sense of togetherness in completing assignments and interactive learning among students (Laal, 2015). The finding is in agreement with

Razman, Javaid and Ali, 2023; Crisianita and Mandasari (2022) that students exhibit positive and favourable views of CLA. However, the finding is in disagreement with (Kubat, 2015; and Kilarkaje, *et al.*, 2019) on independent and individualistic learning.

Table 3 sampled the perception of male and female students toward the use of CLA in learning basic science. The findings showed that male students perceive the use of CLA positively unlike their female counterparts with a general negative perception. This could mean that learning activities and opportunities provided in CLA favoured males more than females. This could also mean that male students were more comfortable sharing ideas than the female in the classroom. This finding is in line with Zhou *et al.*, (2019; & Alqasham, *et al.*, 2022), who observed that male students significantly have more general positive perception of CLA compared to female students. However, the negative perception of female students could be attributed to some factors such as possible evidence of unequal distribution of collaborative learning workload and possible stereotype threat in the classroom. Moreover, female students may have preferred independent learning, experienced higher levels of academic stress or had difficulty with ambiguous or open-ended tasks.

More so, the observed contrasting perceptions toward the use of CLA among male and female students were subjected to hypothetical testing. The result of the independent sample t-test in table 4, revealed that male and female students' perceptions toward the use of CLA are not significant. This implies that there is no evidence that gender influences the perception of students toward the use of CLA in the classroom. Despite the observed variations in their mean scores, the difference between male and female students was not significant. This outcome agrees with Wokocha & Allen (2021); Nwafor, *et al.*, (2023); & Suaco, *et al.*, (2023) that no significant difference exists between males and females in their perception of CLA.

Table 5 showed student's birth order in the family and their perception of CLA in the classroom. The finding revealed an interesting trend that the frequency and percentage of students' perception towards the use of CLA in the classroom decreases with an increase in their birth order. Students who identified as 1st born, 2nd born and 3rd born perceived the use of CLA in the classroom more, compared to those with later birth order in the family. This could mean that students who are 1st born experience more attachment to activities with collaborative tendencies. Also, compromised teacher guidance and family orientation and dynamics could have necessitated this observation in the study area. Students who are older in birth order may have more responsibility leading to less collaboration, unlike those of the firstborn who enjoy increased parental attention leading to collaboration. However, the

ANOVA test of significance in table 5 revealed that this observation was not significant. Therefore, there is no evidence that students' birth order in the family influences their perception of CLA in learning basic science. The finding disagrees with Menchak *et al.*, (2022).

Conclusion

Based on the findings of the study, we can conclude that positive perception of the use of CLA exist among students, with male students expressing more positive views compared to females. Despite the differences, it was found statistically insignificant. Additionally, as students' birth order increases, their perception of CLA declines, yet no significant correlation was found between students' perception and their birth order.

Limitation and Future Direction

As with all studies, the present study is not without pitfalls and shortcomings. The study acknowledges its limitations, particularly the small sample size, which restricts the generalizability of its findings. The participants were primarily second-year basic education students, suggesting a need for future research to include larger sample size, involving diverse populations, such as high school or college students. Additionally, subsequent studies should explore the impact of other demographic variables such as socioeconomic status, and family structure, on students' perceptions of CLA. Longitudinal studies are also needed to assess the effects of birth order and other demographic factors on collaborative learning.

Ethics statement

Participants gave their consent for participation in the study.

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Conflict of Interest

The authors declare no conflicting or competing interests.

References

- Ahmadi, S. Z. (2020). Cloud-Based Collaborative Writing to Develop EFL Students' Writing Quantity & Quality. *International Education Studies*, 13(3), 51-64.
<https://doi.org/10.5539/ies.v13n3p51>

- Alqasham, F. (2022). Investigating English as foreign language learners' perceptions, emotions, & performance during online collaborative writing. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.954011>.
- Bandura, A. (1997). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice-Hall
- Crisianita, S., & Mandasari, B. (2022). The use of small-group discussion to improve students' speaking skill. *Journal of English Language Teaching & Learning*, 3(1), 61-66. <https://doi.org/10.33365/jeltl.v3i1.1680>
- Dnoims. (2023). Individualized instruction - conceptual and empirical examinations of necessary conditions for its effectiveness. <https://doi.org/10.21248/gups.70953>
- Fan, O., & Dai, X. (2021). Using a three-layered social-cognitive network analysis framework for understanding online collaborative discussions. *Australasian Journal of Educational Technology*. <https://doi.org/10.14742/ajet.7166>.
- Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to design & evaluate education research* (6th ed.). Pearson
- Kilarkaje, N., Al-Hussaini, H., & Ettarh, R. (2019). Millennial Students Study Alone Using Mixed Educational Resources. *The FASEB Journal*, 33, https://doi.org/10.1096/fasebj.2019.33.1_supplement.604.11
- Kubat, U. (2018). Identifying the individual differences among students during learning & teaching process by science teachers. *International Journal of Research in Education & Science*, 4(1), 30-38. <https://doi.org/10.21890/ijres.369746>
- Kunwar, R. (2020). The Effect of Demographic Variables on Secondary Level Students' Attitude towards Mathematics in Nepal. *Researcher: A Research Journal of Culture and Society*, 4(1), 7-29. <https://www.doi.org/10.3126/RESEARCHER.V4I1.33710>
- Laal, M. (2015). Collaborative learning: A study on student's perception. *Journal of Educational Research*, 108(4), 351-358. <https://doi.org/10.1016/j.sbspro.2011.12.091>
- Menchak, C. Y., Kefas, V. A., Garba, C. H., Mshelia, H. J., & Usman, M. (2022). A study of the impact of birth order on academic performance as perceived by Guidance & Counselling students of Taraba State University, Jalingo, Nigeria. *Integrity Journal of Education & Training*, 6(1), 31-36. <https://doi.org/10.31248/ijet2022.135>

- Michele, V, Volkom., E, Beaudoin. (2016). The Effect of Birth Order & Sex on Perceptions of the Sibling Relationship among College Students. *College student journal*, 50(3):347-354.
- Nur, S., & Butarbutar, R. (2022). Insights of Collaborative Learning Approach from Social-Psychology Perspective: A Systematic Review. *Journal of English Education & Teaching*, 6(3), 379-397. <https://doi.org/10.33369/jeet.6.3.379-397>
- Nwafor, M. C., Tsoho, M., & Aliyu, U. A. (2023). Effect of collaborative learning strategy on students' interest in geometry among senior secondary schools in Zaria Metropolis, Kaduna State, Nigeria. *Journal of Science, Technology & Mathematics Pedagogy*. 1(2), 132-143
- Pandey, G. P. (2024). Advancing English Language Teaching through Survey Research: Methodologies, Impacts & Applications. *Nepal Journal of Multidisciplinary Research*, 7(2), 127–141. <https://doi.org/10.3126/njmr.v7i2.68254>
- Paul, A., & Kundu, D. (2021). Collaborative learning. *International Journal of English Learning & Teaching Skills*, 3(4), 2567-2576. <https://doi.org/10.15864/ijelts.3408>
- Puiggali J, Tesouro M, Cañabate D, Colomer J. (2023). Fostering Perceptions of Gender through Cooperative Learning. *Education Sciences*. 13(10):976. <https://doi.org/10.3390/educsci13100976>
- Qinna, F., Heng, L., Wenhao, L., Ti-Wei, C., Ningning, S. (2023). Effects of gender diversity on college students' collaborative learning: From individual gender to gender pairing. *Heliyon*, 9(6):e16237- e16237. <https://doi.org/10.1016/j.heliyon.2023.e16237>
- Ramzan, M., Javaid, Z. K., & Ali, A. A. (2023). Perception of students about collaborative strategies employed by teachers for enhancing English vocabulary & learning motivation. *Pakistan Journal of Law, Analysis & Wisdom*, 2(02), 146-158. <https://doi.org/10.1234/pjlaw.v2i02.58>
- Robinson, K. A., & Lee, S. Y. (2023). Same Classroom, Different Affordances? Demographic Differences in Perceptions of Motivational Climate in Five STEM Courses. *The Journal of Experimental Education*, 1-26. <https://www.doi.org/10.1080/00220973.2023.2267006>
- Salma, N. (2020). Collaborative learning: An effective approach to promote language development. *International Journal of Social Sciences & Educational Studies*, 7(2), 57-61. <https://doi.org/10.23918/ijsses.v7i2p57>

- Sartain, L. (2018). The pros and cons of individual learning. *Journal of Educational Research*, 111(4), 432- 438.
- Suaco, T. P., Mangaliag, A. D., & Gadgad, M. M. (2023). Collaborative Summative Assessment: Means for Enduring Learning & Attainment of 21st Century Skills in the Online Platform. *Journal of Education & Learning*, 12(1), 118-124. <https://doi.org/10.5539/jel.v12n1p118>
- Tobias, H. (2023). A Study of the Influence of Birth Order & Other Variables on Student Perceptions of School Effectiveness in a Southwestern Michigan County. *Dissertations*. 733. <https://doi.org/10.32597/dissertations/733/>.
- Tong, Y. (2022). Supporting individualistic learners in science classrooms: A case study. *Journal of Science Education and Technology*, 31(1), 53-64.
- Waxman, H. C., & Fash, M. J. (1983). Utilizing students' perceptions & context variables to analyze effective teaching: A process-product investigation. *The Journal of Educational Research*, 76(6), 321-325. <https://doi.org/10.1080/00220671.1983.10885476>
- Wokocha, G., & Allen, O. G. (2021). Use of computer supported collaborative learning in teaching & learning science in Nigeria. *GSC Advanced Research & Reviews*, 09(01),111–122. <https://doi.org/10.30574/gscarr.2021.9.1.0173>
- Zhou, X., Chen, L., & Chen, C. (2019). Collaborative Learning by Teaching: A Pedagogy between Learner-Centred & Learner Driven. *Sustainability*. <https://doi.org/10.3390/SU11041174>.

FROM LOCAL TRADITIONS TO DIGITAL STORIES TO CULTIVATE EMPATHY AND CULTURAL AWARENESS

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Abstract: *Integrating digital storytelling into cultural education is an innovative approach to cultivating empathy and cultural awareness among students. This study explores how children can be actively involved in documenting local traditions and transforming them into creative digital narratives. By combining storytelling techniques with accessible digital tools, students are encouraged to interact with community members, discover the value of their cultural heritage, and develop essential emotional and social skills. The results of the research highlight the impact of these activities on empathy, collaboration and appreciation of diversity. The findings underscore that such educational initiatives not only enrich students' understanding of their cultural roots, but also equip them with transferable skills needed in the digital age. The paper emphasizes the importance of integrating active and creative methodologies into cultural education in order to ensure a balanced socio-emotional development and a deeper connection with cultural identity.*

Key words: *digital storytelling; cultural education; empathy; local traditions; socio-emotional development.*

Theoretical foundation

Cultural education is a fundamental pillar in the development of empathy and identity awareness in children and young people. According to UNESCO (2023), access to diversified cultural education contributes to reducing educational gaps and promotes a more inclusive society. In an increasingly technological educational context, digital storytelling is becoming an innovative tool to connect students with cultural traditions and values.

Digital storytelling is a method that combines traditional storytelling with multimedia elements, such as images, sound and animations. Robin (2022) points out that this approach increases student engagement while developing their communication skills and creativity. The use of digital storytelling in education has proven effective in increasing motivation for learning and stimulating critical thinking (Smeda, Dakich & Sharda, 2014).

Empathy is an essential component of socio-emotional development,

being defined by Goleman (2024) as the ability to understand and respond to the emotions of others. In storytelling activities, students have the opportunity to take on different roles and understand diverse perspectives, leading to a deeper understanding of cultural diversity (Hull & Katz, 2023).

According to the OECD report (2023), the integration of technology in education not only facilitates equal access to resources, but also supports the development of essential digital skills in modern society. Digital storytelling is thus a means of encouraging students to become active content creators, exploring and reinterpreting local traditions through creative means.

In Romania, recent projects such as "Education through Heritage" have demonstrated that the involvement of students in documenting and capitalizing on local traditions contributes to the development of cultural awareness and the strengthening of community ties (Ministry of Education, 2022). Also, the West University of Timisoara (2024) highlighted the fact that the use of digital resources in rural education has increased student motivation and contributed to reducing school dropout.

Technology and cultural education are complementary. According to UNESCO (2023), digital storytelling offers students the opportunity to learn through active participation, thus developing both their creativity and emotional and cognitive skills. In addition, educational projects based on transmedia storytelling have proven that students significantly improve their literacy skills and ability to collaborate (Neumann, 2023). In conclusion, digital storytelling is proving to be a valuable methodology in cultural education, providing students with the opportunity to connect with their cultural heritage while developing empathy and digital skills. This approach transforms education into an interactive, inclusive and future-oriented process.

Research

This research aims to investigate how digital storytelling can contribute to the cultivation of empathy and cultural awareness among primary school students, by capitalizing on local traditions. The main hypothesis is that the active involvement of students in documenting and reinterpreting community traditions through digital means has a significant impact on their emotional and social development.

The study was carried out over a period of six months and included 60 students from the third and fourth grades, selected from two primary schools, one located in the urban area and the other in the rural area. The participants were divided into two groups: the experimental group, which was involved in digital storytelling activities centered on local traditions, and the control group, which followed the usual educational

program.

The students in the experimental group participated weekly in structured sessions, which aimed to document the traditions specific to their community, such as Easter holidays, harvest customs or stories about local craftsmen. The process included steps such as gathering information through interviews with community members, observing customs first-hand, and researching the archives of the school or local library. Subsequently, this information was turned into digital stories using accessible tools like Canva and Powtoon. Each session ended with reflections on lived experiences, in order to stimulate empathy and collaboration.

The methodology used was mixed, including both quantitative and qualitative methods. The students' level of empathy was assessed before and after the intervention, using a child-adapted variant of the Basic Empathy Scale (Jolliffe & Farrington, 2006). In parallel, the observations made by the teachers provided information about how the students collaborated in teams and about their degree of involvement. The digital stories created by the students were analysed to identify the authenticity of the cultural elements included and to assess the impact on the understanding of community values. Also, semi-structured interviews with students and teachers provided detailed insights into perceived changes in participants' attitudes and behaviors.

This intervention was designed not only to increase students' cultural awareness, but also to develop their digital skills, providing them with a creative environment through which to learn about local traditions. The activities have been adapted to the needs and level of understanding specific to primary education, with an emphasis on experiential and collaborative learning.

It is anticipated that students in the experimental group will demonstrate a significant increase in empathy and cultural awareness, compared to those in the control group. Also, the digital stories made by students are expected to reflect a deeper understanding of local traditions, as well as an increased appreciation for cultural diversity.

Results

The study demonstrated the significant impact of the use of digital storytelling on the development of empathy, cultural awareness and collaboration skills among primary school students. The analysis of the collected data showed notable differences between the experimental group and the control group, emphasizing the effectiveness of this educational method.

The increase in empathy was one of the most obvious results of the intervention. The scores obtained on the Basic Empathy Scale showed a significant improvement in the experimental group, where students

demonstrated a better understanding of the emotions and perspectives of others. Semi-structured interviews confirmed these results, with students stating that the activities of documenting local traditions helped them to appreciate more the experiences and stories of other members of the community. The teachers noticed a more empathetic attitude in the interactions of the students, who were more open to collaboration and more attentive to the needs of their colleagues.

In terms of cultural awareness, the digital stories created by the students reflected an authentic integration of local traditional elements. The analysis of these projects showed that the students included complex details about traditions such as winter holidays, folk crafts and agricultural customs. Additionally, students demonstrated creativity in how they combined traditional information with digital technology, using images, animations, and text to personalize their stories. Teachers reported that students were motivated to explore and present aspects of their culture that they previously considered less relevant.

The development of collaboration skills was another key outcome observed during the intervention. The activities were designed to encourage teamwork, and the students in the experimental group demonstrated an increased ability to work together to achieve common goals. The direct observations made by the teachers underlined the fact that the students learned to share tasks, listen to their colleagues' ideas and support their points of view in a constructive way. These skills were especially highlighted in the documentation stages and in the final presentations of the stories.

In addition to empathy and collaboration, the students' creativity was stimulated through the process of creating digital stories. Students were encouraged to integrate personal elements and add visual and audio details that enrich the narrative. The analysis of the projects showed a variety of original approaches, from describing local customs through a child's perspective, to using humor and visual metaphors to make the stories more engaging.

Motivation for learning increased significantly among students in the experimental group. The teachers noticed an active and enthusiastic participation in the activities, the students showing interest in documenting local traditions and in the use of technology for educational purposes. Also, the storytelling events had a positive impact on the students' self-confidence, who enjoyed the appreciation of their peers and teachers.

In conclusion, the results of this study highlight the multiple benefits of integrating digital storytelling into primary education. Increasing empathy, cultural awareness and collaboration, along with stimulating creativity and motivation, confirm the value of this method as a modern and effective educational tool.

Conclusions

The results of this study demonstrate the significant positive impact of digital storytelling on the development of empathy, cultural awareness and social competences of primary school students. The method has proven to be an effective tool for connecting students with local traditions, while giving them the opportunity to develop their creativity and technological skills.

Students' participation in documenting local traditions and turning them into digital stories facilitated a better understanding of cultural diversity and community values. The students in the experimental group demonstrated increased empathy, both towards their peers and towards the interviewed community members, indicating sustained emotional development. The stories created by them reflected the authenticity of their cultural heritage, highlighting their creativity and sensitivity to the details of local traditions.

Another notable result was the increase in students' ability to collaborate effectively. Group activities within the digital storytelling sessions promoted mutual respect, fair distribution of tasks and mutual support, thus contributing to the development of an inclusive and collaborative learning environment. These skills are essential in preparing students for a society based on cooperation and effective communication.

Also, the use of digital technology has boosted students' motivation for learning, providing them with a modern and attractive platform for exploring traditions. The creative process involved in digital storytelling was perceived by students not only as an educational activity, but also as an opportunity for personal expression, strengthening self-confidence and enthusiasm for future projects.

Based on these conclusions, it is recommended to integrate digital storytelling into the school curriculum, especially in subjects that promote cultural education, history and the arts. Teachers should be trained to be able to implement this methodology in an effective way, using accessible digital resources adapted to the age level of students. In addition, extending this method to disadvantaged backgrounds can help reduce educational disparities, providing students with equal opportunities to develop their socio-emotional and cultural competences.

In conclusion, digital storytelling is a bridge between the past and the future, connecting students with their cultural roots and preparing them for the challenges of a global society. This innovative approach transforms cultural education into an interactive, inclusive process oriented towards the holistic development of students.

References

- Goleman, D. (2024). *Emotional Intelligence: New Perspectives for Education*. HarperCollins
- Hull, G. A., & Katz, M. L. (2023). *Crafting empathy through digital storytelling*. *Research in the Teaching of English*
- Ministerul Educației. (2022). *Educație prin patrimoniu: Ghid pentru profesori*. Editura Didactică și Pedagogică
- Neumann, D. L. (2023). *The role of digital tools in fostering creativity and collaboration*. *Educational Technology Review*
- OECD. (2023). *Educational Innovation: Bridging Cultural Gaps*. OECD Publishing
- Robin, B. R. (2022). *Digital storytelling: A new era in educational engagement*. *International Journal of Learning*
- Smeda, N., Dakich, E., & Sharda, N. (2014). *The effectiveness of digital storytelling in the classrooms: A comprehensive study*. *Smart Learning Environments*
- UNESCO. (2023). *Storytelling for sustainable education*. UNESCO Publishing
- UVT. (2024). *Impactul tehnologiilor educaționale în mediile defavorizate*. Universitatea de Vest din Timișoara.

THE EFFECTIVE MATHEMATICS TEACHING: THE ROADMAP TO DEVELOPING PUPILS' INTEREST AND UNDERSTANDING OF MATHEMATICS

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Abstract: *The study looks at the roadmap for increasing pupils' interest in and comprehension of mathematics, which is a successful method of teaching the subject. Because mathematics is so important to our everyday lives, it should be studied by everybody. Correct handling of mathematics necessitates having effective teachers. One prerequisite for this effective teaching of mathematics was the creation of a suitable classroom environment. In the classroom, a welcoming environment is necessary. The study examined successful methods of teaching mathematics to foster students' interest in and comprehension of the subject. Some of the literature looked at the efficacy of math instruction. The study looks at successful math teachers and the strategies they should employ to get kids more interested in the subject. A review of certain studies on the effectiveness of math training was done. The study looks at creative math instructors and various approaches to using efficient teaching methods to pique students' interest in math.*

Key words: *effective teaching; mathematics; pupils; interest.*

Introduction

Over time, there have been substantial changes in the realm of education. As a result of these developments, a lot of work is being done to figure out how to use different methods and advances to enhance the services that kids receive in schools (Ahmad, 2020, Chetty, Friedman & Rockoff, 2015, Gustafsson & Nilson, 2016, Garet et al., 2016). Classroom management is a generic word used to describe the actions teachers do to address student behaviour, instructional strategies, and classroom activities. The process includes handling behavioural problems, maintaining discipline, giving the right instructions, and evaluating the activities that students do in class. Despite attempts to train instructors in the best ways to raise students' academic performance, little is known about the precise strategies that should be employed in math lessons (Ahmad, 2020). Most people believe that managing the different aspects of one's social, civil, and private life requires a basic understanding of

mathematics. Like in the past, a lot of children now have trouble with arithmetic, which discourages them since they keep running into problems when they need to be competent (Anthony & Walshaw, 2009, Onoshakpokaiye, 2021).

For math instructors to address this issue, they must understand the essential elements of a quality mathematics education. Teachers who see gains in their students' academic performance do so because they believe that all students should be exposed to mathematics education from a wide range of perspectives (Anthony & Walshaw, 2009, Onoshakpokaiye, 2024). In this sense, classroom management is important to education and influences the degree to which academic objectives are met. It is also clear that teachers and other partners in teaching are particularly aware of math competency issues. Math underachievement is one of the most significant educational issues that have to be addressed right now. The premise of the argument is that mathematics is an essential part of every academic field. Given how important mathematics is to students' achievement, it is critical to establish an atmosphere that will maximize their performance.

The inventive math instructors

Good instruction depends on the efficacy or accountability of math teachers. According to Onoshakpokaiye (2024), pupils of any age can cultivate good mathematical personality and become prominent mathematicians. Effective classroom management is essential to both teaching and learning. According to Ahmad (2020), it helps teachers convey instructions and helps pupils reach their maximum potential. **Inventive** math teachers often demonstrate real care for their pupils' dedication, according to prior study (Noddings, 1995). In order to provide pupils an opportunity to develop their social and mathematical identities, the math instructor tries to build relationships. They provide opportunities for pupils to inquire about the rationale behind the class's activities and the anticipated outcomes, and they have realistic expectations for enhancing the students' ability to reason, communicate, think, and assess their own work (Watson, 2002, Anthony & Walshaw, 2009). To ensure that every student feels included, a great or inventive math teacher considers and honors the cultures that each kid brings to the classroom. They ensure every kid is comfortable, able to engage, and feels like they belong.

In the classroom, good math teachers create relationships that enable students to solve problems, ask questions, and reason on their own (Angier & Povey, 1999, Onoshakpokaiye, 2024). Each student's participation in the classroom is essential to the development of their mathematical thinking. Inventive teachers focus on the many needs that

result from the students' varied languages, living situations, perspectives, and abilities while making equitable arrangements. Inventive math teachers ensure every student have the opportunity to try mathematics independently without seeking help. The most crucial resource for assisting pupils in developing their mathematical identities is their teachers (Cobb & Hodge, 2002). Teachers have an impact on how students accept and feel confident in themselves in the classroom (Walshaw, 2004). The teachers' positive attitudes toward the subject help students feel more at ease, broaden their knowledge base, and are able to study and understand mathematics. With confidence in their comprehension, students will be better able to consider new ideas presented by the teacher, take into account the opinions of other students, research the validity of various methodologies, and persevere despite mathematical difficulties.

Techniques that excellent math teachers might employ to spark pupils' interest

1. Making use of students' ideas while attending to their needs

The instructors must become specialists in the areas of teaching mathematics and evaluating the pupils' past mathematical knowledge as well as their study and reasoning skills. These pupils' prior understanding of the subject they are about to learn must be valued by their math teachers (Onoshakpokaiye, 2020). Teachers must create, understand, and implement efficient teaching strategies in order to instruct pupils in mathematics (Lampart, 2001). By concentrating on improving pupils' current proficiencies rather than filling in knowledge gaps and fixing inadequacies, effective teachers may be sensitive to their pupils and the discipline (Carpenter, Fennema, & Franke, 1996). It's critical that educators and students listen to one another in order to structure a common understanding. Teachers are better able to decide when to enter and exit the discussion, when to push for understanding, when to address confusion or distortion, and when to resolve pupils' conflicting claims when they pay close attention to what they have to say (Lobato, Clarke, & Ellis, 2005, Onoshakpokaiye, 2024).

Lessons in mathematics should be planned and executed by an excellent instructor so that pupils may build on their existing knowledge, interests, and abilities. Effective instructors should consider the pupils' current interests and information while planning lessons and making judgments about their education. Based on their knowledge of the pupils' competences, language, evaluation, listening and reading skills, and ability to handle mathematical thought processes and challenges, effective instructors modify their lessons to meet the requirements of their pupils. Mathematics teachers can learn about pupils' study habits, interests, apparent knowledge, and competence by observing how they

work individually or in groups, listening to the language they use, checking their understanding, and having conversations with them. They can also observe the methods that pupils prefer during regular classroom activities (Onoshakpokaiye, 2023a).

Math teachers may keep an eye on classroom activities to determine whether they are progressing and stay informed about what needs to be done to satisfy the learning goals of their pupils due to the data they collect (William, 2007). By routinely evaluating pupils at every level, proficient math teachers can choose what to ask, what to ask next, how to answer pupils' questions, and when to join in on their activity. Furthermore, teachers need to know how to deal with negative conduct in the classroom and ensure that children get the support and direction they need (Hasibuan, 2001, Levin & Nolan, 2003, Hadriah, 2015). With the correct classroom monitoring strategies, these goals may be accomplished. Effective classroom management is one of the criteria that distinguish bad performance from the accomplishment of academic goals.

2. Creating an atmosphere that promotes learning among children

One of the most important duties of the teacher is to create outstanding lesson plans that take into account the demands of the pupils. Math instructors' capacity to successfully teach material in classes with few disturbances is associated with the pattern. Instructors should be passionate about what they do and provide an environment that encourages learning so that pupils want to learn new things (Liu, Wang & Ryan, 2016, Blankson & Blair, 2016, Onoshakpokaiye, 2024). According to Sfard and Keiran (2001), every student requires specific time to work autonomously and reflect apart from the numerous and often conflicting viewpoints of other pupils. Math teachers are expected to choose lessons that will help pupils learn and provide them with the resources they need to comprehend novel concepts.

Furthermore, the instructor must to establish well-defined objectives for the class and offer perceptive criticism (Hafen et al., 2015, Lessani, Yunus & Bakar, 2017). It's also critical to remember that the teacher can be expected to establish a rapport with the pupils, offer them assistance, and encourage learning. These objectives are only met when effective classroom monitoring techniques are used. In addition to boosting involvement, group formation facilitates testing, idea exchange, and the development of higher order thinking skills (Ding, Li, Piccolo & Kulm, 2007). Peer groups can facilitate the process of sharing ideas and learning from others (Anthony & Walshaw, 2009). According to O'Conner and Michaels (1996), pupils learn how to venture a guess and participate in core activities and disputes in mathematics in supportive small-group environments.

In groups with varying academic achievement levels, material is presented at various levels, which usually fosters a deeper comprehension of the subject matter. However, the instructor must clarify the concept of participation and make sure that the participants' abilities—such as writing, inquiring, listening, and responding are comprehended and used (Hunter, 2008). In other words, if teaching mathematics improves pupils' learning, it is effective (Chris Coombes generation ready, 2013).

3. Be aware of the facts that kids need to know.

One of the elements that have contributed to the progress in the education sector is the contemporary educational environment, which is typified by children with exceptional needs and abilities (Ahmad, 2020). The ideas and processes that comprise the framework of mathematical standards that pupils need to know are well known and understood by effective teachers. These educators have a thorough comprehension of ideas and use a range of methods to address and comprehend them. Additionally, they are aware of the methods and routines that their pupils will require to be successful in mathematics. The government's attempts to raise the standard of education would be ineffective if no steps are taken to enhance teachers' capacity to oversee the classroom.

Since classroom monitoring is crucial to the learning process, the quality of education might suffer if it is not used effectively. Because of the trend, researchers are looking at potential strategies to prevent disturbances, resolve disagreements, and encourage learning in classroom settings (Demirdag, 2015). The studies' conclusions provide important insights that may be used to improve math education and guarantee that pupils achieve at the greatest possible levels. Nez, Fernandez, León, and Grijalvo (2015) and Longobardi, Prino, Marengo, and Settanni (2016) state that learning results may suffer as a result of discipline issues in a badly run classroom.

4. Creating specialized educational experiences

All action pupils participate in can teach them mathematics. Mathematical experiences may be found in literature, music, social studies, science, movement, language, art, and every other facet of the classroom learning environment (Onoshakpokaiye, 2020). An extended examination gives pupils great chances to make connections between mathematics and to foster independence, self-control, and adaptability in addressing real-world issues (NCTM, 2000). Conversely, a well-run classroom creates an atmosphere in which the instructor can help pupils flourish and comprehend ideas. Researchers agree that one of the things preventing new instructors from making a big impact on pupils and advancing their careers is unlucky or poor classroom management (Curwin & Mendler, 2008, Canter, 2010). Furthermore, the practice has been connected to problems including teacher burnout and stress.

Generally speaking, math teachers have to determine how effectively they can manage such behaviour and help pupils realize their full potential regardless of the situation.

Effective math teachers face issues in pertinent and significant contexts to give their pupils meaningful learning opportunities. The need for problem-solving to be an essential part of all mathematics education is sufficiently supported by the available data. However, problem-based learning suggests that real-world scenarios, challenges, and models help pupils grasp mathematics (Onoshakpokaiye, 2024). By using particular scenarios and models, pupils are able to get an understanding of the principles. By continuing in this manner, they can ultimately arrive at more abstract ideas.

A difficulty is any work or action for which pupils lack the ability to recall rules or methods, have no choice in the matter, or even know that there is a certain appropriate arranging technique. To more effectively enhance the quality of education, the math instructor should be able to manage the classroom and have two skills: (a) well-planned learning programs; and (b) effective class management. According to Lavy (2015) and Burroughs (2019), classroom management encompasses the activities that math teachers design to organize and direct classes in a way that will result in the achievement of certain academic objectives. To help pupils build skills and strategies, good math teachers will include ideas like early phases and a continual approach for them to explore and comprehend calculated thinking. With the help of these challenges, all pupils receive the appropriate sectional attention to actively foster conceptual knowledge and more sophisticated problem-solving abilities.

5. Understanding student learning

Nwachukwu (2009) asserted that knowledge has several levels of objectives that pupils can achieve, depending on the levels of information that are taught to them. He went on to argue that instructors should take entering behaviour into consideration since it is the basic building block that new information is built upon. As Onoshakpokaiye (2007) notes, pupils have varying methods of grasping certain mathematical concepts, thus teachers should try harder to communicate these ideas. The finest teaching methods for their pupils' learning are known to effective math teachers. According to these teachers, pupils must first comprehend the ideas being presented as well as the abilities being taught in order to utilize mathematics successfully (Chris Coombes generation ready, 2013, Onoshakpokaiye, 2023b). Consistent and more complex use of ideas, concepts, and skills helps pupils become more comfortable and proficient in their use. Teachers that are successful in math are familiar with the fundamentals of their subject. They are aware of the need of using concrete resources and visual aids

to develop a deep comprehension of the subject matter. Their understanding of the educational procedure that best advances their pupils' knowledge and abilities is realistic.

In order to accommodate each pupil's unique learning demands, they may also employ their diverse sense of taste for growth chances in the classroom. Using the formative principle of what emerges before or after the misunderstanding, effective instructors may analyze pupils' incorrect conclusions from homework, class assignments, or assessments and reteach the content. When pupils have a solid grasp of the material, teachers may immediately address the specific mistakes that they may make. Teachers themselves should be lifelong learners. Effective teaching strategies are the focus of continuous study, and there is rarely a static approach to mathematical education.

6. Determine which of their students are beginners or learners.

Recognizing a pupil as a math learner is difficult. In order to help pupils rapidly form an image of themselves, a good math teacher provides them with several opportunities to demonstrate what they have learned. According to Chris Coombes' Generation Ready (2013), teachers therefore update and expand their knowledge of every student. A skilled teacher uses their increasing knowledge of their pupils as learners to consistently refine their lessons to better suit their needs. Evaluation is fundamentally formative in mathematics. It involves gathering data using a range of techniques and sources. Details on the students' approaches, understandings, viewpoints, and past knowledge and abilities are provided by this.

An essential component of assessing pupils is forming informed opinions about their knowledge. As a result, good teachers evaluate both pupil's performance and their ability to show that they understand the content. Proficient teachers are aware of their pupils' past knowledge and assist them in making the connection between it and the new information they are learning. Additionally, they analyze the material provided, gather data from a range of official and informal sources using a number of techniques, including verbal and written, and incorporate assessment into educational practice. Lastly, they identify the unique learning requirements of every pupils via progressive assessments. This makes it possible for them to actively instruct, helping the pupil to reach predetermined objectives.

Effective math teachers encourage taking risks. A perfect learning environment encourages trust and the sense that mistakes are normal as they are a necessary part of learning. In a classroom setting, a variety of methods are promoted to aid pupils in studying mathematics. It is crucial to emphasize that each teacher goes above and beyond to keep the classroom free of distractions and disruptions in order to meet the learning objectives. Managing pupils' behaviours, arousing them, and

including them in class activities are the most common approaches to classroom management. Consequently, the time spent teaching has become dependent on keeping the classroom in order (Ahmad, 2020). Teachers create a social environment that is just as vital to the real climate.

Studies have indicated that collaboration between teachers and pupils, especially the critical feedback pupils get affects how successful education is (Hattie, 2003, Generation Ready, Chris Coombes, 2013). One must overcome challenges in order to master mathematics. This will undoubtedly occur if pupils feel that their behaviour will be valued. In the study of mathematics, children need to learn from their teachers that making errors is a natural part of learning. By embracing their students' approximations and answering them with information, support, and honesty, teachers may show that they believe in their pupils. Teachers may provide the conditions that promote learning and demonstrate how it should be done by effectively involving the pupils. Pupils should find the course interesting enough to desire to participate in the learning process.

Conclusion

Effective mathematics is essential for math learners. Math comprehension needs a nurturing atmosphere. Math instructors, curriculum developers, and the government must all understand the developmental phases of young children to be able to teach and educate kids in an approach that makes math relevant to them. For the children's future problems to be avoided, math teachers must also ensure that the foundation is laid properly. Pupils may now improve their mathematical knowledge and abilities as they proceed to higher school. Effective education at this level of learning necessitates professional training. Examining certain literature taught us that in order to promote pupils' mathematical learning, math teachers must be successful. If educators wish to keep their pupils interested in mathematics, they must recognize how important it is to teach the subject well. For that reason, it should not be ignored.

References

- Ahmad, E. S. (2020). Classroom management in Mathematics class: university students' perception. *International Research Association for Talent Development and Excellence*, 12(1), 429-442.
<http://digital.library.ump.ac.id/837/1/Classroom%20Management%20in%20Mathematics%20Class%20University%20Students%E2%80%99%20Perception.pdf>

- Angier, C., & Povey, H. (1999). One teacher and a class of school students: Their perception of the culture of their mathematics classroom and its construction. *Educational Review*, 51, 147-160.
- Anthony, G. & Walshaw, M. (2009). Characteristics of Effective Teaching of Mathematics: A View from the West *Journal of Mathematics Education* 2(2), 147-164
- Blankson, A. N., & Blair, C. (2016). Cognition and classroom quality as predictors of math achievement in the kindergarten year. *Learn. Instr.* 41 32–40. 10.1016/j.learninstruc.2015.09.004
- Burroughs, N. (2019). A review of the literature on teacher effectiveness and student outcomes. In: *Teaching for Excellence and Equity. IEA Research for Education (A Series of In-depth Analyses Based on Data of the International Association for the Evaluation of Educational Achievement (IEA))*, 6. Springer, Cham
- Canter, L. (2010). *Lee Canter's assertive discipline: Positive behavior management for today's classroom*. Bloomington, IN: Solution Tree, Inc.
- Carpenter, T., Fennema, E., & Franke, M. (1996). Cognitively guided instruction: A knowledge base for reform in primary mathematics instruction. *The Elementary School Journal*, 97(1), 3-20.
- Chetty, R., Friedman, J. N., & Rockoff, J. E. (2015). Measuring the impacts of teachers II: Teacher value-added and student outcomes in adulthood. *American Economic Review*, 104(9), 2633–2679.
- Chris Coombes generation ready (2013). What is effective teaching of mathematics Retrieved July 15, 2020 from [Effective-Teaching-of-Mathematics.pdf \(generationready.com\)](https://www.effective-teaching-of-mathematics.com/generation-ready/)
- Cobb, P., & Hodge, L. L. (2002). A relational perspective on issues of cultural diversity and equity as they play out in the mathematics classroom. *Mathematical Thinking and Learning*, 4, 249–284.
- Curwin, R. L. & Mendler, A. N. (2008). *Discipline with dignity*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Demirdag, S. (2015). Classroom management and students' self-esteem: Creating positive classrooms. *Educational Research and Reviews*, 10(2), 191-197
- Ding, M., Li, X., Piccolo, D., & Kulm, G. (2007). Teaching interventions in cooperative learning mathematics classes. *The Journal of Educational Research*, 100, 162-175.
- Garet, M. S., Heppen, J. B., Walters, K., Parkinson, J., Smith, T. M., Song, M. Garrett, R., & Yang, R, (2016). Focusing on

- mathematical knowledge: The impact of content-intensive teacher professional development. National Center for Education Evaluation and Regional Assistance paper 2016-4010. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, US Department of Education. Retrieved July 15, 2020 from <https://files.eric.ed.gov/fulltext/ED569154.pdf>
- Gustafsson, J.E., & Nilsen, T. (2016). The Impact of School Climate and Teacher Quality on Mathematics Achievement: A Difference-in-Differences Approach. In: Nilsen, T., Gustafsson, J.E. (eds) *Teacher Quality, Instructional Quality and Student Outcomes*. IEA Research for Education, 2. Springer, Cham. https://doi.org/10.1007/978-3-319-41252-8_4
- Hadriah, S.T. (2015). *Manajemen Kelas Pada Sekolah Dasar Negeri 29 Ciniayo Kabupaten Jenepono*. Skripsi. Makassar: Fakultas Ilmu Pendidikan Universitas Negeri Makassar
- Hafen, C.A., Hamre, B.K., Allen, J.P., Bell, C.A., Gitomer, D.H., & Pianta, R.C. (2015). Teaching through interactions in secondary school classrooms: Revisiting the factor structure and practical application of the classroom assessment scoring system—secondary. *The Journal of Early Adolescence*, 35(5–6), 651–680.
- Hanushek, E., Piopiunik, M., & Wiederhold, S. (2018). The value of smarter teachers: International evidence on teacher cognitive skills and student performance. *Journal of Human Resources* <https://doi.org/10.3368/jhr.55.1.0317.8619r1>
- Hasibuan, M. (2001). *Manajemen Dasar Pengertian dan Masalah*. Jakarta: Bina Aksara
- Hiebert, J., Carpenter, T., Fennema, K., Fuson, D., Wearne, D., Murray, Hanle., Olivier, A., & Human, P. (1997). *Making Sense: teaching and learning mathematics with understanding*. Portsmouth, NH: Heinemann.
- Jerrim, J., Lopez-Agudo, L., Marcenaro-Gutierrez, O., & Shure, N. (2017). What happens when econometrics and psychometrics collide? An example using the PISA data. *Economics of Education Review*, 61, 51–58.
- Lampert, M. (2001). *Teaching problems and the problems of teaching*. New Haven, CT: Yale University Press.
- Lavy, V. (2015). Do differences in schools' instruction time explain international achievement gaps? Evidence from developed and developing countries. *The Economic Journal*, 125(11), 397–424.
- Levin, J., & Nolan, J. F. (2003). *What every teacher should know about classroom management*. Boston, MA: Pearson Education, Inc

- Lessani, A., Yunus, A., & Bakar, K. (2017). Comparison of new mathematics teaching methods with traditional method. *PEOPLE: International Journal of Social Sciences*, 3(2), 1285-1297.
<https://doi.org/10.20319/pijss.2017.32.12851297>
- Liu W. C., Wang J. C. K. & Ryan R. M. (2016). *Building Autonomous Learners*. Singapore: Springer; 10.1007/978-981-287-630-0
- Lobato, J., Clarke, D., & Ellis, A. B. (2005). Initiating and eliciting in teaching: A reformulation of telling. *Journal for Research in Mathematics Education*, 36(2), 101–136.
- Longobardi C., Prino L. E., Marengo D., & Settanni M. (2016). Student-teacher relationships as a protective factor for school adjustment during the transition from middle to high school. *Front. Psychol.* 7:198810.3389/fpsyg.2016.01988
- National Council of Teachers of Mathematics (NCTM) (2000). *Principles and standards for school mathematics*. Reston, VA: Author.
- Noddings, N. (1995). *Philosophy of education*. Oxford: Westview Press.
- Núñez J. L., Fernández C., León J., Grijalvo F. (2015). The relationship between teacher's autonomy support and students' autonomy and vitality. *Teach. Teach.* 21 191–202.
- Nwachukwu, P.O. (2009). *Understanding teachers' professional competencies for education effectiveness*, Owerri. Springfield Publishers limited.
- O'Connor, M. C., & Michaels, S. (1996). Shifting participant frameworks: Orchestrating thinking practices in group discussion. In D. Hicks (Eds.), *Discourse, learning and schooling* (63–103). New York: Cambridge University Press.
- Onoshakpokaiye, E.O (2007) Promoting good beginnings of early childhood mathematics. *Journal of Educational Research and Policies* 2(3), 36-38
- Onoshakpokaiye, E. O. (2020). Methods to build, develop mathematical concepts and skills in the early childhood mathematics in Nigeria. *Journal Plus Education*. XXVII (2), 211-225
- Onoshakpokaiye, E. O. (2021). Mathematics Learning Disability: Some Strategies to Teach Students who have Mathematics Learning Disability. *Innovations*, 66, 143-153
- Onoshakpokaiye, E. O. (2023a). Early Childhood Mathematics: an Insight into Strategies for Developing Young Children Mathematical Skills. *Mathematics Education Journal*, 7(1), 16-30. DOI: 10.22219/mej.v7i1.24534

- Onoshakpokaiye, E. O. (2023b).. An overview of reasoning ability in mathematics and mathematics achievement of students in tertiary institution. *International Journal of Indonesian Education and Teaching*, 7,(2), 309-318.
<https://doi.org/10.24071/ijiet.v7i2.5988>
- Onoshakpokaiye, E. O. (2024). Strengthening early childhood mathematics Education with effective math teachers. *Indonesian Journal of Elementary Teachers Education (IJETE)*, 5(2), 97 - 106
- Sfard, A., & Keiran, C. (2001). Cognition as communication: Rethinking learning-by-talking through multi-faceted analysis of students' mathematical interactions. *Mind, Culture, and Activity*, 8(1), 42–76.
- Walshaw, M. (2004). A powerful theory of active engagement. *For the Learning of Mathematics*, 24(3), 4-10.
- Wiliam, D. (2007). Keeping learning on track. In F. K. Lester (Ed.), *Second handbook of research on mathematics teaching and learning* (1053- 1098). Charlotte, NC: Information Age.

APPROACHING THE FEUERSTEIN METHOD THROUGH SELF-DETERMINATION THEORY IN THE CONTEXT OF SOCIAL INCLUSION OF ADOLESCENTS WITH AUTISTIC DISORDER

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Abstract: *In the context of education aimed at inclusion and personalization of the educational process according to individual needs, implementing interventions that address the challenges faced by adolescents with autism spectrum disorders (A.S.D.) becomes essential. The Feuerstein Method, based on cognitive modifiability, mediated learning, and instrumental enrichment, together with Deci and Ryan's Self-Determination Theory, outlines an integrative approach that supports the autonomy, competence, and relational needs of adolescents with A.S.D., while also contributing to cognitive function development, social integration, and improvement in their quality of life (Deci, & Ryan, 2017; Tудоce, Salime, Deloyer, & al., 2023). Studies have shown that adolescents participating in instrumental enrichment programs demonstrate significant improvement in their ability to identify and manage emotions, as well as in self-regulation, self-esteem, autonomy, and social relationship skills (Bailey & Pransky, 2010; Dughi, 2022; Runcan, Runcan, Goian, Nadolu, & Gavrila-Ardelean, 2020; Todor, 2014).*

Key words: *Feuerstein method; Self-Determination Theory; instrumental enrichment program; mediated learning; adolescents with autistic disorder.*

Introduction

Adolescents with autism spectrum disorders frequently experience a deficit in communication and social interaction, which can often lead to social isolation, peer rejection, and also impacts on school and career

success (Andanson, Pourre et al., 2011). These social and emotional difficulties significantly limit their active participation in the community and considerably affect their quality of life (Gavrilă-Ardelean, 2019).

Even though autism is not currently considered a curable disorder, there are numerous studies (Lovaas, 1987; Mesibov, Shea & Schopler, 2004; Laugeson, Frankel 2010) which demonstrates that it is possible to significantly increase social, communication and adaptation skills to an independent lifestyle.

However, the alarming global increase in the incidence of autism spectrum disorders makes this aspect currently one of the most important medical problems. Thus, according to the report published by the US Center for Disease Prevention and Control, one child in 36 is diagnosed with ASD. These data indicate an increase in prevalence compared to the previous report in 2021, when the proportion was 1 in 44 children (Maenner, Warren, Williams et al., 2023).

Globally, according to the reports submitted by each country, the World Health Organization estimates that the incidence of autism is 1 in 100 people (WHO, 2023).

As for Romania, "the real number of people diagnosed with ASD is not known, however, according to the statistical data requested by the largest organization dedicated to the cause in Romania, HELP Autism, from the National Institute of Statistics (INS) and from the General Directorates of Social Assistance and Child Protection in the 42 counties and municipalities, in the period 2014-2022, there was a 50% increase in the number of new annual diagnoses in the last years, as follows: in 2022, 1436 children were diagnosed with ASD (autism spectrum disorder), while until 2019 the diagnosis rate was about 1000 cases per year." (Ciobotariu, 2024, p.2 ; HELP Autism, 2023).

Under these circumstances, modern education aims to adapt to the unique needs of each student, and exploring an established and customizable intervention strategy, like the Feuerstein method, can have a significant contribution to cognitive development, social inclusion and improving the quality of life of this vulnerable category.

The Feuerstein method, founded by Reuven Feuerstein, proposes the concept of structural cognitive modifiability, arguing that any individual, regardless of initial limitations, through educational mediation, can experience cognitive development (Feuerstein, et al. 1980). Complementarily, self-determination theory, developed by Deci and Ryan, states that the fulfillment of basic needs for autonomy, competence, and relatedness leads to optimal development and sustained intrinsic motivation, being essential for psychological well-being (Deci & Ryan 2017). By integrating these two theoretical frameworks, we can build a holistic educational approach, in which adolescents with ASD

are supported both in cognitive development and in the fulfillment of basic psychological needs.

The Feuerstein method: theoretical foundations and applicability

The Feuerstein method represents an educational framework centered on the concept of structural cognitive modifiability, respectively on the ability of individuals to modify their cognitive functioning structure in order to adapt to the different contexts that appear throughout life (Todor, 2014). In Feuerstein's view, modifiability does not involve a simple reflex act to external stimuli, but rather a response to internal changes, which, like growth, is the result of a series of voluntary and intentional acts that can – and in some cases must – be guided by an outside person (Feuerstein et al. 1980).

Feuerstein argued that the potential for cognitive development is accessible to all human beings if they benefit from a structured learning process, controlled and supported by a mediator (Feuerstein et al., 2015). The theory of structural cognitive modifiability has charted a new direction in the field of educational psychology, emphasizing the transformation of cognitive abilities and overcoming the traditional limitations of intelligence assessment and predictions regarding individual development.

The mediated learning experience is another central principle of the method, defined as a process by which the mediator, be it a teacher, therapist or parent, intervenes actively and intentionally with the aim of optimally developing the cognitive and emotional skills of the individual and achieving a high level of autonomy (Todor, 2014).

In a mediated learning experience, the mediator intervenes between the child and his environment, having the role of intentionally filtering and organizing stimuli, regulating their intensity, frequency and order. Thus, the mediator creates spatial, temporal and causal links, connecting current stimuli with previous ones and anticipating future ones. Stimuli previously perceived haphazardly will be integrated differently once the mediator organizes them and highlights their meaning. After the child has experienced mediated learning interactions and learned the ability to notice, differentiate and focus, he will continue to interact with the objects around him in an active and intentional way, instead of a passive one (Todor, 2014).

Feuerstein believed that not only the direct contact with the information is essential, but also the way in which it is presented and structured by the mediator to create a meaningful learning experience (Feuerstein, et al., 2015). In mediated learning, the facilitator provides personalized guidance, stimulates reflection and encourages the learner to push their limits, promoting deep and lasting learning (Tzurriel, 2021). This approach is not limited to teaching information, but aims to train the

cognitive structures that allow the individual to interpret and apply knowledge in different contexts (Todor, 2014).

Another essential aspect of the method is the instrumental enrichment program, which includes a series of tools designed to develop and strengthen essential cognitive skills, such as clear perception, systematic exploration, development of verbal reception tools, understanding of spatial and temporal concepts, conservation of measurements, quantity and form, logical thinking, planning and the ability to solve problems (Todor, 2014). Each worksheet in this program is structured to provide not only content but also transferable cognitive strategies to other areas of life.

The Feuerstein method can be integrated into a wide range of educational and clinical contexts, being used both for typical children and adults, but also for children with learning difficulties, respectively for people with cognitive impairments. Moreover, this method has demonstrated great effectiveness in improving cognitive functions and social skills and in the situation of people with autism spectrum disorders and other developmental deficiencies (Lebeer&Roth, 2000; Todor, 2014).

To analyze the efficiency of the Feuerstein method, I performed a systematic literature review, selecting 7 relevant articles that I will summarize in the table below:

Article	Author	Year of appearance	publication	Abstract	Methodology	Results and conclusions
Mediated Learning Experience and Psychological Tools: Vygotsky's and Feuerstein's perspectives	Alex Kozulin & Barbara Z. Presseisen	1995	Educational Psychology	The article compares Vygotsky's and Feuerstein's approaches to the mediated learning experience, highlighting the importance of psychological tools and mediation for cognitive development.	Theoretical analysis using the perspectives of Vygotsky and Feuerstein to discuss the impact of mediated learning experience on cognitive development	The article suggests that mediated learning experiences contribute significantly to the development of cognitive skills and the creation of

					ment, with examples of application in various educational settings.	flexible thinking strategies. Integrating mediational techniques into traditional schools is recommended to support the development of cognitive functions among students from diverse backgrounds.
Cognitive Modifiability in Retarded Adolescents: Effects of Instrumental Enrichment	Reuven Feuerstein et al.	2004	Developmental Neurorehabilitation	The study examines the impact of the instrumental enrichment program on adolescents with cognitive impairment and social disadvantage, assessing cognitive functions, school achievement and classroom interactions.	Longitudinal study of 218 adolescents conducted over 2 years, comparing two groups – an experimental group that followed the instrumental enrichment program	Adolescents who attended the instrumental enrichment program demonstrated significant improvements in cognitive functions, such as analytical thinking

					and a control group that received a general education program. Testing was done before and after the intervention through cognitive tests, school assessments and classroom observations.	and planning ability, compared to the control group. The residential group performed better on academic assessments, and the day care group showed an increase in social interactions. The study highlights the value of the instrumental enrichment program for disadvantaged groups.
Cognitive modifiability of children with developmental disabilities	Alex Kozulin et al.	2010	Research in Developmental Disabilities	The study examines the effectiveness of the Basic Instrumental Enrichment Program (IE-B) for improving cognitive functions in children with developmental	Multicentre research involving 250 children in experimental and control groups in 5 countries	Children in the experimental group showed a significant increase in scores on cognitiv

				disabilities, including ASD and ADHD, in 5 countries.	. WISC-R subtests and the Raven Matrices were used to measure cognitive performance before and after 12 months of IE-B implementation in schools.	e tests, especially in abstract reasoning and problem-solving skills, compared to the control group. The results support the validity of IE-B in improving cognitive functions in children with ASD and ADHD, thus recommending its integration as a special education method.
Investigating the Classroom Discourse of Mediation in a Feuerstein Instrumental	Francis Bailey & Ken Pransky	2010	Classroom Discourse	The study investigates media discourse and classroom interactions in a Feuerstein Instrumental Enrichment program, examining three universal	Ethnographic observation and discourse analysis of FIE lessons in an ESL classroom	The FIE program contributed to the development of cognitive skills and academic

<p>Enrichment Program me</p>				<p>dimensions of mediated learning: intentionality/reciprocity, transcendence, and meaning.</p>	<p>m with three culturally disadvantaged students. The audio-video transcripts were analyzed to highlight the features of mediated learning.</p>	<p>language, with students demonstrating improvements in critical thinking, self-control and social interactions. The study emphasizes the value of FIE in multicultural and disadvantaged educational environments, providing a solid basis for adapting mediated learning to each student's context.</p>
<p>Interpreting Social Contexts and Emotions and ASD</p>	<p>Rosalyn Adamowycz et al.</p>	<p>2013</p>	<p>Proceedings - Social and Behavioral Sciences</p>	<p>The study explores the difficulties in interpreting social and emotional contexts in children with ASD, discussing the educational intervention based on the "Emotion Identification"</p>	<p>Case study of an 8-year-old girl with ASD, using FIE components and ABA techniques to develop emotion</p>	<p>The girl demonstrated significant progress in identifying and understanding emotions, improving her</p>

				of the Feuerstein program and ABA strategies for developing this skill in inclusive settings.	al recogniti on skills. Evaluati on carried out during 6 months.	ability to interact with others in an inclusiv e setting. The study confirm s the utility of combin ing FIE and ABA for the develop ment of social skills in children with ASD, indicatin g the potential of the approac h in inclusiv e school settings.
The Feuerste in Program : Design of Experim ental Researc h	Otilia Todor	2014	Transilvani a University Publishing House	The research presents an experimental design applied to the Feuerstein Program in Romania, analyzing its effects on the cognitive functions of children with special educational needs and non-special educational	Experim ental design with 150 students (with special educatio nal needs and non-special educatio nal needs groups) in 15 schools,	Children with special educatio nal needs who participa ted in the Feuerste in program showed significa nt gains in cognitiv

				needs, including attention, executive functions and socio-emotional development.	assessing cognitive skills before and after program implementation using tests such as NEPSY and Raven Matrices, over 2.5 years.	e skills, especially in attention and emotional control, compared to the non-special educational needs group. Self-control and social integration improved considerably, highlighting the impact of the program on cognitive and socio-emotional skills in children with special needs in the context of remedial education in Romania.
Students' self-efficacy	Tiberiu Dughi, Roxan	2022	Aurel Vlaicu University	The study explores the role of Reuven	Experimental study	The FIE program led to a

<p>and Feurstein Instrumental Enrichment</p>	<p>a Ianc Feregan</p>		<p>Publishing House</p>	<p>Feuerstein's (FIE) instrumental enrichment program in increasing perceived efficacy and locus of control in preadolescents</p>	<p>with 40 preadole scents divided into control and experim ental groups. The intervent ion included 12 worksho ps in which two tools of the Feuerstei n method were used: Organiza tion of Points and Instructi ons. Assessm ents were made before and after the intervent ion through specific tests for perceive d efficacy and locus of control.</p>	<p>significa nt increase in students' perceive d efficacy and a shift in locus of control from external to internal. These changes increase d students' confiden ce and responsi bility towards their own learning process, facilitati ng a deeper and more autonom ous involve ment in educatio nal activitie s.</p>
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Thus, studies have shown that the instrumental enrichment program, in addition to the remarkable improvement of cognitive functions, also has a significant contribution in the identification and understanding of emotions, in the development of self-regulation capacities, in increasing self-esteem, autonomy, but also in enhancing skills of social relations, thus facilitating inclusion and adaptation in society (Bailey & Pransky, 2010; Todor, 2014; Dughi, 2022).

The applicability of this method within inclusive education has particular relevance for adolescents with ASD, responding to their specific needs to develop cognitive and socio-emotional skills in a structured way and adapted to the individual learning pace.

Self-determination theory in the context of improving the quality of life and social inclusion of adolescents with ASD

Self-determination theory developed by Deci and Ryan focuses on the concepts of human motivation and well-being, providing a model for understanding the motivational foundation of personality and social behavior, and the relationship between basic psychological needs and well-being, psychological flourishing, and a high level of quality of life (Ryan, Deci, 2017).

This theory identifies three fundamental psychological needs that are essential nutrients for individuals to experience continued growth, integrity, and well-being, namely: the need for autonomy, competence, and relatedness.

Self-determination theory starts from the premise that human beings are naturally active, having an innate tendency to assimilate, seek and master challenges, but also to integrate new experiences. Although these processes are inherent in human nature, they do not work efficiently and develop to their maximum potential only through the continuous satisfaction of the 3 basic psychological needs mentioned above (Ryan, Deci, 2022).

According to the Self-Determination Theory, all individuals have the innate need to relate to others, to feel autonomous and to demonstrate that they are competent, and the social environments that contribute to the fulfillment of these needs have an important contribution to the development of the ability to self-regulate, but also to satisfactory social relationships and a high level of quality of life.

Synergy between the Feuerstein Method and Self-Determination Theory

The Feuerstein method provides a solid framework for interventions that support the satisfaction of the three fundamental needs identified by self-determination theory (autonomy, competence, relatedness), ensuring the cognitive development and social integration of adolescents with ASD.

Thus, in the process of mediated learning, the mediator guides adolescents to explore various strategies and solutions with the aim of learning to manage problematic situations, becoming more autonomous and skilled in personal choices.

Adolescents with ASD can also be encouraged to develop essential planning, organizing and problem-solving skills. The progressive structure of the instrumental enrichment program, accompanied by the positive feedback provided by the mediators, contributes to strengthening the sense of competence and confidence in one's own abilities.

At the same time, the relationship between adolescents and mediators gives the former the opportunity to practice and improve their social skills in a safe and supportive environment.

In conclusion, an intervention based on the principles of the Feuerstein method in correlation with the three dimensions of the Self-Determination Theory results in increasing the autonomy of this vulnerable group, thus contributing to the improvement of performance, social skills and quality of life. At the same time, creating an environment that supports competence and autonomy stimulates intrinsic motivation, essential in learning the various skills needed to live in today's society.

Conclusions and implications for inclusive educational practice

The implementation of the Feuerstein method, together with the principles of Self-Determination Theory, brings multiple benefits for adolescents with ASD, facilitating not only cognitive development, but also social inclusion. Studies have shown that adolescents who participate in instrumental enrichment programs significantly improve their ability to identify and manage emotions, develop their self-regulation capacity, but also self-esteem, autonomy, and social relationship skills (Bailey & Pransky, 2010; Todor, 2014; Dughi, 2022). In conclusion, the intervention supported by the Feuerstein method in association with the principles of Self-Determination Theory outlines a complex educational model, aimed at improving cognitive functioning, increasing autonomy, the ability to relate and the feeling of competence, thus facilitating the social inclusion of adolescents with ASD.

References

- Adamowycz, R. et al. (2013). *Interpreting Social Contexts and Emotions and ASD. Procedia - Social and Behavioral Sciences*.
- Andanson, J., Pourre, F., Maffre, T., & Raynaud, J.-P. (2011). Les groupes d'entraînement aux habiletés sociales pour enfants et adolescents avec syndrome d'Asperger: Revue de la littérature.

- Archives de Pédiatrie, Volume 18, Issue 5, Pages 589-596, ISSN 0929-693X, <https://doi.org/10.1016/j.arcped.2011.02.019>.
- Bailey, F., & Pransky, K. (2010). *Investigating the classroom discourse of mediation in a Feuerstein instrumental enrichment programme. Classroom Discourse, 1*(2), 121–141. <https://doi.org/10.1080/19463014.2010.514111>
- Ciobotariu, A. (2024). Terapiile pentru copiii, tinerii și adulții cu tulburări de spectru autist pot fi decontate prin CAS. *Critic Arad*.
- Deci, E., & Ryan, R. (2017). *Self-Determination Theory: Basic Psychological Needs in Motivation, Development, and Wellness*. New York: The Guilford Press.
- Dughi, T., & Ianc Feregan, R. (2022). *STUDENTS' SELF-EFFICACY AND FEURSTEIN INSTRUMENTAL ENRICHMENT*. Editura Universității Aurel Vlaicu.
- Feuerstein, R., Rand, Y., Hoffman, M. B., & Miller, R. (1980). *Instrumental Enrichment: An Intervention Program for Cognitive Modifiability*. Baltimore: University Park Press.
- Feuerstein, R., Rand, Y., Hoffman, M., Hoffman, M., & Miller, R. (2004). *Voices from the past: Cognitive modifiability in retarded adolescents: effects of Instrumental Enrichment. Pediatric Rehabilitation, 7*(1), 20–29. <https://doi.org/10.1080/13638490310001655140-1>
- Feuerstein, R., Falik, L. H., & Feuerstein, R. S. (2015). *Beyond Smarter: Mediated Learning and the Brain's Capacity for Change*. New York: Teachers College Press.
- Gavrilă-Ardelean, M. (2019), CHILDREN'S RIGHT TO BENEFIT FROM HEALTH SERVICES AND HEALTH EDUCATION, Editura Universității Aurel Vlaicu
- Kozulin, A., & Presseisen, B. Z. (1995). *Mediated learning experience and psychological tools: Vygotsky's and Feuerstein's perspectives in a study of student learning. Educational Psychologist, 30*(2), 67–75. https://doi.org/10.1207/s15326985ep3002_3
- Kozulin, A., & Garb, E. (2002). *Dynamic assessment of EFL text comprehension of at-risk students. School Psychology International, 23*(1), 112-127.
- Kozulin, A., Lebeer, J., Madella-Noja, A., Gonzalez, F., Jeffrey, I., Rosenthal, N., & Koslowsky, M. (2010). *Cognitive modifiability of children with developmental disabilities: a multicentre study using Feuerstein's Instrumental Enrichment--Basic program. Research in Developmental Disabilities, 31*(2), 551-559. <https://doi.org/10.1016/j.ridd.2009.12.001>.

- Laugeson, E. A., & Frankel, F. (2010). Social skills for teenagers with developmental and autism spectrum disorders: The PEERS Treatment Manual. Routledge/Taylor & Francis Group.
- Lebeer, J., & Roth, M. (2000). *INSIDE Project: Activating and Including Cognitively Disabled and Culturally Disadvantaged Children through Mediated Learning Experiences*. Comenius Project.
- Lidz, C. S., & Gindis, B. (2003). *Dynamic assessment and remediation: Important tools for the inclusive classroom*. *International Journal of Disability, Development and Education*, 50(3), 293-304.
- Lovaas, OI. (1987) Behavioral treatment and normal educational and intellectual functioning in young autistic children. *J Consult Clin Psychol*. Feb;55(1):3-9. doi: 10.1037//0022-006x.55.1.3. PMID: 3571656.
- Maenner, M. J., Warren, Z., Williams, A. R., et al. (2023). Prevalence and characteristics of autism spectrum disorder among children aged 8 years — Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2020. *MMWR Surveillance Summaries*, 72(SS-2), 1–14.
- Mesibov, G. B., Shea, V., & Schopler, E. (2004). *The TEACCH Approach to Autism Spectrum Disorders*. Springer New York, NY, 212 pp, <https://doi.org/10.1007/978-0-306-48647-0>
- Runcan, R., Runcan, P., Goian, C, Nadolu, B., Gavrilă-Ardelean, M. (2020). SELF-HARM IN ADOLESCENCE. 10.32008/NORDSCI2020/B1/V3/27.
- Todor, O. (2014). *Metoda Feuerstein*. Ed. Universității Transilvania din Brașov.
- Todor, O. (2014). *Programul de îmbogățire instrumentală. Design de cercetare experimentală*. Ed. Universității Transilvania din Brașov.
- Tudoce, B., Salime, S., Deloyer, J., Maes, C., Moraitou, M., PONDAVEN,, J., Munuera, D., Fuenzalida, C., Kelemen, G., & Gavrilă, M. (2023). Empowerment in mental health: from theory to practice, operational perspectives for user self-determination. *Journal plus education*.
- Tzuriel, D. (2001). *Dynamic Assessment of Young Children*. Boston: Kluwer Academic Publishers.
- Tzuriel, D. (2021). The Theory of Structural Cognitive Modifiability and Mediated Learning Experience (SCM-MLE). 10.1007/978-3-030-75692-5_2.

**PERCEPTION: FOOD CHALLENGES, OTHER FACTORS
HINDER STUDENTS OF RURAL AREAS IN SOME
SOKOTO NORTH-EASTERN LOCAL GOVERNMENT
AREAS FROM PROCEEDING TO HIGHER
INSTITUTIONS**

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Abstract: *This study investigates the factors affecting rural students' progression to higher institutions in some local governments of northeastern Sokoto, Nigeria. The findings reveal that 70.0% of respondents attend school without food, while 30.0% bring food. The majority (73.0%) agree that food insecurity affects their education. Socioeconomic factors, including father's income and education, also impact rural students' ability to pursue higher education. Educational factors, such as access to educational tools and school type, also play a significant role. Cultural factors, including cultural background and perceived importance of education, also influence rural students' educational aspirations. The study recommends improving agriculture in rural areas, providing more teachers and funding, and addressing cultural ideals that may discourage education. The findings have implications for policymakers and educators seeking to promote equitable access to higher education for rural students in Nigeria.*

Key words: *Rural areas; education, nutrition; food; educational; higher institutions.*

Introduction

Education refers to many things. It refers to expression of human debris. Education through it delivery of facts, data, and behavior change purifies human being, develop character, and inculcate culture and civilization (Mangyada & Mukherjee et al., 2018). Education is a tool that inspire rural development, as well as regional and national development generally. Education elicits people to be conscious, increase functional abilities of rural people, provide manpower for yielding various services to rural dwellers, provide employment and economic benefits, and link rural and urban communities (Mangyada & Mukherjee, 2018). Rural people are mostly deprived of basic needs of living (Agumba et al., 2023). Certainly, large portion of the inhabitants of the earth live in the

rural areas, Sokoto State is not an exception (Mangyada & Mukherjee, 2018). One key aspect of great concern in rural areas is the education, especially the progress of higher education, the increase in number of rural inhabitants obtaining higher education qualifications (Alemu, 2014; Chan, 2016). Higher education encourages people to synthesize knowledge and elicit students to solve complex problems (Chan, 2016). Higher education is purposeful, intended to produce people with ability to write and read, equip citizens with ability to share common life, and help "self" and the society. Higher education institutes are avenues producing people for the sake of morality, and society (Agumba et al., 2023). People who are educated by the higher institutions have more social benefits, and economic competencies to serve all. Higher institutions produce people that are graduated to fill social demands (Chan, 2016). Higher institutions produce graduates that are well-informed in leadership skills, social skills, and personal benefits as well, for the nation building, socialization, and boosting an entire economic system of the state (Chan, 2016; Leikuma-Rimicane et al., 2022). Nigeria has its own specific educational policies aimed at ensuring educational development and delivery of quality education. The curriculum starts from preprimary to primary, to secondary, and to higher institutions (Enemeba et al., 2022). Tertiary education or institutions, such as universities, colleges, polytechnics, are struggling to deliver a curriculum spurring to provide students (or citizens) with the zeal for national development, and to inspire them become good ambassadors in the society (Enemeba et al., 2022; Leikuma-Rimicane et al., 2022). However, the system in Nigeria is challenged by factors such as poor quality, lack of funding, poor infrastructures, etc, thereby leading to failure in policies (Enemeba et al., 2022).

Due to several factors children or youngsters are unable to further to the tertiary education levels, therefore, the course of educational policy in the country has been on many occasions halt permanently (Egwaoje, 2024). This is very extreme in rural areas (Scott et al 2015; Wood, 20023), like in many places in Sokoto, Nigeria. There are factors leading to the ugly trend of terminating education at secondary school level. Knowing these factors through analyzing the context (rural) people will invariably serve in a very important way (Singh, 2017). The cultural effects such as the language tradition may serve as barriers to education (Egwaoje, 2024). Factors like, government funding, socioeconomic (financial) status of parents, poor school infrastructures, poor teachers, and others that are more extreme in rural areas make the rural people more disadvantaged in terms of going to higher institutions, generally backward in achieving goals of education; and ultimately with more inequalities (Egwaoje, 2024; Makai et al., 2024). Food systems or food security is certainly among the major determinants in rural areas. Local

foods or otherwise affect health, nutrition, income, and other parameters. Youngsters who facing food security are of much benefits to learn, stay at school, and achieve educational objectives (Martinez et al., 2010; Umar et al., 2023ab). Due to food insecurity, many youngsters abstain schools or completely drop out of school, and travel to urban areas in search of greener pastures (Hughes, 2018; Ibrahim et al., 2023). In this vein, a systematic review conducted by Tamiru & Belachew (2017) indicated that, generally food insecurity at household level is linked to school absenteeism. This was also confirmed through a study done by Masa & Chowa (2020) in Ghana, where food insecurity was demonstrated to be negatively associated with escalation. Hunger is correlated to educational deprivation, and poverty indeed as cured by De Muro & Burchi (2007).

Objectives of the study

The followings are objectives of this study:

1. To Evaluate perceived of effects of food systems on participants going to school
2. To determine the perceived effects of socioeconomic factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas
3. To determine the perceived effects of educational factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas
4. To determine the perceived effects of cultural factors on proceeding to higher institutions in some Northeastern local governments in Sokoto rural areas

Materials and methods

Research Design

The study employed a quantitative research design, using a survey questionnaire to collect data from respondents.

Study Area

The study was conducted in Gwadabawa, and Illela rural areas, Nigeria.

Population

The population consisted of rural students in Gwadabawa, and Illela Local Governments, Sokoto, Nigeria.

Sample Size

A total of 200 respondents participated in the study.

Sampling Technique

The sampling technique used was a convenience or voluntary sampling method.

Data Collection Instrument

A structured questionnaire was used to collect data from respondents.

The questionnaire consisted of four sections: demographic information, socio-economic factors, educational factors, and cultural factors.

Data Analysis

The data collected was analyzed using descriptive statistics, including frequencies and percentages.

Results and discussion

Results

The results determined in this study are in Tables 1-5.

Demographic Characteristics of respondents in Northeastern local governments in Sokoto rural areas

Characteristics	Frequency	Percentage
Age		
15-19 years	70	35.0
20-24 years	100	50.0
25 and above	30	15.0
Educational level		
Secondary student	30	15.0
Secondary graduate	90	45.0
Tertiary student	59	29.5
Tertiary graduate	21	10.5

Table 1: Demographic Characteristics of respondents in Northeastern local governments in Sokoto rural areas

The finding of this work is in tandem with Sociological Model (SEM). The behavior of the rural people in Sokoto Northeast local governments could be explained through the lens of SEM. Parable, the factors affecting rural people against going to higher institutions are based on person -focus and environment -focus perspectives. Therefore, the environment of the rural people certainly influences their ability to go to higher institutions or not. Factors in the environment such as educational (presence of dilapidated structures or insufficient embodiments), cultural (the Hausa culture), social, economic (poverty) are forefront influences. These influences are broken as intercultural, community, organizational, and interpersonal. Interpersonal factors such as age, characteristics, family (parents) (denoted in Table 1) may be natural (ingrained) and couldn't be easily modified, but their influence could be improved, if the parents re more educated, they may be wealthy and their wards would be likely to supported to complete education. The organizational influence (meso -system) that is the nature of schools ideally affect kids in rural areas against going forward to higher institutions. And the exosystems, the community-level ideals, kike culture (Hausa), and religion impacts on ability to go to school or higher institutions. In order to benefit from large number of people, educational

environment should be made advantageous, including by providing food available at school actors reach, improving agriculture to earn and eat, and improve cultures (Redding et al., 2000; Simpson, 2015; Arghode et al., 2017; Sabokro and Keshawarzian, 2024).

Food security at school		
Do you go to school with food?	60	30.0
Yes	140	70.0
No		
Type of food		
Millet	30	15.0
Rice	40	20.0
Maize	30	15.0
Corn	80	40.0
Empty calories	20	10.0
Presence of food seller at school or nearby premises	20	10.0
Yes	180	90.0
No		
Majority of food sold at school or nearby	164	82.0
Local foods	36	18.0
Empty calories		
Do you think food insecurity may affect going to school or furthering education?	146	73.0
Yes	54	27.0
No		

Table 2: Evaluation of effects of food systems on respondents participants going to school

From Table 2, evaluation of respondent's participants, shows that 70.0% go to school without food, and 30.0% go to school with food. Type of foods consumed by respondents are: corn (40.0%), maize (15.0%), millet (15.0%), rice (20.0%), and empty calories (10.0%). Presence of food seller at school or neighborhood was 90.0% absent, and 10.0% present. Most of the sellers sell local foods (82.0%), and few sold empty calories (18.0%). Majority (73.0%) agreed food insecurity affects going to school and furthering to higher schools, and 27.0% disagree. Mostly

school is the initial contact of children with the outside environment. Students spend much time at schools learning, developing, and growing. However, the youngsters must be healthy in order to participate in schooling, and health is dependent on type of food and eating habit experience by man (Yusuf et al., 2018; Jiya et al., 2020). Young ones at school must eat well either through school feeding or bringing food from home or buying at school shops or neighborhood (Ibrahim et al., 2023). Failure to have good that is effective will surely devastate learning or education (Ibrahim et al., 2023). In this study, the results indicate that most of the students faced food challenges at school or are food insecure, because they go to school without food. This situation may affect their concentration and cognitive ability, and may instigate some of them to absent or drop out of school. This may affect going forward to higher institutions and ultimately affect the rural areas in terms of inequalities (Maitafsir & Kwari, 2022). The situation may be aggravated by the lack of food sellers at most of the schools attended by rural people as submitted by the respondents in this study. Albeit, the few found food sellers at most of the schools sell local foods. Selling of local foods is a good gesture because it gives the students and teachers chance to buy healthy foods, instead of the empty calories (beverages, income, macaroni etc.) that devastate the health overtime or excessive consumption (Yusuf et al., 2018). So, one of the major interventions to be applied by the government is improving agriculture at rural areas in the state (Bryant et al., 2023). Improvement in agriculture help to boost economic status of households and in turn may translate to good welfare of schooling children, improved health of children and adults as well, fight hunger and malnutrition (Sanningrahi & Banerjee, 2016; Yusuf et al., 2018).

Perceived effects of Socioeconomic factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas

Socioeconomic factors	Frequency	Percentage
Fathers income		
20-50k	50	25.0
51-100k	44	22.0
111-150k	32	16.0
200k and above	73	36.5
Fathers education		
None	60	30.0
Primary	73	36.5
Secondary	45	22.5
Tertiary	22	11.0
Fathers kids		

1-2	50	25.0
3-4	120	60.0
5 and above	30	15.0

Table 3: Perceived effects of Socioeconomic factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas

Really, socioeconomic factors affect the education at all levels. In this study, the socioeconomic factors affecting education regarding proceeding to higher institutions among rural students was shown in Table 3. Father's income was 20-50k (25.0%), 51-100k (22.0%), 111-150k (16.0%), and 200k and above (36.5%). Father's education was primary (36.5%), none (30.0%), secondary (22.5%), and tertiary (11.0%). Father's kids were, 3-4 (60.0%), 1-2 kids (25.0%), 5 and above children (15.0%). This finding was corroborated in Scott et al. (2015) In America, that revealed, attending higher institutions by parents, finance, are among the factors affecting the furthering to higher education in rural areas. Likewise, Iniquez-Berroz et al. (2020) submitted that, age, level of education, family factors, are barriers to education. In similar vein, Andrew & Etumabo (2016) in Nigeria reiterated the implications of economic factors (harsh economic situation) on going to school, causing many to abstain school.

Perceived effects of Educational factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas

Educational factors	Frequency	Percentage
Type of secondary school		
Private	15	7.5
Public	130	65.0
Mixed	55	27.5
Grade at school		
None	0	0.0
A	15	7.5
B	82	41.0
C	100	50.0
D	3	1.5
Access to educational tools		
Yes	15	7.5
No	185	92.5

Participation in JAMB	15	7.5
Yes	185	92.5
No		

Table 4: Perceived effects of educational factors on proceeding to higher institutions in Northeastern local governments in Sokoto rural areas

In Table 4 educational factors were affecting going to higher institutions among rural students were stated. Educational schools attending was, public (65.0%), mixed (27.5%), and private (7.5%). Grades of respondents are; C (50.0%), B (41.0%), A (7.5%), and D (1.5%). Effect of access to educational tools on proceeding to higher institutions in rural area, as submitted by the respondents are, only 7.5% positive, and 92.5% are negative. 7.5% participated in JAMB (tertiary institutions entry exam), and 92.5% don't write JAMB. Wood (2023) suggested important solutions, by providing more teachers, more funding, improved quality, infrastructures as important amendments to rural education problems. In Hughes (2018) from Tajikistan, it was concluded that low quality in rural schools is a major factor affecting rural education, indicating the general role of educational factors in militating rural education and furthering of learning. Enemeba et al. (2022) decried that, poor facilities or shortages are major barriers to education in Nigeria.

Effects of Cultural factors on proceeding to higher institutions in some Northeastern local governments in Sokoto rural area

Cultural factors	Frequency	Percentage
What is your culture?		
Hausa	150	75.0
Fulani	32	16.0
Others	18	9.0
Is education important	105	52.5
Very important	73	36.5
Somewhat	22	11.0
Not at all		
Culture hinders education		
Yes	110	55.0
No	90	45.0

Table 5: Effects of Cultural factors on proceeding to higher institutions

in some Northeastern local governments in Sokoto rural area

Effect of cultural factors were revealed in Table 5. The cultures of respondents are: 75.0% Hausa, 16.0% Fulani, and 9.0% others. 52.5% agree that education is very important, 36.5% attest that, education is somehow important, and 11.0% of them say "not at all." 75.0% believe culture affects education in rural areas, and 45.0% have dissimilar view. Andrew & Etumabo (2016) certain culture ideals place many children in Nigeria into non-schooling, especially the girl child. Table 2 shows the demographic characteristics of the respondents enrolled in this study. Out of 200 respondents, 50.0% are 20-24 years old, 35.0% are 15-19 years old, and 15.0% are 25 and above years old. Out of 200 participants, 45.0 are secondary school graduates, 29.5% are tertiary graduates, 29.5% are tertiary students, 10.5% are tertiary graduates. In Kryzykawska & Zur (2020), a scoping review of factors affecting education in some African States (sub Saharan areas), cost, and household income affects schooling.

Conclusion and recommendations

Conclusion

This study has examined the socio-economic, educational, and cultural factors affecting rural students' progression to higher institutions in Nigeria. The findings reveal significant barriers, including low family income, limited access to educational resources, poor academic performance, and cultural influences. These barriers hinder rural students' ability to pursue higher education, perpetuating the cycle of poverty and inequality.

Recommendations

1. Improve access to educational resources: Provide more teachers, funding, and improved infrastructure to rural schools to enhance the quality of education.
2. Address cultural ideals: Engage with local communities to address cultural ideals that may discourage education, particularly for girls.
3. Increase financial support: Implement scholarships, grants, and other forms of financial assistance to support rural students in pursuing higher education.
4. Enhance career guidance: Provide career guidance and counseling services to rural students to help them make informed decisions about their educational and career paths.
5. Promote community involvement: Encourage community involvement in education through initiatives such as parent-teacher associations and community-led education programs.
6. Develop targeted policies: Develop targeted policies and programs to address the specific needs of rural students, including those related to

poverty, inequality, and cultural barriers.

References

- Agumba, H., Simpson, Z. & Ndofigurepi, A. (2023). Towards understanding the influence of rurality on students access and participation in higher education. *Critical Studies in Teaching and Learning*, 11(1), 23-42.
- Alemu, B.M. (2014). Enhancing the quality and relevance of higher education through effective teaching practices and instructions characteristics. *Universal Journal of Educational Research*, 2(9), 632-647.
- Arghode V., Brieger EW. & McLean, GN. (2017). Adult learning theories: Implications for online instruction. *European Journal of Training and Development*, 41(1), 593-609.
- Arghode, V., Brieger E.W., McLean, GN. (2017). Adult learning theories: Implications for online instruction. *European Journal of Training and Development*, 41(1), 593-609.
- Bryant, M., Burton, W., O’Kane, N. et al. (2023). Understanding school food systems to support the development and implementation of food based policies and interventions. *Int J Behav Nutr Phys Act* 20, 29 <https://doi.org/10.1186/s12966-023-01432-2>
- Chan, R.Y. (2016). Understanding the purpose of higher education: An Analysis of the economic and social benefits for completing a college degree. *JEPA, Journal of Education Policy, Planning and Administration*, 6(5), 1-40.
- De Muro, & Burchi, F. (2007). Education for rural people and food security - a cross county analysis. University of Roma Tre Department of Economics.
- Egwaoje, O. (2024). Impact of mother tongue and culture of rural Nigeria on student achievement in English. *Intentional Journal of Recent Research in Thesis and Dissertation*, 5(1),91-100.
- Enemeba, M., Effiom, B.E., Arop, L.O., Odey, G.A. & Inaju, A. (2022). Nigeria educational system: Mainstreaming care and integration of subnormal children analyzing the counselling perspective. *Intentional Journal of Education and Evaluation*, 8(3),39-47
- Ibrahim, M., Ikwuakam, O.T & Haruna, S.Y. (2023) Primary School Feeding Programme (SFP) and Pupils’ Enrolment, Retention and Performance in Katsina State, Nigeria, *British Journal of Multidisciplinary and Advanced Studies: Education, Learning, Training & Development* 4 (2),171-186
- Iniquez-Berroz T., Elboj-Saso C., Flecha A. & Marcaletti F. (2020). Benefits of adult education participation for low educated women. *Adult Education Quarterly*, 70(1), 64-88.

- Jiya, F.B. Jiya N.M. Ibitoye, P.K. Umar A.K. Baba J. Adamu, A. Isezuo, K.O. (2020). School health services in Sokoto Town Nigeria. *IOSR Journal of Dental and Medical Services*, 19(4), 44-50.
- Krzykawska, A., & Żur, A. (2020). Key Factors Hindering the Development of Education in SubSaharan Africa Scoping Review. *Przedsiębiorczość Edukacja [Entrepreneurship Education]*, 16(2), 334344. doi: 0.24917/20833296.162.26
- Leikuma-Rimicane, R.F., Baloran, E.T., Ceballos, R.F. & Medna, M.N.D. (2022). The role of higher education in shaping global talent competitiveness and talent growth. *International Journal of Information and Education Technology*, 12(11), 1211-1219.
- Maitafsir, M. G., & Kwari, J. A. (2022). Assessment of the 2014 Pilot Sokoto State Schools Feeding Programme vis-à-vis Pupils' Interest to Enrol in School and their Aspiration to Complete Basic Education. *Interdisciplinary Journal of Education*, 5(1), 1-9. <https://doi.org/10.53449/ije.v5i1.87>
- Makai, C., Familoye, I.T. & Diekuu J. (2024)? Breaking barriers: The impacts of girls education on poverty education in northern Nigeria - A focus on Sokoto State. *World Journal of Advanced Research and Reviews*, 24 (1), 1793-1797.
- Mangyada S. & Mukherjee, R. (2018). Role of education in rural development. *IJARIT*, 106, 3466-3499
- Martinez, S. Hand, M. Dapra M., Pollack S. et al. (2010). Local food systems. Concepts, and issues. *USDA Report No. 97*.
- Masa, R. & Chowa, G. (2017). Household food insecurity and educational outcomes in school -going adolescents in Ghana. *Public Health Nutrition*, 24(6), 1349-1361.
- Miya, Y. Y., & Arziki, A. (2024). Influence of Sultan Abdurrahman School of Health Technology Gwadabawa (SASHTG) on Girl-Child Education and Women Empowerment (Employment) in Gwadabawa, Sokoto State, Nigeria. *EDUMALSYS Journal of Research in Education Management*, 2(3), 153-169. <https://doi.org/10.58578/edumalsys.v2i3.4063>
- Redding CA., Rossi, JS., Rossi SR., Velicer WF. Prochaska JO. (2000). Health behavior models. *The international Electronic Journal of Health Education*, 3(special issue): 180-193.
- Redding CA., Rossi, JS., Rossi SR., Velicer, W.F. & Prochaska, J.O. (2000). Health behavior models. *The international Electronic Journal of Health Education*, 3(special issue), 180-193.
- Sabokro M. and Keshawarzian (2024). Bullying behavior and stress levels: Does it affect students academic performance?. *Global Business and Economics Journal*, 5(1), 1-14.

- Sabokro M. and Keshawarzian (2024). Bullying behavior and stress levels: Does it affect students academic performance?. *Global Business and Economics Journal*, 5(1), 1-14.
- Scott, S., Miller, M.T. & Morris, A.A. (2015). Rural community college student perception of barriers to college enrollment. *Academic Leadership Journal in Student Research*, 3,1-11
- Simpson V. (2015). Models and theories to support health behavior intervention and program planning. Purdue Extension. HHS.792.www.extension.purdue.edu.
- Simpson V. (2015). Models and theories to support health behavior intervention and program planning. Purdue Extension. HHS.792.www.extension.purdue.edu.
- Singh, M. (2017). Rural education. *Globus An Intentional Journal of Management and IT*, 8(2), 57-60.
- Tamiru, D. & Belachew, T. (2020). The association of food insecurity and school absenteeism: systematic review. *Agriculture and Food Security*, 6(5), 1-4.
- Umar, A. I., & Sarkingobir, Y. (2024). Determination of Serum Copper Levels Effect on Learning Ability Among Apparently Healthy Schooling Adolescents Recruited from Sokoto, Nigeria. *Asian Journal of Science, Technology, Engineering, and Art*, 2(4), 641-648. <https://doi.org/10.58578/ajstea.v2i4.3661>
- Umar, A. I., Shehu, S. U., Sarkingobir, Y., Miya, Y. Y., Adili, S. I., Shehu, A., & Adamu, A. A. (2023a). Some Elements in The Fruit: An Assessment of Gingerbread Plum from Sokoto, Nigeria. *Journal of Bioresources and Environmental Sciences*, 2(2), 50-56. <https://doi.org/10.14710/jbes.2023.17484>
- Umar, I.A., Sarkingobir, Y., Dikko, M., Zayyanu, A., Miya, Y.Y. & Ahmad, M. (2023b). Assessment of certain micronutrients (Zn, Fe, Ni, and Se) in some herbal snuff stocks consumed in Sokoto, Nigeria. *JTRSS*, 11(2),17-22. Available from: <http://journal.umk.edu.my/index.php/jtrss/article/view/1236>
- Wood, R.M. (2023). A review on education difference in urban and rural areas. *International Research Journal of Educational Research*, 14(2), 1-3
- Yusuf, B.I., Mustapha, M.B. & Ala, A.L. (2018). Analysis of household food security among rice farming communities in Sokoto: A guide for food security policy in Nigeria. *Annals of Food Science and Technology*, 19(2),377-384.

THE EFFECTS OF LIMITED ACCESS TO SPORT ON CHILDREN'S SOCIAL DEVELOPMENT AND EDUCATIONAL SOLUTIONS FOR INCLUSION

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Abstract: *Limited access to sport can significantly influence children's social development, affecting their relationship skills, social integration and emotional health. This article examines the impact of economic, cultural and infrastructural barriers on children's participation in sports activities. Through an analysis of the literature and data collected from recent studies, the negative effects of sports exclusion and educational solutions that can facilitate inclusion are identified. The results highlight the need to implement adapted educational programs that integrate sport as a tool for social development. In conclusion, the article provides practical recommendations for public policies and educational frameworks, emphasizing the importance of equal opportunities in access to sport.*

Key words: *access to sport; social development; educational inclusion; equal opportunities; education through sport.*

Theoretical foundation

Children's participation in sport plays a crucial role in social development, being recognized for its benefits on interpersonal relationships, emotional health and social inclusion. Recent studies show that sports activities not only develop physical skills, but also contribute to the formation of skills such as collaboration, conflict management, and leadership (Eime et al., 2023). These skills are essential for the harmonious integration of children into diverse communities and for preparing them for adult life.

A modern theoretical framework that supports these conclusions is that of Positive Youth Development (PYD), developed and applied by Holt et al. (2021). This theory highlights the fact that sport can provide opportunities for personal growth, character formation and the adoption of important ethical values, such as respect and fair play. In addition, research has shown that well-organized sports programs that emphasize inclusion and active participation can prevent social exclusion and

marginalization of children from disadvantaged backgrounds (Fraser-Thomas & Côté, 2020).

In Romania, recent studies show that the lack of adequate sports infrastructure is a major barrier to social development through sport. According to research conducted by Popescu and Ionescu (2024), only 25% of children from disadvantaged backgrounds participate in organized sports activities, and the participation rate decreases dramatically in rural communities. This is an acute problem, given that physical education and sport contribute to reducing social disparities and creating a sense of belonging (Association for Inclusive Education, 2023).

At the international level, the COVID-19 pandemic has amplified inequalities in access to sport. The European Commission's report (2022) highlighted that school closures and the suspension of sports activities have had a negative impact on children's development, especially in terms of social skills. In this context, public policy recommendations have focused on funding free sports programs and creating equal opportunities for all children.

Another important aspect is the use of sport as a tool for social inclusion for children with special needs or for those who are marginalized. Studies by Eime et al. (2023) show that participation in sport contributes significantly to reducing stigma and integrating children with disabilities. Local initiatives, such as those of the CaiacSMile Association in Romania, demonstrate that adapted sports can remove psychological and social barriers, supporting community integration (Eurosport Romania, 2021).

Moreover, UNESCO (2023) published a detailed report on the benefits of sport in inclusive education, highlighting that integrating sports activities into school curricula can increase students' motivation and support the development of an equitable society. This report recommends the creation of partnerships between schools, local communities and sports organizations to facilitate equal access to physical activities.

In conclusion, recent literature clearly supports the fact that sport is an essential tool for children's social development. Modern theoretical models and applied research underline the need for systematic interventions to remove barriers to access to sport and promote social inclusion. Through appropriate educational policies and funding of sports programs, children can benefit from a safe and constructive environment for development.

Research

This research explores the impact of limited access to sport on children's social development, using a mixed methodological approach that

combines quantitative and qualitative analysis. The study, carried out between 2023 and 2024, focused on identifying the main barriers that prevent children from participating in sports activities and investigating how these barriers affect social skills, with the aim of proposing effective and adaptable educational solutions.

In order to understand this phenomenon, the research aimed to identify the economic, social and infrastructure factors that limit children's access to sport, to explore the relationship between the lack of these activities and children's social development, as well as to assess how existing educational solutions can be optimized to support inclusion through sport.

In order to obtain a detailed picture of the subject, the research was conducted on a representative sample of 1,200 participants, selected from urban and rural backgrounds. The group of participants included primary and secondary school students, parents and teachers, thus ensuring a diversity of perspectives. The selection process used the random sampling method to guarantee the representativeness of the data collected. In addition to this quantitative component, the research also integrated a qualitative dimension by conducting 60 semi-structured interviews, designed to deepen the subjective aspects of the phenomenon studied.

The tools used for data collection were carefully chosen and validated in advance. The quantitative questionnaires were structured in four sections: respondent profile, access to sports infrastructure, frequency of participation in sport and perception of the role of sport in social development. For the qualitative component, the interview guides have been designed to allow participants to express their opinions and experiences in detail. These tools have been applied electronically in urban areas, and in rural areas, researchers have organized assisted sessions to overcome technological barriers.

The collected data were analyzed through a rigorous process, using statistical methods for the quantitative component and thematic analysis techniques for the qualitative one. The statistical processing was carried out using the SPSS software, and the qualitative analysis was based on the identification of emerging themes from the interviews, thus providing an in-depth understanding of the participants' perspectives.

This methodological approach was chosen to ensure a comprehensive exploration of the topic, taking into account the diversity of conditions and experiences. However, the research has some inherent limitations, such as the exclusive focus on the Romanian context, which may influence the applicability of the conclusions in other geographical or cultural contexts. In addition, the qualitative component can be influenced by the subjectivity of the participants, which requires a cautious interpretation of the data obtained.

This research provides a well-founded framework to analyse the relationship between access to sport and children's social development. The applied methodology provides a solid basis for identifying needs and outlining viable educational solutions, adapted to both local conditions and universal educational principles.

Results

The research highlighted multiple barriers that limit children's access to sports activities and highlighted their significant impact on social development. The quantitative analysis showed that only 32% of children regularly participate in organized sports activities, while the rest, although they express a desire to get involved, face significant obstacles. Among the major barriers identified, economic barriers were the most common, reported by 64% of parents. These include costs associated with sports equipment, participation fees, and transportation to sports facilities.

The qualitative component of the research offered a more nuanced perspective on the difficulties encountered. Parents in rural communities pointed out that the lack of adequate sports infrastructure and programs available nearby is a major obstacle. Also, physical education teachers reported the lack of material resources in schools, as well as a low interest on the part of local authorities in financing and developing sports activities.

Another notable result is the strong link between participation in sports and children's social development. Over 78% of teachers have noticed a significant improvement in children's ability to collaborate, communicate and manage their emotions within sports teams. In contrast, lack of involvement in sport was associated with a feeling of social isolation, reported by 45% of the students interviewed, especially in disadvantaged backgrounds.

Interviews with sports coaches highlighted an acute need to adapt sports programmes to encourage the inclusion of children with disabilities or from low-income families. One coach said: "Sport should be accessible to everyone, but the reality is that without financial support and adequate infrastructure, many children remain excluded."

In terms of solutions, 62% of parents and teachers supported the need for free sports programs, financed by local authorities or non-governmental organizations. Also, the idea of partnerships between schools and sports clubs was well received, being considered a viable way to ensure equal access to sport.

The thematic analysis of qualitative responses highlighted three main themes: the lack of sports infrastructure, the prohibitive costs of sports activities and the positive impact of sport on children's social skills. Each of these themes reflects the need for public policies that address these

issues and promote sport as a means of development and social inclusion.

Conclusions

The research highlighted the many challenges children face in accessing sports activities and the significant impact these limitations have on their social development. The main barriers identified include economic constraints, lack of adequate infrastructure and insufficient sports programmes in schools, especially in rural areas. These barriers reduce children's opportunities to participate in activities that not only improve physical health, but also contribute to the formation of essential social skills, such as effective communication, collaboration and the development of self-confidence.

The lack of access to sports was associated, according to the data collected, with an increased tendency of social isolation among children. Especially in disadvantaged communities, the absence of sports activities has been flagged as a factor limiting integration into groups and children's ability to interact positively with their peers. This is aggravated by the passive attitude or the reduced involvement of some local authorities, which do not prioritize the development of sports infrastructure or the financing of accessible programs.

Despite these difficulties, the research results highlight the enormous potential of sport to function as a catalyst for social inclusion and the harmonious development of children. Participation in sport provides not only a platform for recreational activities, but also an educational context that supports the development of ethical values, empathy and conflict management skills. Organized sports activities can also help reduce social disparities by creating equal opportunities for children from different backgrounds.

To address these issues, it is essential to implement coherent and well-planned interventions. A starting point would be to expand free or subsidized sports programmes so that children from low-income families can participate without facing economic barriers. In addition, there is a need to develop sports infrastructure, especially in rural areas, by building fields, gyms and other facilities to support physical activities in local communities.

Another crucial aspect is the revision of educational policies to integrate sport as a central element of the curriculum. It is not enough for physical education to be a marginalized discipline; It must become a pillar of children's social and personal development, by organizing attractive, interactive activities adapted to the diverse needs of students. Teachers and coaches have a key role to play in this transformation, and their training should include strategies to promote inclusion and support children from vulnerable backgrounds.

The importance of community involvement in the promotion of sport must also be recognized. Parents, non-governmental organisations and the private sector can work together to create sustainable initiatives that support equal access to sport. Partnerships between schools, sports clubs and local authorities are another viable solution, through which resources can be effectively directed to programmes that benefit from a wide base of participants.

Finally, this research provides a detailed perspective on the challenges associated with limited access to sport, but also on the opportunities for change. The conclusions drawn suggest that sport is not only a recreational activity, but a powerful educational and social tool, capable of improving social cohesion and supporting the harmonious development of children. However, future research should explore in more detail the specific impact of different types of sport on social development, as well as examine how different cultural and economic contexts influence access to sport and its benefits.

References:

- Eime, R., Harvey, J., & Charity, M. J. (2023). Sport participation: Building cultural and social capital in children. *International Review of Sport and Exercise Psychology*, 16(3), 225-242
- Fraser-Thomas, J. L., & Côté, J. (2020). Youth development through sport: Perspectives and practices. *Human Kinetics*
- Holt, N. L., Tamminen, K. A., & Black, D. E. (2021). *Positive youth development through sport: Applications and critical reflections*. Routledge
- Lipscomb, S., & Smith, J. (2022). Breaking barriers: Economic challenges in youth sport participation. *Journal of Sport and Society*, 47(4), 101-118
- Popescu, A., & Ionescu, M. (2024). Access to sports in disadvantaged communities in Romania. *Romanian Journal of Educational Research*, 19(1), 45-67
- Asociația pentru Educație Incluzivă. (2023). *Educația fizică și sportul pentru incluziune socială*. București: Editura ASE
- UNESCO. (2023). *Inclusive education through sport: A global perspective*. UNESCO Publishing
- Comisia Europeană. (2022). *Raport privind sportul și incluziunea socială în Uniunea Europeană*. Bruxelles: Comisia Europeană.
- Eurosport România. (2021). *Cum contribuie sportul la rezolvarea problemelor sociale?* https://www.eurosport.ro/alte-sporturi/cum-contribuie-sportul-la-rezolvarea-problemelor-sociale_sto8319715/story.shtml.

FEEDBACK IN FORMATIVE ASSESSMENT

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Abstract: *In modern didactics, assessment is perceived as a complex, continuous activity, designed to take place in distinct but interconnected stages throughout the educational process. Formative assessment involves the constant monitoring of outcomes throughout the instructional process, thus ensuring progressive and well-structured learning in small sequences. An important aspect of this process is the feedback that provides useful information to students on their performance. In the research that I carried out in the undergraduate program Pedagogy of Primary and Pre-school Education, a number of key elements were investigated that refer to the aspects of feedback in formative assessment. The mode of investigation used in the research was the survey, carried out using the questionnaire as an instrument. A number of novel elements of the presence of feedback in formative assessment emerged from the research.*

Key words: *feedback; assessment; formative assessment; students.*

Introduction

The notion of assessment is „the complex action of collecting a set of pertinent, valid and reliable information in relation to the relevance and value of some processes, performances, competences, skills, educational or didactic behaviours and the examination of the adequacy between this set of information and a set of criteria in correspondence with the objectives pursued and fixed beforehand. Assessment involves accomplishing the evaluative processes, is carried out in accordance with specific evaluative strategies and through appropriate methods, techniques and tools” (Bocoş, Răduţ-Taciu, Stan, 2016, p.127).

Roman A. presents assessment as „a singular term that can express one thing and its opposite: precision and approximation, precision and approximation, quantitative aspect and qualitative aspect which reveals the complexity of the evaluative process involving both measurement (based on quantitative data of measurements) and qualitative judgements (it involves defining beforehand of some criteria and reporting the

measurements made by them) in order to take some decisions” (Roman, 2014, p.16).

Modern didactic assessment is essentially a formative assessment, that supports and encourages the learning process through immediate and interactive adjustments made by the teacher. It focuses on highlighting the positive aspects of the entire learning process, not just the final results and supports continuous learning. A formative assessment can only be carried out in a formative teaching framework that stimulates and directs an active learning, capable of generating new strategies, approaches, techniques and motivations (Bocoş, 2017).

Formative assessment involves the constant monitoring of outcomes throughout the learning process, usually through small-sequence assessments. The transition to the next stage occurs only after the manner of conduct, the educational efficiency of the respective sequence and the results obtained are evaluated. These are followed by the implementation of measures to improve the teaching-learning process and performance (Bocoş, Jucan, 2019).

It is a type of internal assessment, carried out by those who teach and coordinate the educational process. Focused on the process, it is dynamic and flexible, and through quick and continuous feedback, it ensures constant adjustment of the educational activity. This adjustment largely depends on the educational strategies chosen by the educators (Bocoş, 2017).

Over the years, formative assessment has become a central topic in many educational researches due to its role in providing feedback. This feedback allows students to identify both their strengths and areas which need improvement, thus contributing to the deepening and consolidating of the learning process.

One of the important aspects for students derives from their participation and involvement in the assessment of their own learning acquisition and analysis of the feedback received from the teacher.

According to Black P. and Wiliam D., feedback is "any information provided to the subject of an action about his/her performance" (Black, Wiliam, 1998, p.53).

We can state that feedback has a supportive and motivating role in the learning process for students, helping them to be more self-confident..

Feedback is a means by which students are given the tools that will allow them to understand the aspects of learning.

We thus believe that feedback is not information that comes to us spontaneously but it is an integral part of the context of learning. It is used by the teacher to make decisions regarding the student's level of preparedness and also in diagnosing and possibly remediating the results.

Juwah C. mentions seven principles by which feedback can be used

effectively:

- **"developing self-evaluation"**: encouraging practices that help students to analyze and assess their own performance in the learning process;
- **"a constructive dialogue"**: promoting active and constructive communication between students, teachers and colleagues to clarify and improve learning;
- **"the clarification of standards"**: clearly defining objectives, standards and performance criteria so that students know what is expected of them;
- **"reducing the differences"**: creating opportunities for students to diminish the gap between their current level of performance and the desired level;
- **"useful information"**: providing relevant and accurate information about the progress and difficulties encountered by students;
- **"motivation and self-esteem"**: encouraging an environment that supports students' increased motivation and self-confidence;
- **"improving the didactic process"**: using feedback to guide educators on how to optimize teaching and learning strategies (Juwah, 2004).

Feedback involves a dual relationship between the teacher and the student. This duality implies an active participation of both parties in the feedback process, each having an important role in both providing and receiving it. The teacher relies on feedback to assess the students' level of preparation, to analyze the results obtained and to take remedial action if necessary. In turn, students use the feedback to identify their strengths and areas for improvement, consolidating their achievements and correcting their shortcomings.

Problem statement

In the research we have carried out, a number of key elements have been investigated, which refer to the presence of feedback in formative assessment.

This study presents some information collected from third year students of the Pedagogy of Primary and Preschool Education program on the aspect of feedback and formative assessment.

The conclusions are based on a statistical analysis and confirm the presence of unique elements about the presence, role and importance of feedback in formative assessment.

Research questions

The questions of the research raised the following issues: feedback, formative assessment, the improvement of academic performance,

difficulties in receiving and giving feedback, the prompt correction of errors, the consolidation of learning, the enhancement of students' performance, etc.

Purpose of the study

The purpose of the research leads to the investigation of some elements related to the presence of feedback in the formative assessment encountered by the students of the third year of the study program Pedagogy of Primary and Preschool Education.

Research methods

Throughout the research, the method of investigating the issue of the presence of feedback in formative assessment was the survey method, carried out using the questionnaire as an instrument.

Findings

The sample of students consisted of sixty students of the third year of the study program Pedagogy of Primary and Preschool Education.

The first question of the questionnaire brings up the importance of feedback in student learning. As we can see, 73% of the students believe that the presence of feedback is important to a great extent in the learning process and the other 27% of the students believe that the presence of feedback is important to a little extent in the learning process, which leads to the need for the presence of feedback in the students' learning process.

1.To what extent is feedback important in your learning process?

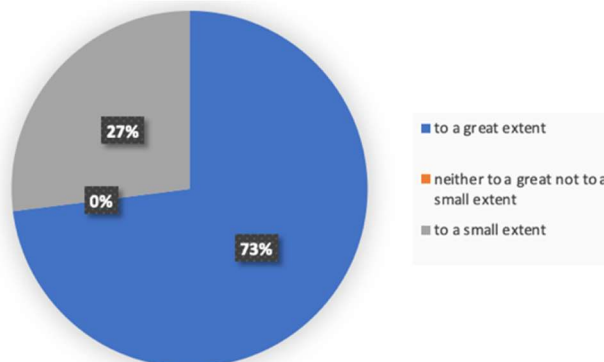


Figure 1. The importance of feedback in students' learning process

The second question refers to the improvement of academic performance using feedback. The results for this question were as follows: 57% of the students believe that feedback contributes to a great extent to improving academic performance, 14% of the students believe that feedback contributes neither to a great extent nor to a small extent

to improving academic performance, and 29% of the students believe that feedback contributes to a small extent to improving academic performance.

2.To what extent do you believe that feedback contributes to the improvement of your academic performance?

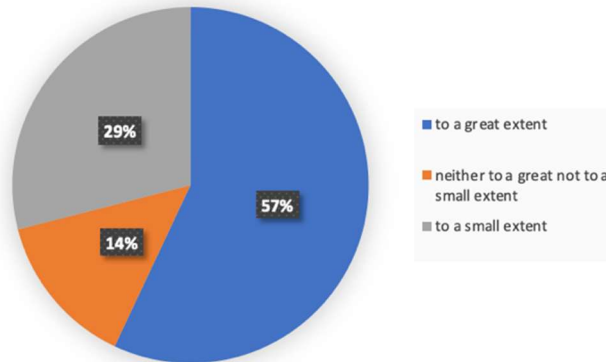


Figure 2. The improvement of academic performance using feedback.

The third question brings into discussion the presence of certain difficulties in receiving feedback from teachers. As we can see, 37% of the students claim that they have to a great extent/often difficulties in receiving feedback from teachers and 63% of the students claim that they have to a little extent/rare difficulties in receiving feedback from teachers.

3.To what extent do you find it difficult to receive feedback from teachers?

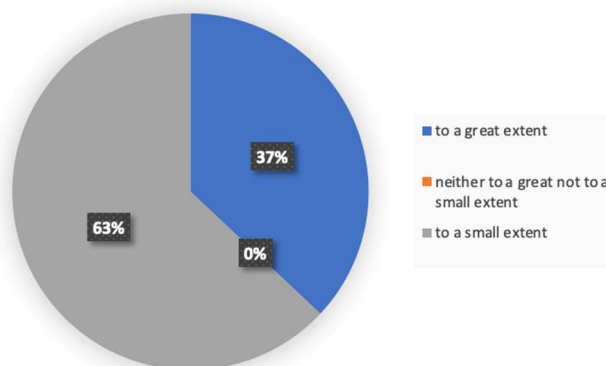


Figure 3. Difficulties in receiving feedback from teachers

The fourth question concerns the difficulties encountered in providing feedback to teachers. The results for this question were as follows: 83% of the students claim that they have difficulties in giving feedback to teachers and 17% of the students claim that they do not have any difficulties in giving feedback to teachers.

4.To what extent do you encounter difficulties in providing feedback to teachers?

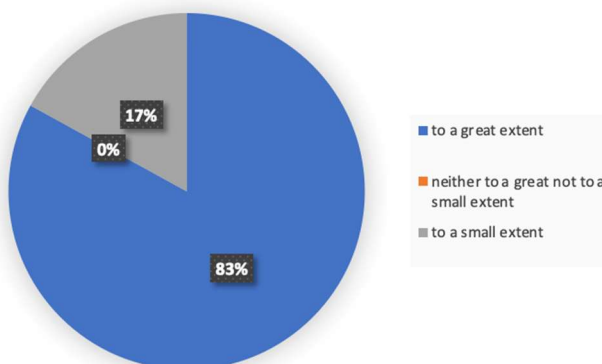


Figure 4. Difficulties in providing feedback to teachers.

The fifth question brings into discussion providing immediate feedback that allows for quick correction of errors and enhances student learning. As we can see 92% of the students believe that providing immediate feedback from the teacher leads to quick correction of errors and enhances learning, while the remaining 8% of the students believe that the help received from the teacher through feedback does not help or does not lead to quick correction of errors and enhancement of learning.

5. To what extent does providing immediate feedback from the teacher allows for errors to be corrected quickly and consolidates learning?

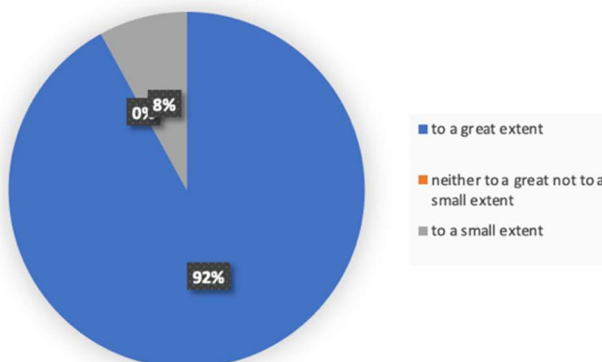


Figure 5. Providing immediate feedback allows for a quick correction of errors and consolidates learning.

The sixth question refers to the stimulation of critical thinking and development of problem-solving skills with the help of feedback. The results for this question were as follows: 61% of the students believe that feedback stimulates critical thinking and develops problem-solving skills to a great extent and 39% of the students believe that feedback stimulates critical thinking to a small extent and leads to the development of problem-solving skills.

6. To what extent does feedback stimulate critical thinking and develops problem-solving skills?

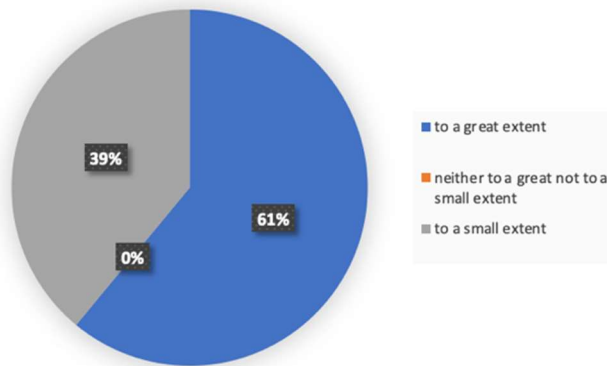


Figure 6. Stimulating critical thinking and developing problem solving skills with feedback.

The seventh question discusses the idea that feedback provided in formative assessment leads to increased student performance. As we can see, 85% of the students believe that feedback in formative assessment leads to a large extent to increased student performance, while 15% of the students believe that feedback in formative assessment leads to increased student performance to a small extent..

7. To what extent does the feedback provided in formative assessment lead to increased student performance?

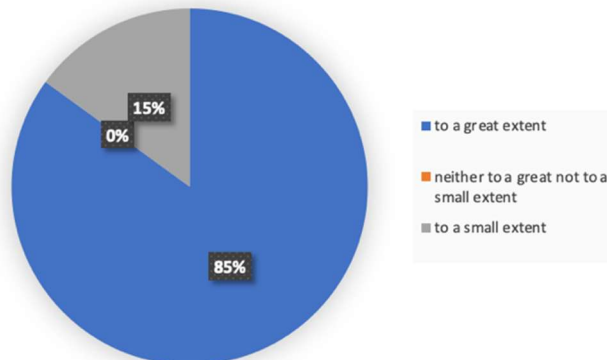


Figure 7. The feedback provided by formative assessment leads to increased students' performance.

The eighth question refers to the essential element in formative assessment that helps to improve academic performance, namely feedback. The results for this question were as follows: 77% of the students say that feedback is to a large extent the key element in formative assessment that helps to improve academic performance and 23% of the students say that feedback is to a small extent the key element in formative assessment that helps to improve academic performance.

8. To what extent is feedback an essential element of formative assessment that helps to improve academic performance?

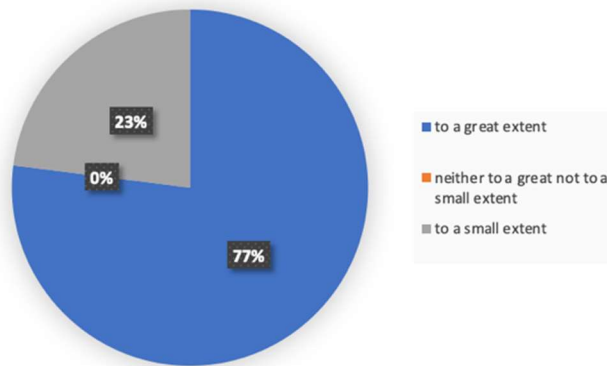


Figure 8. Feedback is an essential element of formative assessment that helps to improve academic performance.

The ninth question discusses how formative feedback helps to clarify learning expectations for students. As we can see, 96% of the students believe that formative feedback helps to a great extent in clarifying learning expectations, while 4% say that formative feedback helps to a little extent in clarifying learning expectations.

9. To what extent does formative feedback help to clarify learning expectations for students?

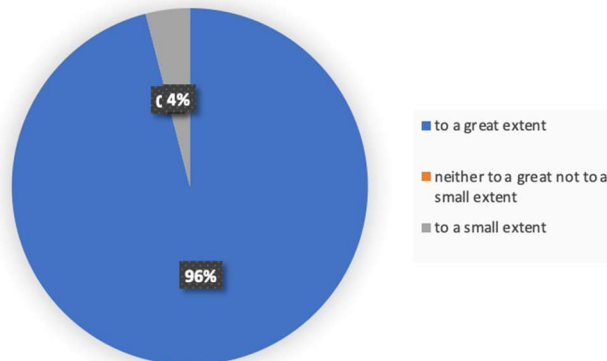


Figure 9. Formative feedback helps with clarifying learning expectations for students.

The tenth question refers to the extent to which feedback promotes the development of reflective and lifelong learning skills. The results for this question were as follows: 67% of the students claim that feedback promotes the development of reflective and lifelong learning skills to a great extent and 33% of the students claim that feedback promotes the development of reflective and lifelong learning skills to a small extent.

10. To what extent does feedback promote the development of reflective capacity and lifelong learning?

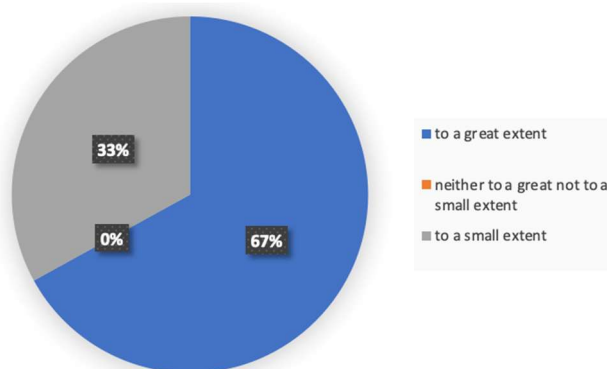


Figure 10. Feedback promotes the development of reflective capacity and lifelong learning.

Conclusions

The analysis of the questionnaire results reveals students' opinions about the importance, place and role of feedback in the formative assessment process. The relevance of feedback is emphasized, with most students underlining its essential contribution to enhancing academic performance. Students particularly value feedback centered on the learning task and on the educational process, a recommendation that should be integrated by teachers into the formative assessment practice. Results show that providing feedback by students is challenging, being influenced by a lack of well-defined assessment criteria and limited experience.

Furthermore, students claim that providing immediate feedback from the teacher allows for quick correction of errors and consolidation of learning.

Students believe that feedback is an essential element of formative assessment, helping to improve academic performance, stimulating critical thinking and leading to the development of problem-solving skills.

They value a balance between positive and negative feedback, which is essential for supporting motivation and self-confidence, as well as stimulating the efforts to continuously improve performance.

It is formative feedback that promotes the development of reflective capacity and lifelong learning.

References

- Black, P., Wiliam, D.(1998), Assessment and Classroom learning. In: Assessment in Education. Nr. 5.
- Bocoș, M. (coord).(2016), Dicționar praxiologic de pedagogie, Volumul II [Praxiological Dictionary of Pedagogy, Volume II], Paralela 45 Publishing House, Pitești.

- Bocoș, M. (2017), Didactica disciplinelor pedagogice. Un cadru constructivist, [Didactics of Pedagogical Disciplines. A Constructivist Framework, the revised edition], Paralela 45 Publishing House, Pitești.
- Bocoș, M., Jucan, D. (2019), Teoria și metodologia instruirii. Teoria și metodologia evaluării. Repere și instrumente didactice pentru formarea profesorilor [The Theory and Methodology of Teaching. The Theory and Methodology of Assessment. Benchmarks and Teaching Tools for Teacher Training], the fourth edition, Paralela 45 Publishing House, Pitești.
- Juwah, C. (2004), Enhancing Student Learning Through Effective Student Feedback. The Higher Education Academy.
- Roman, A. (2014), Evaluarea competențelor. Perspective formative, [The Assessment of Competences. Formative Perspectives], Pro Universitaria Publishing House, Bucharest.

SOCIAL JUSTICE AND MANAGEMENT OF HIGHER EDUCATION

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Abstract: *A significant issue related to social justice in higher education is the lack of equitable access to quality education for all individuals regardless of their socio-economic background. This problem is rooted in issues such as rising tuition costs, limited financial aid options, disparities in resources and opportunities among different communities, and systematic barriers that prevent marginalized groups from pursuing higher education. The purpose of this study was to investigate the relationship between social justice and the management of higher education. The research used a survey instrument and a quantitative research design. Statistical techniques including SPSS version 20.0, and SMART PLS software were used to analyze the received questionnaire and test the hypotheses. Social justice represented three distinct factors, i.e., affordable education, safe and inclusive environment, and language accessibility; management of higher education was indicated by three dimensions, governance structure, quality assurance as well and student service. The result also demonstrated the validity and reliability of each factor. The findings show a positive and strong relationship between affordable education, a safe and inclusive environment, language accessibility, and management of higher education. The study recommends that the government should make education more affordable, necessary, free, accessible, acceptable, and flexible enough to adjust to societal changes. Also, should provide a safe and inclusive environment as well as multilateral interaction to ensure language accessibility. The study's conclusions show that affordable education, a safe and inclusive environment, language accessibility, and management of higher education have a good and significant association.*

Key words: *affordable education; language accessibility; management; higher education.*

Introduction

The pursuit of social justice is a guiding principle in higher education administration that aims to create an inclusive and equitable learning

environment. To achieve social justice, one must be dedicated to dismantling institutional barriers and making sure that everyone has equal access to resources and educational opportunities, regardless of their varied backgrounds. The incorporation of social justice principles is crucial for higher education administrators to manage educational institutions effectively. This is because it addresses historical injustices, fosters diversity, and creates an environment where every student can succeed. The necessity to address enduring disparities within educational systems has led to the emergence of the intersection of social justice and higher education administration as a crucial field of study. Higher education institutions in Nigeria have historically struggled with issues of inclusion, access, low pay, lack of autonomy, and equal opportunities, all of which are reflections of larger societal disparities. The field of higher education management is becoming a center for revolutionary change as the pursuit of social justice gains traction in many domains.

An organized attempt to right historical wrongs is imperative, as the historical background exposes a legacy of discriminatory practices in higher education. The historical context establishes the framework for analyzing how administrators interact with and overcome systemic barriers, from biased admissions practices to unfair resource distribution. Additionally, contemporary issues, such as the widening wealth gap, shifting demographics, and evolving notions of diversity, further underscore the relevance and urgency of integrating social justice principles into the management of higher education.

There are still large differences in educational achievement based on high tuition fees, and racial, socioeconomic, and gender characteristics, even despite initiatives to promote diversity and inclusion. This unfairness reduces the chances of success in higher education for people from marginalized backgrounds and upholds structural barriers. To tackle this problem, proactive steps are needed to guarantee that all students have equitable access to high-quality education. These steps include focused financial assistance initiatives, recruitment and retention strategies, and inclusive curricula that reflect diverse perspectives. Through tackling these differences, we may strive towards a fairer system of higher education that enables every person to achieve success and make a positive contribution to society. Numerous research studies have been conducted on social justice from the perspective of higher institutions. Lo-Presti et al. (2023) conducted inclusion and social justice in sustaining higher education. Mapuya (2023) examined exploring social justice issues on higher education curricula. Watson et al. (2019) focused their treatise on integrating social justice-based conflict resolution in higher education settings. Abdullahi (2021) addressed social justice concerns in the management of student growth

and education. The study aims to determine the connection between students' growth and equitable learning opportunities, basic needs provision, and lesson planning by teachers. The researcher employed a quantitative technique to investigate the hypotheses through descriptive study. From a sample of public senior secondary schools in Kwara State, Nigeria, participants were chosen using a proportionate sampling approach. Data were collected using a questionnaire and then analyzed using tools from quantitative statistics. The results indicated that there is no discernible difference between equitable access to education, meeting fundamental requirements, preparing teachers, and overseeing students' growth. However, it is worth noting that none of the authors cited in this study specifically addressed and emphasized the importance of affordable education, a safe and inclusive environment, and language accessibility as essential variables for assessing social justice. Significant differences in the regions and locales covered by the research that has already been done serve as another important gap that spurred this investigation. Thus, this research has established and attempted to close the gaps created by earlier researchers.

Research Hypotheses

The following hypotheses were developed and tested:

- 1) There is no significant relationship between affordable education and the management of higher education
- 2) There is no significant relationship between a safe and inclusive environment and the management of higher education
- 3) There is no significant relationship between language accessibility and management of higher education

Related literature review

Social Justice

Social justice refers to how opportunities, resources, and privileges are distributed fairly and equally within a community to guarantee that everyone has equal access to fundamental rights and advantages (Paulette, 2023; Abdullahi, 2021). It entails addressing and resolving systemic injustices and inequalities that may be present due to traits like sexual orientation, disability, gender, race, or socioeconomic status, among others (Lo-Presti et al, 2023; Mapuya, 2023). The idea of social justice stems from the conviction that everyone should be treated with respect and decency and that society ought to be structured to encourage inclusivity and equality (The goal of social justice advocates is to establish a more just and equitable society by locating and eliminating discriminatory practices and institutions.

The concept of social justice in higher education involves applying the ideas of justice, equity, and inclusivity to different facets of academic institutions. This includes procedures, policies, and decision-making

frameworks to guarantee that everyone, from all backgrounds, has equitable access to resources and educational opportunities. To promote a more just and inclusive society, social justice is frequently sought through advocacy for policies, community organizing, education, and other initiatives (Watson et al, 2019; Demirbilek et al, 2021; Ochieng & Gyasi, 2021). It is a multifaceted and dynamic idea that entails continuous efforts to recognize and address injustices in a range of contexts. In the context of this study, social justice refers to affordable education, safe and inclusive school climate, and language accessibility. Affordable education refers to the delivery of instruction at a price that is acceptable and feasible for both individuals and families, thereby reducing the financial obstacles to enrollment and learning (Abdullahi, 2019). The idea acknowledges that the expense of education can be a major barrier for many individuals, possibly preventing them from pursuing further education or skill development. Ensuring that people have access to high-quality educational opportunities despite financial constraints is the goal of affordable education.

A safe and inclusive environment refers to the overall atmosphere and environment within a school that promotes a sense of physical and emotional safety, respect, acceptance, and belonging for all students, staff, and stakeholders. It goes beyond mere physical safety and encompasses the creation of an environment where individuals feel valued, supported, and free from discrimination, harassment, and bullying (Eluemuno et al, 2022; Timo, 2023)

Language accessibility refers to the design and provision of communication, information, and services in a way that ensures individuals with diverse language abilities, including those with limited proficiency in the primary language of communication, can access and comprehend the content (Darquennes et al, 2020; Lo-bianco, 2013; Linn, 2015). The goal is to make information and resources inclusive and understandable to people with various linguistic backgrounds, thereby reducing language barriers and promoting equal access to services.

Management of Higher Education

Management is the process of effectively and efficiently achieving organizational goals by planning, organizing, directing, and controlling resources (financial, human, physical, and informational). It involves the coordination of human resources towards the accomplishment of particular goals and prudent resources to maximize output and attain desired results (Dastgir & Bakhsh, 2022; Mapuya, 2023). The management of higher education refers to the strategic planning, organization, and coordination of activities within institutions of higher learning. It involves a set of processes and practices aimed at efficiently and effectively achieving the mission and goals of the educational institution. Management in higher

education encompasses various aspects, including academic programs, faculty and staff, financial resources, student services, and overall institutional development.

Higher education describes the level of education that follows secondary or high school graduation is referred to as higher education. It includes all of the formal education offered by colleges, universities, institutes, and other establishments that provide professional and advanced academic programs. People who want to expand their knowledge, pick up specialized skills, and accomplish particular career goals usually pursue higher education (Lo-Presti et al., 2023). A higher education is a life-changing experience that enables people to follow their intellectual interests, accomplish their professional and personal objectives, and advance society and knowledge. It is essential in molding future thinkers, leaders, and professionals in a variety of fields. Management of higher education in this study refers to governance structure, quality assurance as well as student service.

Governance structure refers to the framework, mechanisms, and processes by which an organization is directed, controlled, and managed. It outlines the relationships, responsibilities, and decision-making procedures among the various stakeholders within the organization, including its leadership, management, shareholders, and other relevant parties (Austin, 2016). The governance structure provides the architecture for establishing accountability, transparency, and effective communication, ultimately guiding the organization toward its goals and ensuring its overall well-being (Abdullahi, 2019). Effective governance structures contribute to organizational stability, sustainability, and the achievement of its mission and objectives. It is a critical aspect of organizational management, ensuring that decision-making processes are robust, ethical, and aligned with the organization's purpose and values.

Quality assurance (QA) refers to the organized procedures, practices, and actions carried out in an organization to guarantee that goods, services, or operations fulfill or surpass established requirements and standards. Preventing flaws, mistakes, or problems in the deliverables is the main objective of quality assurance, which makes sure that the finished products constantly satisfy the required standards of quality (Ko & Chung, 2014). Quality assurance is applicable across various industries and sectors, including manufacturing, services, healthcare, education, and software development. It is a proactive approach to quality management, emphasizing prevention rather than detection and correction of defects after they occur. Integrating quality assurance practices into the

educational setting, it enhances stakeholders' satisfaction, builds trust, and improves overall efficiency and competitiveness.

Student services encompass a variety of mechanisms and resources offered by educational establishments to cater to the varied requirements of students, improve their general welfare, and facilitate their scholastic achievements (Abdullahi, 2017). These programmes are intended to help students advance both academically and personally by providing support throughout their educational journey. While they can differ amongst schools, student services usually cover a wide range of options. Admissions and enrollment services, academic advising, career services, financial aid, and scholarships, housing services, student organizations and activities, accessibility services, counseling and mental health services, and library and learning resources are a few examples of common student services. Student services play a crucial role in creating a positive and supportive learning environment. They aim to address the holistic needs of students, fostering personal growth, academic success, and a sense of community within the educational institution. These services contribute to the overall student experience and help students navigate the challenges and opportunities of their academic journey.

Theoretical contribution

The theoretical background of this study was based on the Critical Theory by **Kant as cited in Krishnan (2021)**. Critical theory is a philosophical approach that entails scrutinizing and challenging the dominant societal perspectives. Essentially, it involves examining beliefs that may favor only privileged individuals and advocating for a complete transformation. A theory is deemed critical when it actively pursues the liberation of humanity from oppressive conditions, serves as a liberating force, and endeavors to establish a world that fulfills essential needs. Kant articulates this concept as the capacity to break away from self-imposed dependence. In essence, the motto of enlightenment is having the courage to employ one's reasoning, contributing to freedom through self-determination. This approach entails questioning any authority and dominance that lacks rational justification and advocating for autonomy in human development. Critical Theory, in this regard, can help diminish dependence and mitigate the influence of social injustice on the structure of education. When applied to education, critical theory questions how the educational system can enhance learning for everyone, regardless of socio-economic background or other hindrances. It provides insight into and opportunities for understanding various critical viewpoints held by marginalized members of society. Consequently, it advocates the notion

that education serves as a crucial instrument for bringing about social transformation.

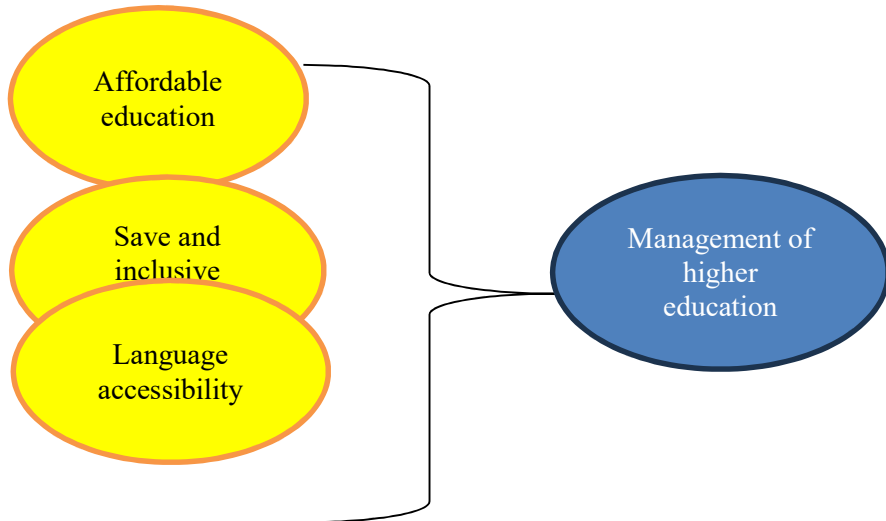


Figure 1: Author contribution

Critical theory, as applied to the management of higher education, involves examining and challenging the underlying power structures, social hierarchies, and systems of oppression within educational institutions. It aims to question traditional assumptions and practices to promote social justice, equity, and inclusivity. The relevance of critical theory in the management of higher education lies in its ability to foster a more socially just, inclusive, and equitable educational environment in terms of affordable education, safe and inclusive learning environment, and language accessibility. Thus, this study anchored on critical theory such that, it serves as a powerful framework for administrators in higher education, offering a lens through which to critically assess and transform institutional practices to promote social justice and equity. By incorporating critical perspectives into administration, institutions can work towards creating environments that prioritize inclusivity, diversity, and justice for all members of the academic community.

Methodology

Research Design

Because of the nature of this study and the primary study objectives, which were to assess the relationship between affordable education, a safe and inclusive environment, and language accessibility with management of higher education, the quantitative approach will be deemed most appropriate. This study also used a descriptive and correlational research design to try to find out how the identified variables (social justice factors and MHE) are related statistically.

(Creswell & Creswell, 2017).

Population and Sampling Procedure

The study included all of the academic personnel in Nigeria's public universities. The target group for this study was 400 Nigerian university lecturers, who were the intended focus of this investigation. The researcher purposefully selected a sample of 400 academics to increase the robustness of the study. The lecturers at the public institutions completed 340 questionnaires in total. A few surveys were thrown out during data cleansing because they were deemed inappropriate. In the end, this study used 334 questions. There were twenty-five questions on the questionnaire for this research. Consequently, 334 correctly completed questionnaires were used to advance the study, resulting in an 83.5% response rate for the study's final evaluation of its hypotheses.

Instrumentation

The questionnaire approach was employed in this study. It may be thought of as a research tool that consists of a series of questions and additional incentives intended to collect the necessary data from the intended respondents. The Likert scale, which has four points, 1 for strongly disagree, 2 for disagree, 3 for agree, and 4 for strongly agree will be employed in this data-gathering approach (Choy, 2014; Creswell, 2015).

Data Collection Technique

Following data collection, the information is entered into the statistical software (SPSS) and utilized to apply the PLS-SEM technique using the SmartPLS 3.2.9 programme. This study therefore used PLS-SEM with the SmartPLS 3.29 programme to accomplish the first objective, which is to do data analysis and obtain the necessary results. SmartPLS 3.2.9 was selected as an appropriate method to test the hypotheses based on the objectives of the current study. The goal of the reflective measurement model evaluation is to validate the validity and reliability of construct measures, hence providing evidence that the inclusion of these measures in the path model is suitable. Convergent validity, composite reliability, indicator reliability, and discriminant validity are the four primary requirements of the reflective measurement model. PLS-SEM studies can be applied to reflective constructs if all of these requirements are satisfied (Hair et al, 2017). Furthermore, the structural model is evaluated using the following metrics: effect size (f^2), path coefficients, and coefficient of determination (R^2). As a result, Table 3 below can be used to describe the stages involved in structural modeling. It also provides indications and suggested thresholds for measurement and structure modeling tests.

Data Analysis

The data gathered for this investigation were analyzed using SmartPLS 3.2.9. The heterotrait-monotrait (HTMT) criterion, bootstrap-based

significance testing, PLS prediction, goodness of fit, and other features is among the many facilities and subroutines for reflective and formative assessments and structural models that are included in SmartPLS (Ringle et al, 2015). Making a measuring model was the first step. Testing is done for discriminant, convergent, construct, and reliability validity. The hypothesis is tested using the second structural model (Hair et al., 2020).

Findings

Measurement Model Assessment

A measurement model's validity and accuracy are often assessed (Hair et al., 2013). The composite reliability measure, which is used to evaluate the construct's reliability, must be more than 0.7. In a similar vein, a score higher than 0.70 and the determination of the outer loadings measure are necessary to confirm the item's reliability. More than 0.5 is required for the AVE. AVE The results are displayed in Table 1 and Figure 1.

Cronbach's Alpha and Composite Reliability (CR) were used to determine construct reliability. Table 1 displays the convergent validity and construct reliability for each construct. For every construct, the Cronbach alpha values and CR exceeded the suggested threshold of 0.700 for the entire sample. Convergent validity is supported by the Average Variance Extracted (AVE) for the constructs being greater than 0.500 for the entire sample (Diamantopoulos et al, 2012).

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
AE	0.759	0.838	0.504
SIE	0.753	0.759	0.504
LA	0.786	0.853	0.538
MHE	0.854	0.835	0.538

Table 1: Construct Reliability and Validity, ($p < 0.01$)

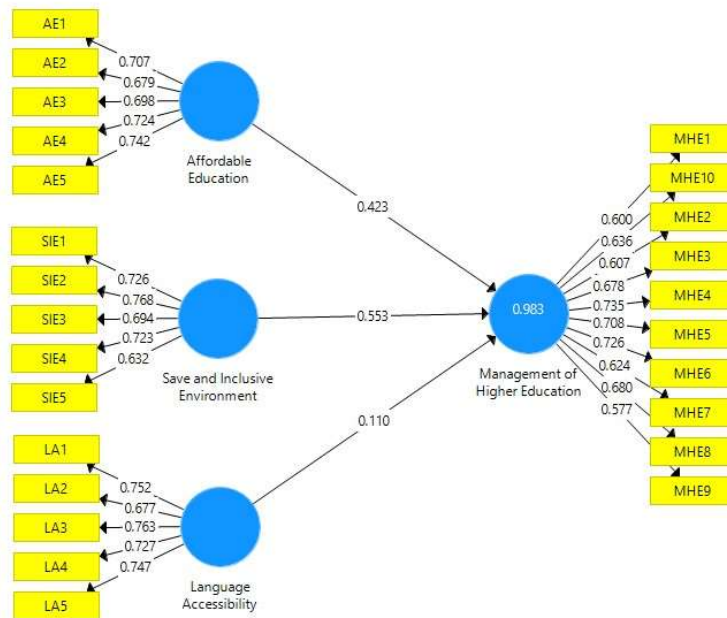


Figure 2: Measurement Model of the Constructs

Additionally, the Fornell and Lacker criteria were used to assess the discriminant validity of the construct. the HTMT was also evaluated to evaluate in-depth discriminant validity. The values in the diagonals should lie under the associated values in this technique, and they should be higher than them. The diagonals show the AVEs' square root, which ought to be greater than the correlation between their variables. The diagonal values in Table 3 are greater than their corresponding values, which satisfies the Forner and Locker criterion and upholds discriminant validity (Ab Hamid et al 2017).

	Affordable Education	Language Accessibility	Management of Higher Education	Save and Inclusive Environment
Affordable Education	0.710			
Language Accessibility	0.667	0.734		
Management of Higher Education	0.654	0.665	0.734	
Save and Inclusive Environment	0.656	0.675	0.537	0.710

Table 2: Fornell and Lacker criterion

Note(s): AVE's square root is the diagonal, and the correlations between latent variables are represented by the off-diagonal values.

Assessment of the Structural Model

The Structural model is depicted visually. Figure 4 depicts the graph, and the arrows linking the study's constructs were decided by the direction of the hypotheses presented in the framework. The single-headed arrows are used to confirm the significance of the study concept. Figure 3 illustrates the factor loadings for each item.

Hypothesis Analysis

The results for the hypothesis have been given in Table 3, figure 3, and Figure 4. It shows that affordable education has an effect of 0.420 on the management of higher education with a p-value of 0.000 which is less than 0.05 and a T-value greater than 1.96 which means there is a relationship between AE and MHE. Also, A relationship between SIE and MHE is evident as SIE has an effect of 0.570 on MHE with a p-value of 0.000, which is less than 0.05, and a T-value of larger than 1.96. Additionally, there is a link between LA and MHE of 0.094, as indicated by the p-value of 0.000, which is less than 0.05, and the T-value of greater than 1.96. According to the results, the hypothesis has been accepted, as the β is having value more than the cut-off values (0.10), which means that all the constructs have significant contributions and impact on the management of higher education. In the same way, the t-statistics for the constructs have greater value than the recommended one i.e. (1.96), which indicates the logical dependence of the dependent variable on the independent variables. In summary, the result proclaims that the assertiveness of the hypotheses was supported by the results.

Hypotheses	Original sample (0)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics	P Value	Decision
Affordable Education	0.420	0.421	0.022	19.179	0.000	Support
Save and Inclusive Environment	0.570	0.570	0.023	24.838	0.000	Support
Language Accessibility	0.094	0.092	0.013	7.483	0.000	Support

Table 3: *Summary of Path Coefficients*

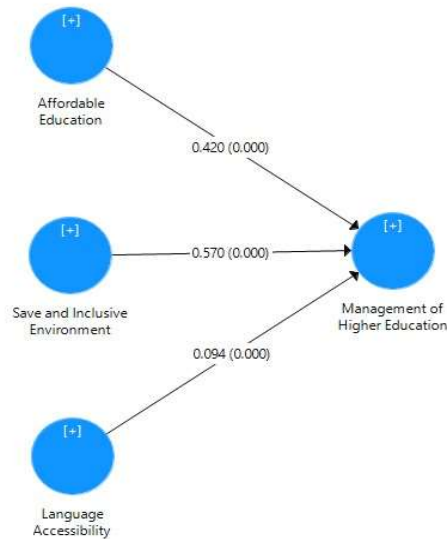


Figure 3: Structural Model of the Study

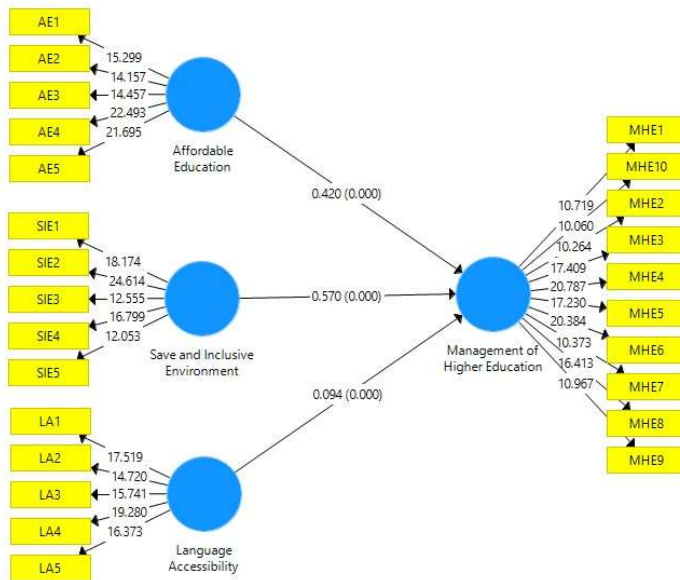


Figure 4: Structural Model of the Study

Discussion

The motive of this research was to investigate the relationship between the management of higher education in Nigeria, and social justice a positive impact on the management of higher education. It is likely said that if social justice is effective, it can positively enhance and improve the management of higher education. In line with the research findings

of Abdullahi (2019) social justice in education fosters moral dialogue that allows for good academic achievement by upholding connections with students from diverse origins and upholding a value orientation towards their growth. In the context of education, social justice refers to the procedures, tenets, and regulations that the state or educational institutions have implemented to guarantee that the welfare of students receives the highest priority to maximize their growth. As per the findings of this study, school administrators can focus more on the effective use of digital teaching platforms such as Affordable education (AE), safe and inclusive environment, and language accessibility.

This study demonstrates that AE seems to influence MHE and contribute to the reduction of high levels of student debt and making education more financially sustainable, creating a diverse and skilled workforce, leading to higher graduation rates and a more educated population, reducing disparities segments of society as well as enable more people to enjoy the benefit of improved quality of life. The findings of this study reveal that there is a strong relationship between AE and MHE. The result of the current hypothesis is consistent with previous study's findings such as Abdullahi, 2019; Guerra et al, 2013; Dover, 2015; and Takwate, 2018 that to be responsive to the growth of students' knowledge, education should be necessary, free, accessible, acceptable, and flexible enough to adjust to societal changes and the child's best interests. In a democratic system, all students should have equal access to education regardless of their gender, age, ethnicity, culture, or religion to provide them the best chance to meet the highest standards. The second hypothesis was supported. Following the result of this study, previous studies have demonstrated that SIE positively correlates with MHE such as Timo, 2013; Abdullahi, 2022; Eluemuno et al, 2022 that safe and inclusive environment is the sure means of attaining optimum integral development and management of higher education. In addition, the third hypothesis shows that there is a significant relationship between LA and MHE, the findings are validated by previous studies by Darquennes et al, (2020); Karen, (2013); Lo-Bianco (2013), and Linn (2015) that language accessibility is the key to enhance effective management of higher education to improve information exchange, networks, multilateral interaction, as well as growing of students.

Limitations and implications of the study

The findings show that social justice has a big influence on how higher education is run. To ensure that higher education is managed effectively, the government should provide affordable tuition and create a safe and welcoming environment. On the other hand, the results of this study offer fresh insights to the government about how to lower the cost of education and supply the required resources for efficient management of

higher education in Nigeria. There are several limitations to this study, so it's important to discuss these as well. This research has to be enhanced and merged to obtain more detailed findings. It is best to combine this quantitative cross-sectional survey with other methods to improve knowledge of social justice and how higher education is managed. As a result, qualitative research is also suggested as a development to obtain more thorough details regarding the rationale behind the conclusions.

Conclusion

Based on the findings, a conceptual understanding of the relationship between the independent variables; affordable education, a safe and welcoming atmosphere, and language accessibility has been established in this study. These factors have the potential to improve how well higher education is managed.

Conflict of interest

The authors state that there is no conflict of interest to report.

References

- Abdullahi, N. J. K. (2022). Managing basic education for safety and security in Nigeria. *Journal of Education and Humanities Research*. 13(1), 1-14. <http://web.uob.edu.pk/uob/journals/jehr/jehr.php>
- Abdullahi, N. J. K. (2021). Social justice issues in education and management of student development in Nigeria. *Contemporary Educational Researches Journal*. 11(3), 116-129. <https://doi.org/10.18844/cej.v11i3.590>
- Abdullahi, N. J. K. (2019). Good Governance Issues in Education System and Management of Secondary Schools in Kwara State, Nigeria. *eJournal of Education Policy*. 1(1), 1-14. <https://nau.edu/COE/eJournal/Spring-2019/>
- Abdullahi, N. J. K. (2017). Student personnel services administration and sustainable education in Nigeria. *Pakistan Journal of Education Research and Evaluation*. 3(2), 23-36. <http://editor.pjere@pu.edu.pk>
- Ab Hamid, M.R., Sami, W. and Sidek, M.M. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker Criterion versus HTMT Criterion. *Journal of Physics: Conference Series*, 890, Article ID: 012163. <https://doi.org/10.1088/1742-6596/890/1/012163>
- Austin, L. & Glen, A. J. (2016): *Governance of higher education: Global perspectives, Theories, and Practices*. London: Routledge.10.4324/9781315816401

- Choy, L. T. (2014). The strengths and weaknesses of research methodology: Comparison and complimentary between qualitative and quantitative approaches. *Journal of Humanities and Social Sciences*, 19(4), 99-104. [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkpozje\)\)/reference/referencespapers.aspx?referenceid=1903635](https://www.scirp.org/(S(351jmbntvnsjt1aadkpozje))/reference/referencespapers.aspx?referenceid=1903635)
- Creswell, J. W. (2015). *A concise introduction to mixed methods research*. Thousand Oaks, California: SAGE. <https://www.worldcat.org/title/concise-introduction-to-mixed-methods-research/OCLC/870288692>
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach*, USA: Sage Publication. [https://www.scirp.org/\(S\(351jmbntvnsjt1aadkozje\)\)/reference/referencespapers.aspx?referenceid=2969274](https://www.scirp.org/(S(351jmbntvnsjt1aadkozje))/reference/referencespapers.aspx?referenceid=2969274)
- Darquennes, J., Du-plessis, T, & Soles, J. (2020). Language diversity management in higher education toward an analytical framework. *Journal of Sociolinguistics*, 34(1), 7-29. https://www.researchgate.net/publication/342038956_Language_diversity_management_in_higher_education_towards_an_analytical_framework
- Dastgir, G. & Bakhsh, K. (2022). Social justice in higher education: Revisited, practices and grievance. *Global Social Science Review*, vii(ii), 57-65. <https://www.humapub.com/admin/alljournals/gssr/papers/U4bYrmgThV.pdf>
- Demirbilek, N., Atila, F., & Korkamaz, C. (2021). The concepts of social justice from the perspective of university students. *Education Quarterly Review*, 4(3), 89-99. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3893003
- Dover, A. (2015). Teaching for social justice and the common core: justice-oriented curriculum for language arts and literacy. *Journal of Adolescent and Adult Literacy*, 59(5), 517–527. <https://ila.onlinelibrary.wiley.com/doi/abs/10.1002/jaal.488>
- Diamantopoulos, A., Marko, S., Christopher, F., Petra, W. & Sebastian, K. (2012). Guideline for choosing between multi-item and single-item scales for construct measurement: A predictive validity perspective. *Journal of the Academy of Marketing Science*, 40(3), 434- 449. <https://core.ac.uk/download/pdf/18508861.pdf>
- Eluemuno, A. I., Anokam, E. O, Ipem, J. L., Eluchie, O. J., & Nwikpo, M. N. C. (2022). The influence of a safe school environment on inclusive education for sustainable development. *International Journal of Multidisciplinary and Current Education*

- Research, 4(6), 81-88. https://www.ijmcer.com/wp-content/uploads/2022/12/IJMCEER_J046081088.pdf
- Guerra, P. L., Nelson, S. W., Jacobs, J. & Yamamura, E. (2013). Developing educational leaders for social justice: programmatic elements that work or need improvement. *Education Research and Perspectives*, 40, 124–149. https://digitalcommons.usf.edu/tal_facpub/57/
- Hair, J. F., Howard, M. C. & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research*, 109, 101-110. <https://ideas.repec.org/a/eee/jbrese/v109y2020icp101-110.html>
- Hair, J., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial management & data systems*. Syst
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1-2), 1– 12. <https://doi.org/10.1016/j.lrp.2013.01.001>
- Karen, M. L. (2013): Higher Education Language Policy. CEL-ELC Working Group. <https://go.gale.com/ps/i.do?id=GALE%7CA329067508&sid=googleScholar&v=2.1&it=r&linkaccess=abs&issn=17576822&p=ONE&sw=w&userGroupName=anon%7E8542db44&aty=open-web-entry> Available online: (last access on 29 January 2023).
- Ko, W.H., & Chung, F. (2014) Teaching quality, learning satisfaction, and academic performance among hospitality students in Taiwan. *World Journal of Education*, 4(5), 11-20. <https://files.eric.ed.gov/fulltext/EJ1158590.pdf>
- Krishnan, M. (2021). Kant's critical theory of the best possible world. *Kantian Review*, 26(1), 27- 51. <https://doi.org/10.1017/S1369415420000321>
- Linn, A. (2015): English in Europe series preface to *English-medium instruction in European higher education*, edited by S. Dimova, A. K. Hultgren, and C. Jensen, vii-viii. Boston/Berlin: De Gruyter. <https://doi.org/10.1515/9781614515272-001>
- Lo Bianco, J. (2013): Language policy and planning: Overview. In: Chapelle, Carol A. (ed.): *The Encyclopedia of Applied Linguistics*. Oxford: Wiley-Blackwell, 3094–3101. [10.1002/9781405198431.wbeal0638](https://doi.org/10.1002/9781405198431.wbeal0638)
- Lo-Presti, L., Maggiore, G., Marino, V. et al. (2023). Inclusion and social justice in sustainable higher education: An integrated perspective through the lens of public engagement. *Journal of Management and Governance*, <https://doi.org/10.1007/s10997-023-09672-x>

- Mapaya, P. M. (2023). Exploring social justice issues that inform the 21st-century curriculum in higher education: Lecturers' voices and experience. *Research in Educational Policy and Management*, 5(3), 108-127. <https://repamjournal.org/index.php/REPAM/article/view/137>
- Ochieng, V. O., & Gyasi, R. M. (2021). Open educational resources and social justice: Potential and implications for research productivity in higher educational institutions. *E-learning and Digital Media*, 18(2), 105-124. <https://aphrc.org/wp-content/uploads/2021/11/Open-educational-resources-and-social-justice-Potentials-and-implications-for-research-productivity-in-higher-educational-institutions.pdf>
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. 3rd Sage Publications: Thousand Oaks, CA. <https://aulasvirtuales.files.wordpress.com/2014/02/qualitative-research-evaluation-methods-by-michael-patton.pdf>
- Paulette, M. (2023). Social justice as a dimension of university social responsibility in Yarosleva Roles-Bykbaev (ed.) *social inequality structure and social processes*. <https://www.intechopen.com/online-first/86017>
- Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3*. Boenningstedt: SmartPLS GmbH, <http://www.smartpls.com>.
- Takwate, K. T. (2018). Allocation, availability, and maintenance of school facilities as a correlate of academic performance of the senior secondary school in Anambra State, Nigeria. *International Journal of Scientific and Research Publications*, 8(9), 42–81. <https://www.ijsrp.org/research-paper-0918.php?rp=P817756>
- Timo, S. (2023). A safe learning environment from the perspective of Laurea University of applied sciences, safety, security, and risk management students and staff. *Heliyon*, 9, 1-4. <https://www.sciencedirect.com/science/article/pii/S2405844023000439>
- Watson, N. T., Rogers, K. S., Watson, K. L., Liau-Hing, C. (2019). Integrating social justice-based conflict resolution into higher education setting: Faculty, staff, and student professional development through mediation training. *Conflict Resolution Quarterly*, 36, 251-262. <https://www.semanticscholar.org/paper/Integrating-social-justice-based-conflict-into-and-Watson-Rogers/37097f971bcb11ef5f51694232a6e640bb597555>.

DEVELOPING PEDAGOGICAL SKILLS THROUGH INOVATIVE STEAM EDUCATION METHODS FOR FIRST YEAR PRIMARY AND PRESCHOOL EDUCATION STUDENTS

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Abstract: *In the context of contemporary education, integrating the STEAM (Science, Technology, Engineering, Art, and Mathematics) approach into the initial training of future teachers becomes essential for developing pedagogical skills adapted to current demands. This work explores the impact of innovative STEAM-based activities on first-year students. By integrating STEAM activities into the training of future teachers, we will significantly contribute to the development of skills necessary for a modern and efficient educational act.*

Key words: *STEAM education; initial training; students; pedagogical skills; teaching practice; innovation in education.*

Introduction

Postmodern education adapts to the needs of the society we live in. To keep up with and respond to new changes, we must adapt and use what we have learned, thus combining traditional and modern approaches. “In order to carry out the teaching mentoring activity in a coherent and systematic process, it is necessary to design the mentoring activity out to create a kit, which includes the basic tools, starting from a comprehensive analysis of development needs, to activity observation sheets, observation sheets focused on various areas of teaching activity, to professional dialogue sheets, progress evaluation sheets, final evaluation sheets of the mentoring activity” (Chișiu C.M., 2023, p. 84–101).

The potential benefits of STEAM education are multiple. It can help young people develop critical thinking, problem-solving skills and creativity, which are essential for success in the 21st century (Kewalramani, 2021; Lin, 2021). In a postmodern digital society, promoting STEAM learning experiences is essential to achieve innovation for the future. STEAM education, on the other hand, includes the arts as an integral part, aiming to promote creativity, innovation, and

problem-solving skills among students. (Hunter-Doniger, 2021; Land, 2013; Magnuson & Bachman, 2023). (Adapted from Weyseng Yang, Sarika Kewalramani, and Jyoti Senthil, 2023, p.29)

Theoretical Foundations of STEAM Education

STEAM education (Science, Technology, Engineering, Arts, Mathematics) is an interdisciplinary approach that integrates five essential domains for the development of skills needed in the 21st century skills. “Teachers should know how to capitalize on the various learning experiences of students from non-formal or informal education and find ways, ways to capitalize on their own learning experiences outside of formal learning, to energize and streamline teaching processes which they build. Teachers should share their own learning experiences, resulting in a certain attitude towards knowledge and an intellectual work style, to create a stimulating climate for students, the satisfaction of using their full cognitive and metacognitive potential in the teaching process.” (Egerău A.M, Coşarbă E.M, Torkos H., 2022, p. 34–52)

Initially, STEM education was promoted in the United States to improve young people's preparation in technical and scientific fields. Later, Georgette Yakman introduced the STEAM concept, adding the arts, arguing that they are essential for creativity and innovation. According to Yakman (2008), STEAM represents a transdisciplinary method where science and technology are understood through engineering and arts, all supported by mathematics.

The needs of future occupations are rapidly changing, and the knowledge and skills acquired today are insufficient to prepare young people for tomorrow's life. Researchers estimate that 65% of people will be employed in new fields of work not yet known today. These occupations emphasize the need for 21st-century skills: digital competencies, critical thinking, teamwork, innovative and adaptive thinking.

STEAM education helps students develop competencies that emphasize logical, mathematical, experimental, and scientific thinking by applying what they have learned to real-life situations.

Developing Pedagogical Skills Through Innovative STEAM Education

Modern education emphasizes the development of transversal skills necessary for preparing future teachers. In this context, the STEAM approach offers an innovative method that supports students' didactic training through practical, interdisciplinary, and creative experiences. This method stimulates critical thinking, problem-solving, and collaboration, essential competencies for future educators.

“The main directions for modernizing the Romanian curriculum are

based on an analysis of the current curriculum and the education system, as well as several European guidelines, such as the qualifications framework and key competences. The OECD promotes curriculum flexibility through personalized education and a focus on the student. These directions require a deep understanding of each student's developmental needs, which serves as the foundation for educational approaches.” (Torkos H., Coşarbă E., 2023, p. 307–323)

STEAM education integrates science, technology, engineering, arts, and mathematics in a holistic manner, offering students active learning opportunities. According to Yakman (2008), STEAM not only imparts knowledge but also develops pedagogical skills, such as:

- the ability to design interactive lessons based on exploration and creativity
- enhancing communication and collaboration skills in interdisciplinary teams
- applying methods based on investigation and experimentation

Although interest in the innovative STEAM method has grown in recent years, researchers have stated the following: “Cook and collaborators (2020) investigated how primary education teachers develop a STEAM curriculum. Using the STEAM teaching model developed by Quigley and collaborators (2017), they analyzed plans created by 25 teachers. Their results showed that the model developed by Quigley and colleagues is useful in developing teachers' STEAM competencies.” (Lavinia-Denisa Şuteu, 2024, p.32)

Within universities, pedagogical practice represents an essential moment in the training of future teachers, offering them the opportunity to develop didactic and pedagogical skills through authentic classroom experiences. Motivation is the key for the efficiency of learning. In this case: “it is important for students to receive information that is as useful and applicable as possible to their daily lives, as well as to grow for their future careers; they are responsible for the activities they perform on their own and not only when it comes to learning new things, but also when allocating time for study. It is important to overcome certain obstacles that may occur when encountering learning difficulties.” (Felea M.I., Roman A. F., 2022, p. 10–20). In this context, the integration of innovative STEAM activities contributes significantly to the development of critical thinking, creativity and practical skills of first-year students.

Through the activities of pedagogical practice “the student can genuinely and directly demonstrate the professional and transversal competencies acquired through foundational, domain-specific, specialized, and complementary subjects in an experiential but advised (mentored) form. We are convinced that the variety of educational situations encountered during the pedagogical practice period will

challenge each student to arguments and decisions, some in time intervals, which will have their origin in their scientific and humanistic training, in their cultural heritage, and, not least, in their learning experience" (D. Herlo, A. Egerău, Ev. Balaş, T. Dughi, C. Bran, A. Roman, 2020).

We exemplify through an activity during the workshop that took place at Aurel Vlaicu University of Arad during the EFASTUD student conference, in November 2024, where first-year PIP students participated:

Center I – SCIENCE

Activity Topic: "Autumn Experiments"

Means of Implementation: Experiment

Activity Objectives:

- active participation in autumn experiments
- developing understanding of the phenomena demonstrated during experiments

Methods and Procedures: Experimentation, demonstration, conversation, observation, explanation, practice

Teaching Materials: Containers, plastic cups, autumn leaves, apples, vinegar, baking soda, lemon, Coca-Cola, milk

Center II – TECHNOLOGY

Activity Topic: "Autumn Globe"

Means of Implementation: Construction and assembly

Activity Objectives:

- building an autumn tree using natural and synthetic materials
- properly assembling autumn elements to create the "Autumn Globe"

Methods and Procedures: Conversation, explanation, demonstration, observation, practice

Teaching Materials: Glass jars, autumn decorations, glitter, autumn leaves, twigs

Center III – ENGINEERING

Activity Topic: "The Playful Hedgehog"

Means of Implementation: construction and assembly

Activity Objectives:

- designing a 3D image of an autumn hedgehog using natural and synthetic materials
- creation of the playful hedgehog by correct assembling of the component elements

Teaching Materials: Potatoes, toothpicks, matchsticks

Center IV – ART

Activity Topic: "Autumn Painting"

Means of Implementation: Gluing, decorating, assembly (collage)

technique)

Activity Objectives:

- creating an autumn-themed painting using natural and synthetic materials
- cultivating artistic and aesthetic sense through assembling the elements that compose the autumn painting

Methods and Procedures: conversation, explanation, demonstration, observation, practice

Teaching Materials: natural and synthetic autumn materials, autumn decorations

Center V – MATHEMATICS

Activity Topic: "In the Fairy's Autumn Garden"

Means of Implementation: Problem-solving and exercises

Activity Objectives:

- solving mathematical exercises on the worksheet to develop mathematical skills
- discovering the fairy's autumn fruits and vegetables by solving exercises correctly

Methods and Procedures: Explanation, practice, demonstration, conversation, problem-solving

Teaching Materials: Worksheets, fruits, and vegetables

Conclusions

The implementation of innovative STEAM activities in the initial training of first-year students represents an effective strategy for developing essential pedagogical skills for modern education: By using interactive methods based on experimentation, future teachers improve their practical abilities, capacity to design innovative activities, critical thinking, creativity, and application of learned concepts in real life.

According to research of Popa and Ciascai (2017), students' positive attitudes towards STEM education demonstrate its potential to develop critical thinking and creativity. Zsoldos-Marchis and Ciascai (2019) highlighted that students specialized in pedagogy for primary and preschool education perceive STEAM education as an integrative approach that allows them to connect pedagogical theories with innovative practices.

On the other hand, studies accomplished by Bărnuțiu-Sârca and Ciascai (2021), reveal that primary and preschool teachers acknowledge the value of STEM-based approaches for developing interdisciplinary teaching skill development. Berisha and Vula (2024) demonstrated that involving students in collaborative action research enhances their understanding and application of integrated STEM education.

Redeş and colleagues (2023) emphasize the impact of a positive organizational climate on intentional integrative-quality behavior in

preschool education, underscoring the relevance of STEAM for systematic approaches. Also, the contributions of Purcar and colleagues (2024) highlight the role of visual reasoning in solving mathematical problems, a central component of STEAM education.

At the same time, Souca, Pop-Ignat, and Bocoş (2020) emphasize on the objectives of early education in Romania, arguing that an effective STEAM integration contributes to the formation of multidimensional competencies. Câmpean and colleagues (2024) indicate that positive feedback is crucial for building students' confidence in their abilities, encouraging participation in STEAM activities. Parallely, Bocoş and colleagues (2023) emphasize the importance of mentoring and metacognition in teacher training, essential components for successfully implementing STEAM. Rad and Bocoş (2024) explored advancements in learning organizations, highlighting STEAM's role in creating adaptive and innovative educational environments. Last but not least, Țifrea and collaborators (2024) demonstrated that extracurricular activities based on STEAM could develop specific behaviors even among kindergarten children, showcasing the potential of this approach across all educational levels.

The integration of these perspectives validates the importance of STEAM activities for students' initial training, promoting the development of essential transversal skills in modern education.

References

- Chişiu, C.M., (2023), The didactic mentor's kit. The efficiency of the mentoring activity, in *Journal Plus Education* vol. XXXIV no 2/november 2023, p.84-101
- Egerău, A.M, Coşarbă, E.M, Torkos, H., The value of formal education in the personal development of primary school pupils, in *Journal Plus Education* vol. XXX no 1/2022, p.36-52
- Felea, M. I, Roman, A.F, (2022), The motivation of learning in students, in *Journal Plus Education* vol. XXXI no 2/2022, p.10-20
- Herlo D., Egerău A., Balaş E., Dughî T., Bran C., Roman A., (2020), *Devenire în profesorat, (Becoming a professor) Presa Universitară Clujeană (Cluj University Press)*
- Torkos, H., Coşarbă, E., Outdoor education as an interface between traditional and modern learning approaches: a curriculum based analysis at core curriculum stage in Romania, in *Journal Plus Education*, vol. XXXIV no 2/november 2023, p.307-323
- Şuteu L.D, Ciascai L. (2024), *Dezvoltări în educația STEM: STEAM, STREAM și învățarea bazată pe investigație; (Developments in STEM education: STEAM, STREAM and inquiry-based learning)*, Presa Universitară Clujeană (Cluj University Press)

- Popa, R. A., & Ciascai, L. (2017). Students' Attitude towards STEM Education. *Acta Didactica Napocensia*, 10(4), 55-62.
- Zsoldos-Marchis, I., & Ciascai, L. (2019). The opinion of primary and preschool pedagogy specialization students about the teaching approaches related with STEM/STEAM/STREAM education. In *ICERI2019 Proceedings* (pp. 7269-7275). IATED.
- Ciascai, L., & Dulama, M. E. (2013). What Specific Science Abilities and Skills Are Romanian Students Developing during Primary Education? A Comparison with the Abilities Tested by the TIMSS 2011 Inquiry. *Acta Didactica Napocensia*, 6(4), 29-44.
- Bărnuțiu-Sârca, M., & Ciascai, L. (2021). Primary And Pre-School Teachers' Views On Stem Based Approaches. *European Proceedings of Social and Behavioral Sciences*, 104.
- Berisha, F., & Vula, E. (2024). Introduction of integrated STEM education to pre-service teachers through collaborative action research practices. *International Journal of Science and Mathematics Education*, 22(5), 1127-1150.
- Redeș, A., Rad, D., Roman, A., Bocoș, M., Chiș, O., Langa, C., ... & Baci, C. (2023). The Effect of the Organizational Climate on the Integrative–Qualitative Intentional Behavior in Romanian Preschool Education—A Top-Down Perspective. *Behavioral Sciences*, 13(4), 342.
- Purcar, A. M., Bocoș, M., Pop, A. L., Roman, A., Rad, D., Mara, D., ... & Triff, D. G. (2024). The Effect of Visual Reasoning on Arithmetic Word Problem Solving. *Education Sciences*, 14(3), 278.
- Souca, V., Pop-Ignat, B., & Bocoș, M. (2020). Objectives of the Early Education in Romania—A Theoretical and Practical Teleological Curricular Study. *Educatia (Education)* 21, (18), 78-84.
- Câmpean, A., Bocoș, M., Roman, A., Rad, D., Crișan, C., Maier, M., ... & Roman, C. E. (2024). Examining Teachers' Perception on the Impact of Positive Feedback on School Students. *Education Sciences*, 14(3), 257.
- Bocoș, M., Mara, D., Roman, A., Rad, D., Crișan, C., Balaș, E., ... & Purcar, A. M. (2023). Mentoring and metacognition—Interferences and interdependencies. *Journal of Infrastructure, Policy and Development*, 8(2), 2859.
- Rad, D., & Bocoș, M. (2024). Advancements in Learning Organizations: A Comprehensive Narrative Review. *Revista Romaneasca pentru Educatie Multidimensionala (Romanian Journal for Multidimensional Education)*, 16(2), 418-446.
- Țifrea, D. F., Roman, A. F., Bocoș, M. D., & Rad, D. (2024). An Experimental Approach to Develop and Assess Steam-Type

Behaviors in Extracurricular Activities in Kindergarten Children. *Educatia 21 (Education) 21, (28), 159-166.*

VOLUNTEERING AS A PLATFORM FOR FUTURE CAREERS: HOW CIVIC ENGAGEMENT HELPS YOUTH BUILD THEIR PROFESSIONAL FUTURE

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Abstract: *Volunteering is often viewed as a noble act of giving back to the community. However, it also serves as a powerful platform for personal and professional development. This article explores how civic engagement through volunteering influences the future careers of young individuals, focusing on sociological and psychological scales used to measure the impact on 55 students from the Orthodox Theological Seminary in Arad, specifically 11th and 12th graders. The findings reveal significant benefits in skill development, social capital, and career orientation.*

Key words: *volunteering, civic engagement; career development; youth; social capital; skill development; professional growth; orthodox theological seminary; sociological scales; psychological scales.*

Introduction

In an increasingly competitive job market, young people are looking for ways to distinguish themselves. Volunteering has emerged as a valuable avenue for developing skills, gaining experience, and building networks. This paper investigates the role of volunteering in shaping future career paths for youth, with a specific focus on students from the Orthodox Theological Seminary in Arad.

Literature Review

The literature on volunteering highlights its dual impact: personal growth and societal benefit. Scholars like Wilson and Musick (1999) emphasize that volunteering enhances social and human capital. Additionally, Clary et al. (1998) discuss the functional approach to volunteer motivations, linking personal and professional benefits to civic engagement.

Methodology

A mixed-method approach was used to assess the impact of volunteering on the students. Quantitative data were collected using sociological and

psychological scales, including the Volunteer Functions Inventory (VFI) and the Career Decision Self-Efficacy Scale (CDSES). Qualitative data were gathered through focus group discussions and interviews.

Description of Scales

1. **Volunteer Functions Inventory (VFI)** The VFI, developed by Clary et al. (1998), is a tool used to assess the motivations behind volunteering. It consists of six functional motives:
 - **Values:** Expressing altruistic and humanitarian values.
 - **Understanding:** Gaining knowledge and learning through experience.
 - **Social:** Strengthening social relationships.
 - **Career:** Gaining career-related experience.
 - **Protective:** Reducing negative feelings or addressing personal problems.
 - **Enhancement:** Enhancing personal growth and self-esteem. Each motive is measured through a series of questions, allowing researchers to determine the primary drivers for volunteer engagement.
2. **Career Decision Self-Efficacy Scale (CDSES)** The CDSES, developed by Taylor and Betz (1983), measures an individual's confidence in their ability to successfully make career-related decisions. It focuses on five areas:
 - **Self-Appraisal:** Assessing one's abilities and interests.
 - **Occupational Information:** Gathering information about different careers.
 - **Goal Selection:** Setting realistic and appropriate career goals.
 - **Planning:** Developing a plan to achieve career goals.
 - **Problem Solving:** Overcoming obstacles related to career decisions. The scale uses a Likert-type format where respondents rate their confidence in performing various career-related tasks.

Results

The analysis of the data collected from 55 students revealed several key findings:

1. **Skill Development:** Students reported significant improvements in soft skills such as communication, teamwork, and problem-solving.
2. **Social Capital:** Participation in volunteering activities expanded their social networks, providing mentorship opportunities and professional contacts.

3. **Career Orientation:** Many students indicated a clearer understanding of their career goals and increased confidence in their career decision-making abilities.

Discussion

The findings align with existing literature, which underscores the role of volunteering in career development. The sociological and psychological scales used in this study confirm that volunteering provides practical benefits that extend beyond altruism. For instance, the VFI highlighted that students were motivated by both altruistic and career-oriented reasons.

The Role of Schools in Promoting Volunteering: The Case of the Orthodox Theological Seminary of Arad

Education systems have long been recognized as critical platforms for fostering social values and civic engagement. Schools do not merely serve as institutions for academic instruction but are also instrumental in shaping the character and social responsibility of their students (Dewey, 1938). Among these, the Orthodox Theological Seminary of Arad exemplifies the unique role that faith-based educational institutions play in promoting volunteerism as a core value. One of the primary objectives of the Orthodox Theological Seminary is to instill a sense of altruism and community service in its students. Drawing from Christian teachings, the seminary emphasizes the importance of serving others as an expression of faith and moral duty. According to Smith and Davidson (2014), religious institutions often provide a framework for volunteerism that integrates spiritual growth with practical community engagement. The seminary's curriculum incorporates theological reflections on service, inspiring students to view volunteering not just as an act of charity but as a fundamental aspect of their personal and spiritual development.

To translate values into action, the Orthodox Theological Seminary of Arad offers structured volunteering programs. These initiatives range from organizing food drives for underprivileged families to providing mentorship for younger students in local schools. Such programs align with findings from Clary et al. (1998), who argue that volunteering opportunities integrated into educational environments are more likely to cultivate long-term engagement. By participating in these activities, students develop practical skills such as teamwork, leadership, and problem-solving, which further reinforce their commitment to civic responsibility.

The seminary's approach also emphasizes the role of volunteering in strengthening social networks. Through collaborative projects, students build relationships with peers, faculty, and community members,

fostering a sense of belonging and shared purpose. Putnam (2000) highlights the importance of social capital—the networks and relationships that facilitate cooperation and mutual support—as a critical outcome of civic engagement. In the context of the seminary, these bonds not only enrich the students' educational experience but also prepare them to become active and connected members of society.

Beyond its immediate social and spiritual benefits, the seminary's focus on volunteering also supports students' career aspirations. Many initiatives are designed to align with career-related skills, such as communication and project management, which are increasingly valued in the job market (Astin & Sax, 1998). For example, students involved in organizing community events gain experience in planning and logistics, which can be directly applied in professional contexts. This dual focus on personal growth and career readiness underscores the seminary's holistic approach to education. The success of the Orthodox Theological Seminary of Arad in promoting volunteering highlights the potential for educational institutions to play a transformative role in society. By integrating values-based education with practical opportunities for engagement, the seminary provides a model for fostering a culture of service that extends beyond the classroom. As education policy increasingly emphasizes the importance of social-emotional learning and civic responsibility (OECD, 2018), the seminary's approach offers valuable insights for schools worldwide.

Future Professional Opportunities

Volunteering serves as a significant platform for skill acquisition and professional development, particularly for students at the Orthodox Theological Seminary in Arad. (Wilson & Musick, 1999). Engaging in civic activities allows youth to develop both hard and soft skills, which are highly valued in the job market. This chapter delves into the types of skills gained through volunteering and how they contribute to career readiness. One of the primary benefits of volunteering is the enhancement of soft skills such as communication, teamwork, and leadership. (Clary et al., 1998). Students participating in volunteer programs frequently report improvements in these areas due to their interactions with diverse groups and the necessity to collaborate effectively.

For example, organizing community events or participating in outreach programs helps students improve their public speaking and interpersonal skills. These experiences are crucial for career paths in theology, education, and beyond, where effective communication and collaboration are essential. Beyond soft skills, volunteering also offers opportunities to acquire hard skills and technical expertise. Tasks such as managing budgets, organizing logistics, or utilizing specific software

tools during volunteer projects provide practical experience that can be directly applied in professional settings. For instance, students who volunteer with the Association of Orthodox Christians in Romania, Arad branch, often engage in administrative tasks, event planning, and educational programming, all of which contribute to their technical skill set. (Taylor & Betz, 1983).

The combination of soft and hard skills gained through volunteering enhances overall career readiness. By applying these skills in real-world contexts, students gain a competitive edge in the job market. The experiences they accumulate not only bolster their resumes but also provide concrete examples to discuss during job interviews, demonstrating their capability and initiative. Social capital and networking are critical components of career development. Volunteering enables students to build relationships with peers, mentors, and professionals, which can significantly impact their career trajectories. (Wilson & Musick, 1999). This chapter explores how volunteering fosters these connections and the long-term benefits of such networks. Through volunteering, students interact with a variety of individuals, including community leaders, professionals in their field, and fellow volunteers. These interactions often lead to the formation of valuable professional networks.

The Association of Orthodox Christians in Romania provides a prime example of this. Students who volunteer with the association have the opportunity to meet and work with established theologians, educators, and community organizers. These connections often result in mentorships and recommendations that are invaluable when seeking employment or further educational opportunities. (Clary et al., 1998).

Mentorship is a key benefit of the networking opportunities provided by volunteering. Experienced professionals who oversee volunteer projects often take on mentorship roles, offering guidance, feedback, and support to young volunteers. This relationship helps students navigate their career paths more effectively, providing insights into their chosen fields and helping them avoid common pitfalls. The relationships built through volunteering can lead to long-term career benefits. Networking often results in job offers, internships, and other professional opportunities. Additionally, the social capital accumulated through volunteering enhances students' reputations within their communities and professional circles, making them more attractive candidates for future roles.

Volunteering provides a unique platform for career exploration and goal setting. It allows students to gain firsthand experience in various fields, helping them identify their interests and strengths. (Taylor & Betz, 1983). This chapter examines how volunteering aids in career exploration and the establishment of clear career goals. Volunteering

exposes students to a range of professional environments and roles, offering a clearer understanding of potential career paths. By engaging in diverse activities, students can explore different fields, gaining insights into what aligns with their interests and skills. For instance, students at the Orthodox Theological Seminary who volunteer in educational programs may discover a passion for teaching, while those involved in community outreach might be drawn to social work or nonprofit management.

Through hands-on experience, students can better assess their career goals. Volunteering helps them understand the practical aspects of various professions, allowing them to set realistic and informed career objectives. (Clary et al., 1998). The reflective nature of volunteer work also encourages students to consider their long-term aspirations and the steps needed to achieve them. The experiences gained through volunteering bolster students' confidence in their career decisions. As they acquire new skills, overcome challenges, and achieve tangible results, their self-efficacy in career-related tasks increases. (Taylor & Betz, 1983). This confidence is reflected in their ability to set ambitious goals and pursue them with determination.

Volunteering offers a multitude of professional opportunities for young individuals. Students who engage in volunteering often develop a diverse skill set, which makes them attractive candidates in various fields. Beyond skill development, volunteering facilitates access to professional networks and mentorships that can lead to internships, job offers, and career advancements. One significant example is the impact of volunteering through the Association of Orthodox Christians in Romania, Arad branch. Many of the students from the Orthodox Theological Seminary who were involved with this association have successfully transitioned into professional roles in theology and education. The association provided structured volunteering opportunities that allowed students to gain hands-on experience, develop leadership skills, and foster a sense of community service. These experiences have proven instrumental in their career trajectories, with many now holding esteemed positions as educators and theologians. The practical skills and networks gained through their volunteering efforts have laid a solid foundation for their professional success. This highlights the long-term benefits of integrating volunteering into the educational journey, preparing students not just for immediate job prospects, but for sustained career growth.

Volunteering and Social Inclusion

Social inclusion is a crucial aspect of modern societies, focusing on providing equal opportunities and breaking down barriers that exclude individuals or groups from fully participating in economic, social, and

cultural life. Volunteering plays a pivotal role in fostering social inclusion, creating a more equitable and cohesive society. This chapter explores how volunteering contributes to social inclusion through building bridges across communities, empowering marginalized individuals, and fostering a sense of belonging. Volunteering initiatives often bring together people from diverse backgrounds, fostering interactions that might not occur otherwise (Putnam, 2000). These interactions help dismantle stereotypes, reduce prejudice, and build mutual understanding. For instance, community projects involving diverse cultural groups allow participants to share their experiences, traditions, and values, promoting cultural exchange and tolerance (Auld & Cuskelly, 2001).

By encouraging collaboration, volunteering creates opportunities for meaningful connections, bridging the gap between different social, ethnic, or economic groups. For example, programs that pair local volunteers with refugees or migrants can help newcomers integrate into society while providing the local community with a broader perspective. Volunteering empowers marginalized individuals by providing them with a platform to contribute and showcase their abilities (Wilson, 2000). Often, people facing challenges such as unemployment, disabilities, or social discrimination feel excluded from society. Volunteering offers them opportunities to develop skills, gain confidence, and build social networks.

For example, initiatives that involve people with disabilities in community service projects highlight their capabilities and potential, challenging societal stereotypes (Grönlund, 2011). Similarly, volunteering can help unemployed individuals gain valuable work experience, improving their employability and self-esteem. Engaging in volunteer activities fosters a sense of belonging and purpose for individuals who might otherwise feel isolated. Social isolation is a significant issue for groups such as the elderly, single parents, or those living in poverty. Participating in volunteering projects connects individuals with their communities and helps combat loneliness (Cattan et al., 2005).

Moreover, volunteering allows individuals to contribute to causes they care about, reinforcing their sense of purpose. For example, environmental clean-up projects not only improve local surroundings but also give volunteers a shared mission, creating a strong sense of camaraderie and collective achievement. Volunteering initiatives often focus on addressing inequalities and advocating for social justice. Whether it is through food banks, educational programs, or healthcare initiatives, volunteers work to ensure that basic rights and services are accessible to all, regardless of socioeconomic status (Handy & Srinivasan, 2004). Such efforts help reduce disparities and enable

disadvantaged individuals to participate more fully in society. For example, literacy programs run by volunteers provide educational opportunities to underserved populations, empowering them to break the cycle of poverty and exclusion. These programs not only uplift individuals but also contribute to a more inclusive and equitable society. Volunteers often play a role in advocating for inclusive policies by raising awareness of social issues and engaging in grassroots activism. Their on-the-ground experiences provide valuable insights that can inform policymakers and drive systemic change. For instance, volunteer organizations working with homeless populations can highlight the root causes of homelessness and propose targeted interventions to address them (Cloke et al., 2010). By amplifying the voices of marginalized communities, volunteering helps to shape policies that promote inclusivity and equal opportunities for all.

Conclusion

Volunteering acts as a bridge between education and the professional world, offering young people a platform to acquire essential skills and build valuable networks. For the students at the Orthodox Theological Seminary in Arad, these experiences have proven instrumental in shaping their future careers. By participating in volunteer activities, students not only enhance their personal and professional skill sets but also expand their social capital, which is crucial for career advancement. This study underscores the importance of integrating volunteering into educational curricula to maximize its benefits for youth development. The findings suggest that educational institutions should actively promote and facilitate volunteering opportunities as part of their programs. Doing so will provide students with experiential learning that complements academic knowledge, thereby preparing them for the challenges of the job market. Furthermore, fostering a culture of civic engagement within educational settings can cultivate a generation of socially responsible and professionally competent individuals, ultimately contributing to both personal success and community well-being.

References

- Astin, A. W., & Sax, L. J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development*, 39(3), 251-263.
- Auld, C., & Cuskelly, G. (2001). Volunteer Management in Nonprofit Organizations: A Critical Review. *Australian Journal on Volunteering*, 6(1), 21-26.
- Cattan, M., White, M., Bond, J., & Learmouth, A. (2005). Preventing social isolation and loneliness among older people: A systematic

- review of health promotion interventions. *Ageing and Society*, 25(1), 41–67. <https://doi.org/10.1017/S0144686X04002594>
- Clary, E. G., Snyder, M., Ridge, R. D., Copeland, J., Stukas, A. A., Haugen, J., & Miene, P. (1998). Understanding and Assessing the Motivations of Volunteers: A Functional Approach. *Journal of Personality and Social Psychology*, 74(6), 1516-1530.
- Cloke, P., May, J., & Johnsen, S. (2010). *Swept Up Lives? Re-envisioning the Homeless City*. Wiley-Blackwell.
- Cnaan, R. A., Smith, K. A., Holmes, K., Haski-Leventhal, D., & Handy, F. (2010). Motivations and Benefits of Student Volunteering: Comparing Regular, Occasional, and Non-Volunteers in Five Countries. *Canadian Journal of Nonprofit and Social Economy Research*, 1(1), 65-81.
- Dekker, P., & Halman, L. (Eds.). (2003). *The Values of Volunteering: Cross-Cultural Perspectives*. Springer.
- Grönlund, H. (2011). Identity and Volunteering Intertwined: Reflections on the Values of Young Adults. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 22(4), 852–874. <https://doi.org/10.1007/s11266-011-9184-6>
- Handy, F., & Srinivasan, N. (2004). Valuing Volunteers: An Economic Evaluation of the Net Benefits of Hospital Volunteers. *Nonprofit and Voluntary Sector Quarterly*, 33(1), 28–54. <https://doi.org/10.1177/0899764003260961>
- Holdsworth, C. (2010). Why Volunteer? Understanding Motivations for Student Volunteering. *British Journal of Educational Studies*, 58(4), 421-437.
- Musick, M. A., & Wilson, J. (2008). *Volunteers: A Social Profile*. Indiana University Press.
- OECD. (2018). *The future of education and skills: Education 2030*. OECD Publishing. <https://www.oecd.org/education/2030/>
- Putnam, R. D. (2000). *Bowling Alone: The Collapse and Revival of American Community*. Simon & Schuster.
- Smith, C., & Davidson, H. (2014). *The Paradox of Generosity: Giving We Receive, Grasping We Lose*. Oxford University Press.
- Wilson, J., & Musick, M. A. (1999). The Effects of Volunteering on the Volunteer. *Law and Contemporary Problems*, 62(4), 141-168.

IMPROVING QUALITY OF LIFE THROUGH VIRTUAL REALITY: EMOTIONAL REGULATION IN ADULTS WITH INTELLECTUAL DISABILITIES USING THE LIMINAL VR PLATFORM

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Abstract: *This research paper aims to explore the integration of the virtual reality (VR) along with the emotional journaling in order to improve emotional regulation and also to reduce the self-harming behaviors in a participant with severe intellectual disabilities (American Psychiatric Association, 2013). The intervention included three sessions using the Cosmic Flow Scenario on the Liminal VR (ArborXR, n.d.) platform together with daily emotional journaling based on Paul Ekman's universal emotions (Ekman, n.d.). The results highlighted major improvements in emotional self-regulation, reflected in an increased Emotional Balance Coefficient from 0.75 to 2.5 and the termination of self-harming behaviors. The observations underscore the potential of VR interventions in social work, emphasizing their scalability for broader application, in spite of the challenges such as costs and accessibility. Future research is needed to investigate long-term impacts and group-based implementations (Yalon-Chamovitz & Weiss, 2008).*

Key words: *social work, virtual reality, Liminal VR, self-aggression, quality of life, mentally disabled adult.*

Introduction

Virtual reality (VR) has rapidly evolved from an entertainment environment to a valuable instrument for therapeutic and educational interventions, proving a significant potential in approaching various psychological and behavioral issues (Chalkiadakis et al., 2024). In mental health care, VR has been widely utilized for treating anxiety disorders, PTSD and phobias through controlled exposure and

immersive environments. (Perandré & Haydu, 2018). These applications are based on VR's unique ability to simulate real-life scenarios in a safe, personalized and controlled setting, allowing individuals to confront their emotional challenges at their own pace (Hamzah et al., 2024).

Although VR has demonstrated success in psychotherapy, its usage in social work remains underexplored (Cheung et al., 2022). Social work focuses on holistic approach and behavioral interventions intended for vulnerable populations, including individuals with intellectual disabilities. These beneficiaries commonly experience emotional dysregulation, by displaying maladaptive behaviors such as self-harm, aggression, or social withdrawal. Institutionalized settings amplify these challenges, offering limited opportunities for emotional expression and self-regulation (Littlewood, Dagnan, & Rodgers, 2018).

This study aims to bridge the gap by sifting through the way VR combined with simple tools like emotional journaling, can support emotional regulation and enhance the quality of life for adults with intellectual disabilities (de Oliveira Malaquias & Malaquias, 2016). By focusing on both immediate emotional shifts and long-term behavioral improvements, this paper proposes to extend the application of VR beyond traditional therapy contexts into social work practice (Vita, Morra, & Rega, 2021).

Emotional journaling, especially when suited to the cognitive abilities of individuals with intellectual disabilities, offers a simple way to track emotional states. Utilizing emoji-based representations of Paul Ekman's universal emotions, (Ekman, n.d.) this tool provides accessibility and fosters self-awareness. The combination of journaling with VR allows a comprehensive approach, harnessing both the immediate and cumulative effects of the intervention.

Objectives of the Study

1. **Reducing Self-Harming Behaviors:** Self-harm behaviors such as self-mutilation, often serve as maladaptive coping mechanisms for emotional dysregulation (McClure, Halpern, Wolper, & Donahue, 2009). This study aims to evaluate how VR interventions, in particular, the Cosmic Flow scenario from Liminal VR, can reduce the frequency and severity of these behaviors by offering an alternative means of emotional relief and regulation.

2. **Enhancing Emotional Self-Regulation:** Emotional regulation is an essential ability for managing stress and negative emotions, such as fear, anger, and sadness (McClure, Halpern, Wolper, & Donahue, 2009). The immersive and calming environment of VR allows participants to experience and practice emotional regulation techniques, potentially fostering long-term improvements in managing challenging emotions.

3. **Integrating VR with Emotional Journaling:** Although VR offers an immediate emotional reset during sessions, journaling captures the daily emotional fluctuations between sessions. This study is questioning how combining VR with accessible instruments such as emoji-based journaling enhances emotional awareness, allowing participants to identify patterns and triggers for their emotional states.

4. **Improving Quality of Life:** Emotional dysregulation and self-harming behaviors negatively affect the overall quality of life, reducing social participation and well-being. By promoting emotional stability, this paper proposes to measure enhancements in psychological health, interpersonal relationships and participation in social activities.

Methodology

Participants : The study involved one adult beneficiary with mental disabilities residing in a social care center under the jurisdiction of DGASPC Arad. Participant (CL), is a 33-year-old adult with severe intellectual disability and autism spectrum disorder, exhibited significant challenges in emotional regulation, including frequent self-injurious behaviors. Despite these challenges, CL demonstrated the ability to participate in structured interventions. Informed consent was obtained from the participant's legal guardian.

Instruments:

1. Virtual Reality (VR) Technology

- Platform: Liminal VR, accessed through Meta Quest devices.
- Scenario: Cosmic Flow, designed to induce relaxation through immersive imagery and calming auditory stimuli. This scenario was chosen for its proven ability to reduce stress and promote a state of emotional balance.
- VR Metrics: Built-in psychometric assessments provided by the Liminal VR platform were used to measure the participant's emotional states before and after each session.

2. Emotional Journal

- A simplified daily emotional diary was used, adapted to the participant's cognitive abilities.
- Format: Emotions were represented using Paul Ekman's universal emotions (anger, disgust, fear, surprise, contempt, joy, sadness), accompanied by large emoji images for ease of understanding. The participant marked their emotional states using these emojis.
- Purpose: To capture participant self-reported emotional experiences between VR sessions and assess changes in emotional self-regulation over time.

Intervention design : Three weekly VR sessions were conducted using the Cosmic Flow scenario on the Liminal VR platform (Liminal VR, n.d.). Each session was supplemented with daily emotion journaling

using an emoji-based format tailored to the participant's cognitive abilities. The Emotional Balance Coefficient (EBC) was used as a metric for evaluating emotional tendencies. While Fredrickson's broaden-and-build theory highlights the importance of a 3:1 positive-to-negative emotion ratio for flourishing, the EBC used in this study is a tailored metric to capture shifts in emotional balance specific to the intervention's context. A coefficient above 1.0 indicates an emotional balance favorable to positive emotions.

Institutional Review Board: This research complied with the ethical standards indicated in the Declaration of Helsinki (1964) and its amendments, as well as the guidelines of the Ethics Committee of The General Directorate of Social Assistance and Child Protection of Arad, which approved the research protocol. The informed consent was obtained from the legal guardian of the participant, ensuring a clear understanding of this research's objectives, methodology, and potential benefits or risks.

Data Availability Statement: The data supporting the conclusions of this research include sensitive information and are therefore not publicly available. Anonymized data are available on request from the corresponding author, subject to approval by the Ethics Committee of The General Directorate of Social Assistance and Child Protection of Arad.

Conflicts of Interest: The authors declare no conflict of interest in regards to the publication of this study.

Acknowledgments: The authors want to express their gratitude to the staff and management of the General Directorate of Social Assistance and Child Protection, Arad, for their full support in facilitating this study. Also, gratitude goes towards the participant and their legal guardian for their trust and willingness to take part in this study.

Results

The results presented in the table provide clear information about the effectiveness of the virtual reality (VR) intervention and emotional journaling in promoting emotional regulation and reducing the participant's maladaptive behaviors.

[Insert Table 1 here]

Positive vs. negative emotions

- Week 1: The participant experienced three positive emotions (e.g., joy, surprise) and four negative emotions (e.g., anger, sadness, fear). The higher frequency of negative emotions in this week indicates an initial emotional dysregulation, consistent with the two self-harm incidents observed. The Emotional Balance Coefficient (EBC) of 0.75 confirms that negative emotions predominated, signaling emotional instability.

- Week 2: The participant showed significant improvement, with five positive emotions compared to two negative emotions. This change increased the EBC to 2.5, reflecting the predominance of positive emotions and marking the participant's most balanced emotional state during the intervention. It is important to note that self-harming behaviors completely ceased during this period.
- Week 3: Although positive emotions decreased to three and negative emotions increased to four, the participant maintained the absence of self-harming incidents. The EBC returned to 0.75, similar to Week 1, suggesting some emotional fluctuations. However, the lack of maladaptive behaviors indicates improved emotional regulation compared to baseline.

Emotional Balance Coefficient (EBC): The EBC provides a quantitative measure of emotional regulation by comparing the frequency of positive and negative emotions:

- The significant increase in EBC in Week 2 demonstrates the effectiveness of the intervention in shifting the participant's emotional states toward positivity.
- Although the EBC decreased in Week 3, the participant's emotional resilience was sufficient to sustain behavioral improvements, as indicated by the continued absence of self-harming incidents.

[Insert Figure 1 here]

[Insert Figure 2 here]

[Insert Figure 3 here]

[Insert Figure 4 here]

Key Findings

1. Positive Changes in Emotions: The intervention consistently increased positive emotions, with the most pronounced improvements observed in Week 2.
2. Reduction in Maladaptive Behaviors: The elimination of self-harming behaviors highlights the combined effectiveness of VR and journaling in supporting emotional regulation.
3. Sustained Impact: Despite emotional fluctuations in Week 3, the participant maintained improved behaviors, indicating the intervention's potential for long-term benefits.

Liminal VR Evaluation Results: The data from the Liminal VR evaluation instruments provide clear evidence of the intervention's ability to reduce negative emotions, encourage positive emotional states, and support emotional regulation over the long term.

[Insert Table 2 here]

Interpretation of the Mean Likert Scores

The mean Likert scores obtained from the VR intervention sessions provide insights into the emotional changes experienced by the participant. Here is the interpretation of the results:

Session 1:

- Pre-VR Emotion: Fear (3/5)
- Post-VR Emotion: Excitement (5/5)
- Mean Likert Score: 4.0
- Interpretation: The participant began the first session with a moderate level of fear, likely reflecting initial anxiety about the unfamiliar VR environment. However, the intervention led to a significant emotional change, with the participant reporting excitement afterward. The mean score of 4.0 reflects this marked improvement in emotional state.

Session 2:

- Pre-VR Emotion: Calm (4/5)
- Post-VR Emotion: Calm (5/5)
- Mean Likert Score: 4.5
- Interpretation: The second session shows that the participant started in a positive emotional state (calm) and maintained it, with an increase to the maximum Likert score post-intervention. The mean score of 4.5 indicates consistent emotional regulation and highlights the calming effect of the VR scenario.

Session 3:

- Pre-VR Emotion: Calm (3/5)
- Post-VR Emotion: Enthusiasm (5/5)
- Mean Likert Score: 4.0
- Interpretation: The participant started this session with a moderate level of calm, slightly lower than in the previous session, possibly due to external stressors. However, the intervention was able to improve the participant's mood, resulting in a shift towards enthusiasm. The mean score of 4.0 demonstrates the effectiveness of the session in stimulating positive emotional changes.

[Insert Figure 5 here]

[Insert Figure 6 here]

Overall Perspectives

1. Consistent Positive Results:

- Across all sessions, the VR intervention effectively improved the participant's emotional state, moving from neutral or negative emotions (e.g., fear, moderate calm) to positive emotions (e.g., excitement, calm).

2. Sustained Emotional Regulation:

- The second session highlights the ability of VR to maintain and enhance an already positive emotional state, reflecting the participant's familiarity with the intervention.

3. VR Effectiveness:

- The mean Likert scores across sessions (4.0–4.5) indicate a consistent pattern of emotional improvement, highlighting the potential of VR as a therapeutic tool for emotion regulation in individuals with intellectual disabilities.

Limitations of Mean Scores:

- **Loss of Context:** Although mean scores provide a useful summary, they may obscure individual variations between pre- and post-VR emotional states.
- **Small Sample Size:** Results are based on a single participant, limiting generalizability.

These findings demonstrate the value of VR interventions in improving emotional regulation, although further research with a larger sample is needed to confirm these results.

Broader implications

- **Therapeutic integration:** These findings demonstrate the feasibility of using VR as a therapeutic tool in social work, particularly for people who experience difficulties with conventional interventions.
- **Rapid emotional changes:** VR's ability to rapidly induce positive emotional changes and support emotional regulation suggests that it could complement traditional therapeutic approaches by providing an immersive and interactive pathway for emotional support.

Discussion

The results align with Fredrickson's (2001) Broaden-and-Build Theory, which emphasizes the role of positive emotions in building resilience. Similar to findings from studies on anxiety and VR (Perandré & Haydu, 2018) this case demonstrates the potential of VR to support long-term emotional stability (Vita, Morra, & Rega, 2021)

Implications for Social Work Practice

1. **Scalability:** VR-based interventions can be scaled up to group settings, providing care centers with cost-effective tools for emotional regulation.
2. **Accessibility:** Simplified tools, such as emoji-based journaling, ensure inclusion of people with cognitive disabilities.
3. **Policy Integration:** Incorporating VR training into caregiver education programs can amplify its impact.

Limitations

1. **Small sample size:** This single case study limits the generalizability of the results.
2. **Resource dependency:** VR interventions require initial investments in equipment and training.
3. **Ethical concerns:** Safeguards are needed to protect participants with cognitive disabilities when using VR.

Future research directions

1. Diverse populations: Testing VR interventions across different demographics and disabilities.
2. Longitudinal impact: Assessing long-term effects over multiple years.
3. Cost-benefit analyses: Assessing the scalability of VR tools within social care budgets.

Conclusions

This study demonstrates that VR interventions, when combined with personalized tools such as emotional journaling, significantly improve emotional regulation and eliminate maladaptive behaviors in adults with intellectual disabilities. The emotional balance coefficient provides a robust metric for monitoring progress, and the results highlight the potential for VR to be scalable. Future research should address accessibility barriers and long-term effectiveness to expand its applicability in social care.

Appendix Tables

Week	Positive Emotions	Negative Emotions	Emotional Balance Coefficient	Self-Harming Incidents
Week 1	3	4	0.75	2
Week 2	5	2	2.5	0
Week 3	3	4	0.75	0

Table 1: Summary of Emotional Trends, Emotional Balance Coefficient, and Self-Harming Incidents Over Three Weeks

Session	Pre-VR Emotion (Likert)	Post-VR Emotion (Likert)	Mean Likert Score
1	Scared (3/5)	Excited (5/5)	4.0
2	Calm (4/5)	Calm (5/5)	4.5
3	Calm (3/5)	Excited (5/5)	4.0

Table 2: Liminal VR median pre and post VR intervention

Figures

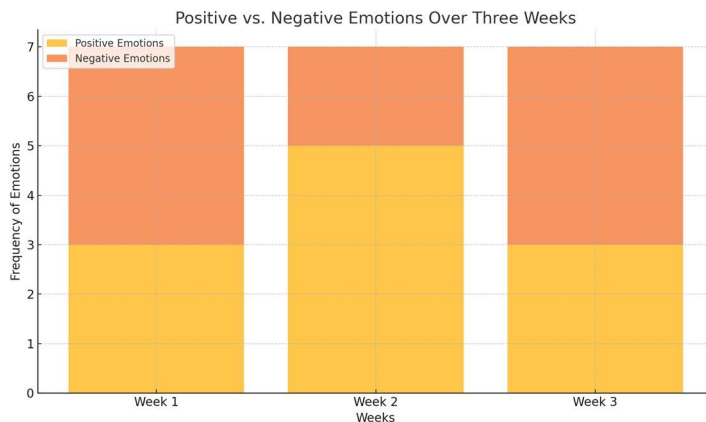


Figure 1: Proportional Distribution of Positive and Negative Emotions Over Three Weeks

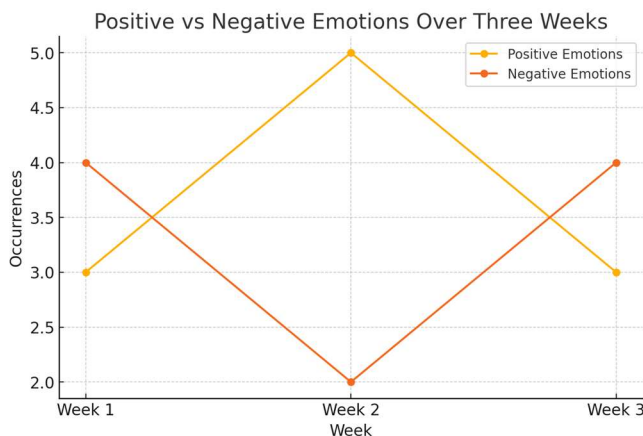


Figure 2: Trends in Positive and Negative Emotions Over Time

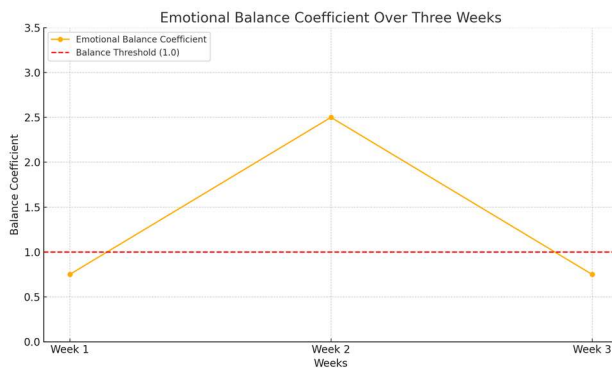


Figure 3. Emotional Balance Coefficient Over Three Weeks

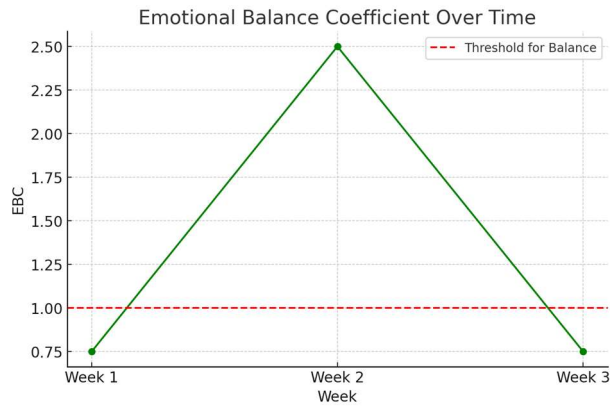


Figure 4. Emotional Balance Coefficient Over Time

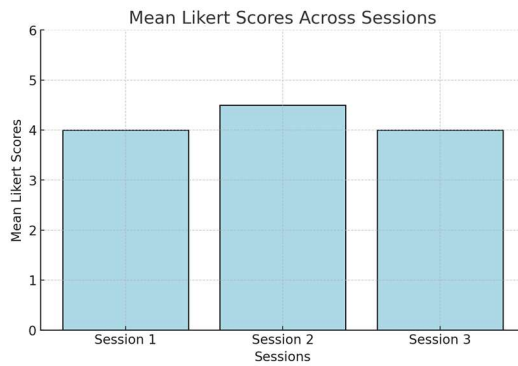


Figure 5. Mean Likert Scores

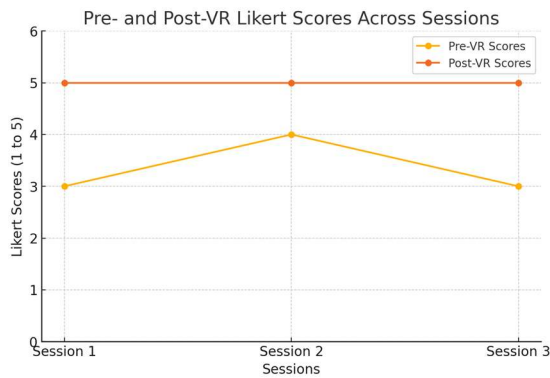


Figure 6. Pre and Post VR Likert Scores

References

American Psychiatric Association. (2013). Diagnostic and statistical manual of mental disorders (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
 ArborXR. (n.d.). Liminal VR. <https://arborxr.com/content-creator/liminal-vr/>

- Chalkiadakis, A., Seremetaki, A., Kanellou, A., Kallishi, M., Morfopoulou, A., Moraitaki, M., & Mastrokourou, S. (2024). Impact of artificial intelligence and virtual reality on educational inclusion: A systematic review of technologies supporting students with disabilities. *Education Sciences*, 14(11), 1223. <https://doi.org/10.3390/educsci14111223>
- Cheung, J. C.-W., Ni, M., Tam, A. Y.-C., Chan, T. T.-C., Cheung, A. K.-Y., Tsang, O. Y.-H., Yip, C.-B., Lam, W.-K., & Wong, D. W.-C. (2022). Virtual reality based multiple life skill training for intellectual disability: A multicenter randomized controlled trial. *Engineered Regeneration*, 3(2), 121–130. <https://doi.org/10.1016/j.engreg.2022.03.003>
- de Oliveira Malaquias, F. F., & Malaquias, R. F. (2016). The role of virtual reality in the learning process of individuals with intellectual disabilities. *Technology and Disability*, 28(4), 133–138. <https://doi.org/10.3233/TAD-160454>
- Ekman, P. (n.d.). Universal emotions. Paul Ekman Group. <https://www.paulekman.com/universal-emotions/>
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, 56(3), 218–226. <https://doi.org/10.1037/0003-066X.56.3.218>
- Hamzah, I., Salwana, E., Baghaei, N., Billinghamurst, M., & Arsad, A. (2024). Enhancing emotion regulation through virtual reality design framework for social-emotional learning (VRSEL). *International Journal of Advanced Computer Science and Applications*, 15(10), 264–273. <https://doi.org/10.14569/IJACSA.2024.0151029>
- Littlewood, M., Dagnan, D., & Rodgers, J. (2018). Exploring the emotion regulation strategies used by adults with intellectual disabilities. *International Journal of Developmental Disabilities*, 64(3), 193–204. <https://doi.org/10.1080/20473869.2018.1466510>
- Liminal VR. (n.d.). Home. <https://liminalvr.com/>
- McClure, K. S., Halpern, J., Wolper, P. A., & Donahue, J. P. (2009). Emotion regulation and intellectual disability. *Journal on Developmental Disabilities*, 15(2), 38–44.
- Perandré, Y. H. T., & Haydu, V. B. (2018). A treatment program for social anxiety disorder by using virtual reality. *Trends in Psychology*, 26(2), 851–866. <https://doi.org/10.9788/TP2018.2-12Pt>
- Vita, S., Morra, C., & Rega, A. (2021). Virtual reality and emotion regulation: A systematic review. In *Proceedings of the Third Symposium on Psychology-Based Technologies*

(PSYCHOBIT2021) (pp. 1–10). CEUR Workshop Proceedings.
<https://ceur-ws.org/Vol-3100/paper5.pdf>

Yalon-Chamovitz, S., & Weiss, P. L. (T.). (2008). Virtual reality as a leisure activity for young adults with physical and intellectual disabilities. *Research in Developmental Disabilities*, 29(3), 273–287. <https://doi.org/10.1016/j.ridd.2007.05.00>

MANAGING PSYCHOSOMATIC DISORDERS IN STUDENTS. THE ROLE OF THE SOCIAL WORKER IN IDENTIFYING FAMILY RISK FACTORS

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Abstract: *Ganong, Coleman (2014) summarizes the evidence to answer the question: why use qualitative family research? The authors mention only a few benefits of these studies, namely, exploring meanings, capturing relational processes. The study aims to highlight the importance of the complexity of the social worker's activity and the need to integrate psychological knowledge into professional practice, in order to improve the quality of social intervention. A case of psychosomatic disorder, selected through intentional qualitative sampling, very faithfully reflects a reality frequently encountered in school, namely that the school environment takes on the problems of the family and societal system through its students. The exploration of family relational processes, possible by integrating elements of family and child psychology, once again emphasizes the impact of the family environment on the child. The importance of providing the presence of social workers in schools, challenged to respond as documented, attentive and professional as possible to increasingly complex realities, is discussed.*

Key words: *psychosomatic disorders; students; school; school counselor; risk factors.*

The complexity of the issue in the school environment. The role of the social worker

In the educational environment, social workers and school counselors play an essential role in supporting students, not only from an educational, social, and emotional perspective but also in terms of mental health, as long as their intervention remains within the limits of their specialization (Lynn et al., 2009; Dupper, 2002; Bye et al., 2009). Knowledge of psychological elements, particularly psychosomatic manifestations in children, is crucial for the early identification of their difficulties and for appropriate intervention (Bibring, 1947; Lowrey, 1950). When faced with various mental health disorders and impairments, the social worker must be able to recognize them and use

concepts specific to the field of psychiatry. In such cases, their responsibility is to identify indicators of psychological dysfunction and to connect the child and their family with specialized services.

In the classroom, a child may exhibit psychosomatic manifestations, such as headaches, abdominal pain, chronic fatigue, or sleep disturbances without a clear medical cause. If unaware of the psychological implications, a teacher or even a social worker may mistakenly attribute these symptoms to a medical condition, leading to unnecessary medical treatment without addressing the underlying problem. In reality, psychosomatic disorders are an expression of emotional issues such as stress, anxiety, or depression. These symptoms are often ignored or mistaken for physical ailments, which can delay appropriate support.

Understanding these manifestations helps social workers:

- Recognize warning signs and distinguish psychosomatic symptoms from actual medical conditions;
- Intervene early through counseling and adequate support;
- Collaborate with mental health specialists to provide students with the most suitable resources and interventions.

The increasing incidence of children in schools at risk of developing psychosomatic disorders (Habukawa et al., 2022) is a strong argument for familiarizing school staff, including teachers, with these issues.

Psychosomatic disorders. Risk Factors

The term "psychosomatic" has been in use since 1818 when German psychiatrist Henroth introduced it in his studies. These conditions have since been studied in various contexts, leading to greater recognition and awareness of such manifestations, as well as improvements in mental health when appropriate interventions are made. Koić's (2004) study shows that hereditary factors (predisposition) and childhood fears, such as parental divorce, are significant determinants in the development of psychosomatic disorders. Family context, parenting style, historical background, parental expectations, and individual psychological traits are key ingredients in shaping a healthy adolescent who can adapt to unhealthy environments. Authors emphasize that in certain cultural contexts or authoritarian environments where sexual repression exists or freedom of thought, emotion, and behavior is inhibited, there is a higher risk of developing psychosomatic disorders.

Characteristics of Psychosomatic Individuals

Psychosomatic individuals are those who have difficulty expressing emotions and feelings, have a low level of imagination and creativity, and tend to be conventional. Other individual characteristics include a

lack of originality, a high level of adaptation to the environment at the expense of their well-being, which ultimately leads to psychosomatic reactions (Koić, 2004).

According to Greco (1993), the psychosomatic person maintains their "right to health" through biomedical sanctioning, essentially assuming the role of a sick person. Analyzing the nature of the mental content of psychosomatic patients, Nemiah & Sifneos (1970) discovered an unawareness of emotions, an inability to express feelings, and a lack of representation of their inner mental world. Psychosomatic disorders are more frequent in female relatives, with an incidence five to ten times higher than in male relatives (Koić, 2004).

Another context that facilitates the development of a psychosomatic profile is described by Minuchin et al. (1975): emotional enmeshment, total fusion, lack of intimacy, absence of personal boundaries, rigidity in interpersonal relationships, and avoidance of confrontation. Hurrelmann et al., (1988) confirms that school failure increases the frequency of psychosomatic disorders, both directly and indirectly, by amplifying family and social conflicts. The increased incidence of psychosomatic disorders in school children generated by family stress and school absenteeism has led to the implementation of projects in schools in Japan and the conduct of in-depth research in this regard (Tanaka et al., 2012).

Description of research design

The case study allows highlighting some dimensions of reality in an extremely convincing and valuable way (Miles and Huberman, 1994; Yin, 2011). In this case, the proposed case outlines a challenge frequently encountered in the work of the social worker, which has become increasingly complex and profound.

Purpose and Objectives

To highlight the complexity of social work in schools and the necessity of integrating psychological knowledge into professional practice to improve the quality of social intervention.

- To describe a common case encountered in the school environment and the importance of addressing it.
- To capture the relational processes within a family and explore them in order to understand the child's psychosomatic disorders.
- To highlight the impact of family emotional dynamics on the child's emotional management and the development of psychosomatic disorders.

Sampling and Method

A qualitative purposive sampling strategy was adopted, meaning that the case was selected due to its relevance to the study's purpose. Qualitative

research that employs case studies is a preferred method among family researchers, as it allows for capturing the dynamics of relationships, the meanings people assign to their family life, and an understanding of hidden processes. This, in turn, enables the identification of patterns and the provision of answers to complex situations (Manning & Kunkel, 2014).

Hypotheses

Basic psychological knowledge among social workers enables them to address diverse issues in the classroom and makes intervention more effective.

A family environment characterized by a combination of stressful factors, emotional neglect, conflicts, and tensions increases the likelihood of psychosomatic disorders in children.

Data collection and procedure

A case study was conducted, with consent forms signed beforehand. The intervention took place in 2024 between October and December, reflecting a concerning reality where children internalize their family's issues.

Description of case study

Claudia, a 13-year-old sixth-grade student, came to the attention of the school counselor after her mother informed the homeroom teacher of her daughter's need for counseling, following a doctor's suggestion.

She complained of back pain for several days, and one morning, she felt unable to stand up. She was taken to the hospital, where she underwent all necessary medical investigations, including neurological tests. No abnormal results were found, prompting her parents to seek further medical evaluations, all of which also yielded no definitive answers. Eventually, it was determined that Claudia's condition had a psychological origin—specifically, a psychosomatic disorder and she was recommended for counseling sessions.

Family Context

A complete anamnesis revealed several possible major stressors in Claudia's life. Her mother had moved abroad for work. Her father, a long-haul truck driver, was frequently absent. Claudia discovered that her father might have been involved in an extramarital relationship. Frightened, she told her mother, which triggered serious conflicts. The family was at risk of divorce, and Claudia felt intense guilt for having caused these events. Around the same time, she had a falling-out with her friends and found herself isolated. She felt abandoned and experienced overwhelming fear about her parents' separation. Several

risk factors for psychosomatic disorder were identified:

- The burden she carried, which she felt unable to communicate to anyone.
- Her need to protect her mother, which led her to hide her own suffering.
- Guilt over exposing her father's possible affair.
- A melancholic temperament, introversion, difficulty communicating, and a tendency to internalize frustrations.
- A fragile physical constitution.

Intervention

Four counseling sessions were required to restore mobility. However, Claudia requested to continue the counseling process, which helped her gain a deeper understanding of herself and find answers to many of her concerns. The sessions followed the classical stages of counseling. The first two sessions were conducted with Claudia, who demonstrated a great willingness to talk about her struggles. The meanings she assigned to the major problems she had identified were explored, along with the emotions each of them triggered in her: stress, guilt, lack of support, the need to protect her mother, and anger toward her father. Claudia became aware of the connection between these unexpressed emotions and the way her body internalized them. Later, her mother joined the process and became involved in the counseling sessions. She was guided to understand her daughter's perspective. The social worker assisted both of them in expressing their needs and repositioning themselves regarding the family conflict. The mother was also provided with an explanation of the mechanisms through which post-traumatic disorders develop.

Through this process, the mother came to understand the impact that the family environment can have on a child and the importance of ensuring an empathetic and understanding atmosphere in which her daughter could feel free to express her emotional needs.

Discussions

Both hypotheses were confirmed. The tense family environment, lack of support, feelings of guilt expressed by the client, and the disappointment of losing a friendship created a risk factor for the child's overall health. Claudia met all the criteria for the onset of psychosomatic symptoms. On the other hand, in the absence of solid knowledge about the signals the body can send in response to psychological distress, Claudia's case could have been mistaken for a strictly medical issue. The actual intervention falls within the responsibilities of the school specialist, in this case, the social worker or school counselor.

Understanding family relationship dynamics is the foundation of

psychosocial interventions and requires continuous updating in line with the latest discoveries in the field.

Conclusions

The complexity of social problems in schools has become undeniable. However, the coverage of this issue remains insufficient due to the limited number of school counselors, social workers, and psychologists available to handle cases involving behavioral disorders, bullying, addictions, maladjustment, and psychosomatic disorders. As we have stated in previous works, the role of a social worker involves possessing a set of knowledge in the field of psychology. Without such knowledge, it is nearly impossible to understand and accurately identify the specific characteristics of each case. Therefore, we emphasize the need to supplement the training of social workers with psychological elements that would enable them to approach their work in a more professional and effective manner. This paper aims to draw attention to the importance of early detection of children at increased risk of psychosomatic disorders in order to prevent worsening of their health status.

Limitations and future Directions

The presentation of a single case study may be considered a limitation of this research. Future studies should explore a broader range of issues within the school environment to develop a more comprehensive body of knowledge that can contribute to improving the quality of social workers' professional interventions.

References

- Bibring, G. L. (1947). Psychiatry and social work. *The Journal of Social Casework*, 28(6), 203-211.
- Bye, L., Shepard, M., Partridge, J., & Alvarez, M. (2009). School social work outcomes: Perspectives of school social workers and school administrators. *Children & schools*, 31(2), 97-108.
- Dupper, D. (2002). *School social work: Skills and interventions for effective practice*. John Wiley & Sons.
- Ganong, L., & Coleman, M. (2014). Qualitative research on family relationships. *Journal of Social and Personal Relationships*, 31(4), 451-459. <https://doi.org/10.1177/0265407514520828>
- Greco, M. (1993). Psychosomatic subjects and the 'duty to be well'. *Personal agency within. Economy and society*, 22(3), 357-372.
- Habukawa, C., Nagamitsu, S., Koyanagi, K., Nishikii, Y., Yanagimoto, Y., Yoshida, S., ... & Murakami, K. (2022). Early intervention for psychosomatic symptoms of adolescents in school checkup. *Pediatrics International*, 64(1), e15117.

- Hurrelmann, K., Engel, U., Holler, B., & Nordlohne, E. (1988). Failure in school, family conflicts, and psychosomatic disorders in adolescence. *Journal of Adolescence*, 11(3), 237-249.
- Koiaë, O. (2004). Psychosomatic disorders in secondary school students in Osijek. *Acta clin Croat*, 43(3), 257.
- Lowrey, L. G. (1950). *Psychiatry for social workers*. Columbia University Press.
- Lynn Bye, Melanie Shepard, Jamie Partridge, Michelle Alvarez, School Social Work Outcomes: Perspectives of School Social Workers and School Administrators, *Children & Schools*, Volume 31, Issue 2, April 2009, Pages 97–108, <https://doi.org/10.1093/cs/31.2.97>
- Manning, J., & Kunkel, A. (2014). Making meaning of meaning-making research: Using qualitative research for studies of social and personal relationships. *Journal of social and personal relationships*, 31(4), 433-441.
- Nemiah, J. C., & Sifneos, P. E. (1970). Psychosomatic illness: a problem in communication. *Psychotherapy and psychosomatics*, 18(1-6), 154-160.
- Tanaka, H., Terashima, S., Borres, M. P., & Thulesius, O. (2012). Psychosomatic problems and countermeasures in Japanese children and adolescents. *BioPsychoSocial Medicine*, 6, 1-5.

MEANS OF TRANSFORMATION OF TRADITIONAL TEACHING METHODS AND INNOVATION FOSTERING THROUGH OUTDOOR EDUCATION AND NON-FORMAL ACTIVITIES

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Abstract: *Outdoor education and non-formal activities represent transformative approaches in modern pedagogy, significantly shifting traditional teaching paradigms and fostering innovation within educational systems. This brief research, explores the multifaceted benefits of integrating outdoor learning experiences into conventional educational frameworks. The study examines how outdoor education stimulates cognitive, emotional, and social development, thereby enhancing overall student engagement and achievement. By relocating the classroom environment to natural settings, educators can leverage the inherent curiosity and enthusiasm students exhibit towards nature, promoting experiential and inquiry-based learning. The research highlights several key areas where outdoor education drives innovation: curriculum design, instructional strategies, and assessment methods. It underscores the importance of curriculum flexibility to accommodate outdoor activities that align with educational standards while fostering critical thinking and problem-solving skills. The paper illustrates how innovative instructional strategies, such as project-based learning and interdisciplinary approaches, are effectively implemented in outdoor settings, encouraging collaboration, creativity, and deeper understanding of subject matter. Additionally, it addresses how alternative assessment methods, focusing on holistic and formative evaluation, provide a more comprehensive measure of student learning and development. Case studies from Romanian educational contexts are presented to demonstrate the successful application of outdoor education and its impact on student outcomes. These examples reveal that students not only perform better academically but also develop essential life skills such as resilience, adaptability, and environmental stewardship.*

The paper also discusses the challenges and barriers to implementing outdoor education in the Romanian formal educational system, including logistical, financial, and safety concerns, and proposes practical solutions to overcome these obstacles. The paper advocates for a paradigm shift towards incorporating outdoor education as a core component of the educational experience. It argues that by embracing the natural environment as an extension of the classroom, educators can cultivate a more dynamic, engaging, and innovative learning experience. This transformation has the potential to revolutionize traditional educational practices, preparing students to thrive in an increasingly complex and interconnected world. The findings emphasize the need for ongoing research and policy support to sustain and expand outdoor education initiatives, ensuring that all students have the opportunity to benefit from this enriching educational approach.

Key words: *outdoor education; experiential learning; curriculum innovation; student engagement; interdisciplinary approaches; holistic assessment.*

Introduction

In recent years, the role of outdoor education has gained significant attention as a transformative approach in modern pedagogy. Traditional educational models, which predominantly rely on classroom-based instruction, are increasingly being challenged by innovative methodologies that emphasize experiential and inquiry-based learning. Outdoor education and non-formal activities represent a paradigm shift in teaching strategies, fostering deeper student engagement and enhancing cognitive, emotional, and social development. As educational institutions seek to integrate novel pedagogical approaches, the incorporation of outdoor learning experiences has emerged as a promising strategy to enhance educational outcomes. (Dowdell et al, 2011)

Outdoor education offers a dynamic and immersive learning environment that leverages students' innate curiosity and enthusiasm for nature. By transitioning the learning space beyond the confines of traditional classrooms, educators can cultivate an environment that promotes critical thinking, creativity, collaboration, and problem-solving skills. Research has shown that outdoor learning experiences contribute to improved student performance, higher retention rates, and the development of essential life skills, including resilience, adaptability, and environmental stewardship. Furthermore, these experiences facilitate interdisciplinary learning, encouraging students to

draw connections between various subjects through hands-on exploration. (Wattchow & Brown, 2011)

The integration of outdoor education into conventional educational frameworks necessitates a reevaluation of curriculum design, instructional strategies, and assessment methods. Traditional curricula often lack the flexibility required to accommodate outdoor learning activities, making it imperative for educational institutions to adopt adaptable frameworks that align with academic standards while embracing experiential learning. (Dughi & Bold, 2021) Innovative instructional strategies, such as project-based learning and interdisciplinary teaching, can be effectively implemented in outdoor settings, allowing students to engage with real-world challenges in meaningful ways. Additionally, alternative assessment methods, including formative and holistic evaluations, provide a comprehensive measure of student progress beyond standardized testing. (Priest, 1986; Gilbertson et al, 2022; Egerău, 2020)

This article explores the multifaceted benefits of outdoor education, with a particular focus on its application within the Romanian educational context. Through an analysis of case studies, the study examines successful implementations of outdoor learning experiences and their impact on student achievement. Moreover, the challenges and barriers associated with integrating outdoor education—such as logistical constraints, financial limitations, and safety concerns—are addressed, alongside practical solutions to facilitate its adoption. (Dughi et al, 2024)

By advocating for outdoor education as a core component of modern pedagogy, this paper aims to underscore its potential to revolutionize traditional teaching methodologies. The findings highlight the necessity for continued research, policy support, and institutional commitment to sustain and expand outdoor education initiatives. Ultimately, embracing the natural environment as an extension of the classroom presents an opportunity to create a more engaging, innovative, and effective educational experience that prepares students for the complexities of an interconnected world.

Recent perspectives

The contemporary landscape of education has increasingly recognized the significance of outdoor education and non-formal activities in fostering holistic student development. Recent perspectives in pedagogical research emphasize that the integration of experiential and participatory learning models bridges the gap between theoretical knowledge and real-world application. Non-formal education, which encompasses structured yet flexible learning experiences beyond the traditional classroom, has been identified as a critical complement to

formal education, enhancing student engagement and skill acquisition. A key development in recent research is the shift towards interdisciplinary approaches that merge outdoor learning with subjects such as science, mathematics, and social studies. By applying hands-on learning experiences, students are encouraged to explore, experiment, and problem-solve in real-world contexts. This not only strengthens subject comprehension but also cultivates essential competencies such as teamwork, adaptability, and leadership. Additionally, advancements in digital technology have facilitated hybrid learning environments where outdoor and non-formal education are supported by digital tools, enhancing interactive learning and providing new opportunities for assessment and feedback. (Balaş, 2016; Roman, 2020)

Another emerging trend is the increased emphasis on social-emotional learning (SEL) through non-formal activities. Studies highlight that outdoor education fosters emotional resilience, self-confidence, and motivation by immersing students in environments that challenge and inspire them. Non-formal activities, such as team-based projects, environmental conservation initiatives, and community engagement programs, contribute to the development of empathy, cultural awareness, and responsible citizenship. (Tudor, 2013)

Furthermore, policy frameworks in various countries, including Romania, have started to recognize the value of integrating non-formal activities within formal curricula. Educational reforms are gradually incorporating guidelines that encourage schools to implement outdoor and experiential learning opportunities, aiming to balance academic performance with personal growth. However, challenges persist, including the need for teacher training, infrastructural support, and curriculum flexibility to accommodate these innovative approaches effectively. (Câmpean et al, 2024; Redeş, 2016)

Recent perspectives on outdoor education and non-formal activities underscore their transformative potential in modern pedagogy. By fostering experiential learning, interdisciplinary integration, and social-emotional development, these approaches provide a dynamic and enriched educational experience. As educational systems continue to evolve, embracing these methodologies can ensure that students are equipped with the skills and knowledge necessary to navigate an increasingly complex and interconnected world. (Roman & Balaş, 2010; Kelemen, 2007)

Research Framework

The research framework for this study is structured to systematically examine the transformative potential of outdoor education and non-formal activities in modern pedagogy. It is designed to address key research questions, objectives, methodologies, and expected outcomes

while maintaining scientific rigor and relevance for an esteemed educational journal.

Research Objectives

The main objectives of the research are presented as it follows:

- To analyze the impact of outdoor education on cognitive, emotional, and social development.
- To explore the role of non-formal activities in fostering critical thinking, creativity, and collaboration.
- To examine innovative instructional strategies that integrate outdoor and non-formal learning.
- To identify challenges and propose solutions for incorporating these methodologies into formal educational systems.
- To provide evidence-based recommendations for policy development and institutional implementation.

Methodology

The research design is based on mixed-methods approach combining qualitative and quantitative research. For the data collection stage we have used surveys, interviews with educators and students, case studies, and observational studies. The analysis techniques were also mixed ones, like thematic analysis for qualitative data and statistical analysis for quantitative findings. The study population was made of educators, students, and policymakers from selected Romanian educational institutions.

The expected outcomes of the research were:

- A comprehensive understanding of the benefits of outdoor education and non-formal activities.
- Evidence supporting the need for curriculum flexibility and innovative assessment methods.
- Identification of best practices for integrating outdoor learning within formal education.
- Policy recommendations to support the implementation of these methodologies on a larger scale.

Results

The study yielded compelling evidence supporting the integration of outdoor and non-formal learning into traditional education frameworks. Enhanced student engagement and motivation, because participants displayed a marked increase in enthusiasm for learning, demonstrating higher levels of curiosity and active participation during outdoor activities. Non-formal education environments contributed to reduced anxiety and increased intrinsic motivation among students. Also, there was improved academic performance, because students who engaged in

experiential learning activities exhibited higher retention rates and improved comprehension of complex subjects. A comparative analysis of test scores before and after implementation showed a significant academic improvement in science, mathematics, and humanities. It is important to mention also the development of critical thinking and problem-solving skills, due to hands-on learning experiences facilitated deeper cognitive processing, allowing students to approach challenges with innovative and analytical perspectives. Project-based learning within outdoor settings encouraged creativity and adaptability.

The next one to mention, was social and emotional growth. Findings revealed increased student confidence, teamwork, and leadership skills. Non-formal activities, particularly those requiring collaborative problem-solving, strengthened social bonds and improved communication skills among peers. Also, positive educator feedback, because teachers reported higher levels of student interaction and engagement, making lessons more dynamic and effective. Additionally, educators noted a decrease in behavioral issues and an increase in classroom participation following the integration of outdoor education methods. (Torkos & Coşarbă, 2023; Bocoş, 2002; Dughi & Cotră, 2014) There also has to be present the institutional challenges and solutions part, because while logistical and financial constraints were noted as barriers, schools that successfully integrated outdoor education employed creative strategies such as partnerships with local organizations, community engagement, and adaptable curriculum designs to overcome these challenges.

Discussion

The results underline the significant role of outdoor education and non-formal activities in fostering holistic student development. The study supports the argument that shifting educational practices towards experiential learning can yield lasting benefits, equipping students with the necessary skills to navigate an evolving global landscape. Policy reforms should emphasize the institutionalization of these methodologies by investing in teacher training, infrastructure, and curriculum adjustments that accommodate outdoor and non-formal learning experiences.

Conclusion

This research provides robust evidence that outdoor education and non-formal activities contribute to improved academic performance, heightened student engagement, and enhanced social-emotional development. By embracing these methodologies as fundamental components of the educational experience, educators and policymakers can create a more dynamic, inclusive, and effective learning

environment. Further studies should explore long-term impacts and strategies for scaling these approaches on a national and international level.

Recommendations

The main recommendations are to develop comprehensive teacher training programs to equip educators with the necessary skills for implementing outdoor education and to introduce flexible curricula that incorporate experiential and non-formal learning methodologies. It is also necessary to establish partnerships with local organizations to facilitate resource-sharing and logistical support for outdoor education and to implement policy changes to institutionalize outdoor and non-formal education within national educational frameworks. We also have to mention to conduct longitudinal studies to further analyze the impact and sustainability of these educational approaches.

References:

- Balaș, E. (2016). Educational Alternatives in the Romanian Education System. *Educația Plus*, 16(2), 304-316.
- Bocoș, M. (2002). Instruire interactivă. Repere pentru reflecție și acțiune, 45.
- Câmpean, A., Bocoș, M., Roman, A., Rad, D., Crișan, C., Maier, M., ... & Roman, C. E. (2024). Examining Teachers' Perception on the Impact of Positive Feedback on School Students. *Education Sciences*, 14(3), 257.
- Dowdell, K., Gray, T., & Malone, K. (2011). Nature and its influence on children's outdoor play. *Journal of Adventure Education and Outdoor Learning*, 11(2), 201-214.
- Dughi, D., & Bold, I. (2022). Language teaching and emotional intelligence developing at preschool age, through fairy tales and stories. *Journal Plus Education*, 31(2), 83-96.
- Dughi, T., Cotră, S. (2014). Child development trough bibliotherapy. *Journal Plus Education*, 10(1), 239-250.
- Dughi, T., Dughi, T., Juncu, M., (2024), Parental counseling and the education of children with special educational needs, Volumul VIII nr.2, Editura Universității „Aurel Vlaicu” Arad, ISSN 1842 – 6840, Agora online ISSN 2247/2401, pp.51-64
- Egerău, A. (2020). Opinions of future teachers regarding the implementation of new education in school. *Educația Plus*, 26(1), 394-402.
- Gilbertson, K., Ewert, A., Siklander, P., & Bates, T. (2022). Outdoor education: Methods and strategies. *Human Kinetics*.
- Kelemen, G. (2007). *Pedagogie preșcolară*. Editura Universității " Aurel Vlaicu.

- Priest, S. (1986). Redefining outdoor education: A matter of many relationships. *The Journal of environmental education*, 17(3), 13-15.
- Redeş, A. (2016). Collaborative learning and teaching in practice. *Educația Plus*, 16(2), 334-345.
- Roman, A. F., & Balaş, E. (2010). Strategii de instruire și evaluare. Editura Universității " Aurel Vlaicu".
- Roman, A. F. (2020). Development of educational relations with nonformal activities. *Educația Plus*, 26(1), 266-275.
- Torkos, H., Coşarbă, E. M. (2023). Outdoor education as an interface between traditional and modern learning approaches: a curriculum-based analysis at core curriculum stage in Romania. *Journal plus education*, 34(2).
- Tudor, S. L. (2013). Formal–non-formal–informal in education. *Procedia-Social and Behavioral Sciences*, 76, 821-826.
- Wattchow, B., & Brown, M. (2011). *A pedagogy of place: Outdoor education for a changing world*. Monash University Publishing.

SOCIAL INTEGRATION OF PEOPLE WITH DISABILITIES

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Abstract: *Social expulsion of people with disabilities represents a problem that is very frequently met in society, impairing their optimal attendance in the activities of the society in which they reside. According to speciality studies, to be a disabled person equates to isolation, discrimination, vulnerability and abuse aimed at their identity and self esteem (Glăvan, 2020). The main objective of any integrative activity is represented by a total inclusion of handicaped people. To reach that goal, it is necessary to resolve the social rejection received from society.*

Key words: *deficiency; disability; handicap; integration.*

Introduction

Persons with disabilities are those persons whose social environment, not adapted to their physical, sensory, mental and/or associated deficiencies, totally stops or reduces their access to equal opportunities in society, requiring protection measures in support of social integration and inclusion (Law no. 448/2006, Art. 2.1).

Social exclusion of persons with disabilities signifies not only poor material resources, but above all their difficulties or inability to actually assist in economic, social, political and cultural life, or even alienation and distancing from ordinary society.

Professor Calin Zamfir defines disability as a person’s disadvantage, as a result of a deficiency, or inability, that limits or prevents the total or partial performance of tasks considered normal for them, depending on age, gender, social, cultural factors (Zamfir, 1993).

The deficiency represents the medical aspect, representing the loss, anomaly, permanent or temporary disturbance anatomical or psychological structure and designates a pathological, functional, stable or long-lasting state that affects the ability to work, affecting the process

of adaptation and integration in the school environment, at work, in the community of which the person concerned is a member (Ponea, 2009). Disability is complex, dynamic, multidimensional and contested and most of the time, social barriers and stigmatization become decisive factors in the process of integration both in society and in the professional life of people with disabilities (Gavrila-Ardelean, 2016). Disability is an umbrella term for the degree of deterioration, limitation of activity, restrictions on the individual's participation and contextual factors in his or her life (Gavrila-Ardelean, 2022).

Inability means the loss, partial or total diminution of physical, mental or sensory possibilities, the consequence of a deficiency that prevents the normal performance of certain activities.

Disability results from a deficiency or handicap that limits the performance of a role in a social, cultural context, it stems from the relationship between a disabled person and their living environment, being highlighted when these persons encounter barriers, preventing access to social activities or services (Gherguț, 2006).

People with disabilities, aware of their own handicap, rebel and try to get rid of the label that follows their existence. Until the condition of a disabled person is accepted, their road is much longer than the rest of the people (Gavrila-Ardelean, 2021).

The experience of rejection is very painful, to be rejected because of who you are, to have the feeling that people are bypassing you because you have a particular race, nationality, religion, social class or disability, is a great destructive suffering. Even the rejection by unknown and unseen persons, or in situations without concrete stakes, of being ignored in any discussion, can cause disturbances in self-esteem (André, 2010).

The integration and inclusion of persons with disabilities are conditions of respect for the rights of every citizen, the fundamental principles that have changed the realities in the field of quality of life, education and integration of persons with disabilities in social life have as their foundational human rights.

Integration implies that relationships between individuals are based on a recognition of their integrity, values and common rights. The relationship that is established between the individual and society is the basis of integration, which is carried out on several levels, from simple to complex (Popovici, 1999): physical integration, functional integration, social integration, personal integration, integration into society, organizational integration.

The ultimate objective of social integration is, in fact, a total inclusion of people with disabilities, and in order to achieve this goal, it is necessary to solve the social rejection that these people face from society.

Research methodology

A review of the specialized literature on the topic of social integration of people with disabilities was carried out, in the historical context of Romania.

Research results

Challenges faced by people with disabilities

1. Accessibility of the physical environment – many people with disabilities face difficulties due to the lack of accessibility in public infrastructure (buildings, public transport, streets).
2. Discrimination and stereotypes – prejudice and misperceptions about disabilities can lead to social exclusion of these people from various fields, including education and employment.
3. Access to education – although legislation provides for access to education for persons with disabilities, in many cases schools are not adequately equipped and staff are not prepared to meet their special needs.
4. Employability – a majority of disabled people face prejudice when searching for a job due to lack of adaptability of employers and preconceptions about their capabilities.

Measures to promote social inclusion

1. Legislation and fundamental rights – the adoption and implementation of laws guaranteeing the rights of persons with special needs, such as the United Nations Convention on the Rights of persons with Disabilities, are essential to ensure their inclusion.
2. Accessibility of infrastructure – authorities must invest in adapting public buildings, transport and jobs to be accessible to people with disabilities by installing ramps, elevators and other facilities.
3. Inclusive education – schools must adopt educational methods adapted to the special needs of students with disabilities. They should focus on integrating them into regular schools with appropriate support (Gavrila-Ardelean & Gavrila-Ardelean, 2017).
4. Promoting employment for people with disabilities – employers should be encouraged to hire people with disabilities through financial incentives and policies to ensure an accessible and friendly working environment (Gavrila-Ardelean, 2017).
5. Public education and awareness – it is important to conduct public awareness and informational campaigns to combat stereotypes and discrimination against persons with disabilities.

Integration implies that relationships between individuals are based on a recognition of their integrity, values and common rights. When these values are not recognized, alienation and segregation between social groups are established. B. Nirje states that “integration is allowing yourself to be among others” (Albu & Albu, 2000). Otherwise,

integration represents the ability to entertain a healthy relationship between individual and society and can be analyzed considering multiple layers, from simple and becoming more complex as we go on. Therefore, we can talk about:

- Physical integration provides people with special requirements the ability to ensure their basic needs to survive, that is, to provide housing, to organize classes and train staff in regular schools, to profess in a multitude of fields, to work (in protected system).
- Functional integration takes into account the facilitated access of people with special requirements to freely use all of the facilities and services proposed by society, guaranteeing minimal comfort (for example: the use of public transport means, facilities for street access or in various public institutions).
- Social integration refers to the set of social relations a person with disabilities develops with others from their community (neighbors, coworkers, people on the street, civil servants).

Integrations into society strive to guarantee the equal rights and respect for the self-determination of a person with disabilities; organizational integration refers to organizational structures that support integration. According to the principles promoted in education by international bodies, as well as the provisions included in the Declaration of the Rights of persons with Disabilities, it is noted that persons/students with different types of disabilities have the same fundamental rights as other citizens of the same age, without the discriminations on any grounds, such as gender, religion, political beliefs, social or national origins, spoken language, financial status or any other characteristic of the person concerned or his family.

Conclusion

The social integration of disabled people is one of the many social problems that society faces. Most disabled people don't benefit from equal opportunities in regards to healthcare, education, or employment, they don't benefit from certain services that people with special needs require, being thus excluded from the activities of everyday life.

Social inclusion of persons with disabilities is an essential concept for building a fair and just society. In recent years, the rights of persons with special needs have been increasingly recognized internationally, and many countries have made significant progress in ensuring equal access to education, work, health and other services. However, there are still many difficulties that need to be remedied in order to ensure the full integration of these people into social life.

The phenomenon of disability, stimulated by different factors: poor health, polluting environment, political instability, poverty, social exclusion, is manifested by the defective relationship between individual

and his environment. Disability is present in all types of societies, from all of them times and causes dissension at the system level. The existential picture of people disability in our country presents an integrative and unitary imbalance of society. Solving problems in the given field can be achieved through co-participation and adherence to this marginalized social group.

Social inclusion of persons with special needs is an important objective that requires the active involvement of authorities, educational institutions, employers and society as a whole. By implementing effective measures and changing mentalities, we can build a world where all people, regardless of their disabilities, have the same rights and opportunities to participate in social life.

References

- Albu, A., Albu, C. (2000). The psycho-pedagogical and medical assistance of the physically deficient child, Polirom Publishing House.
- André, C. (2010) Soul states, Trei Publishing House
- Gavrila-Ardelean, M. (2016). Reducing the stigma of people with mental handicap. *Agora Psycho-Pragmatica*, 10(2), 39-45.
- Gavrila-Ardelean, M. (2017). Personal Needs and Psycho-Social Expectancies of People with Mental Chronic Disorders Regarding Professional Insertion. *Revista de Cercetare și Intervenție Socială*, (56), 57-69.
- Gavrila-Ardelean, M., & Gavrila-Ardelean, L. (2017). Education for Children with Special Needs. In *International Children Rights Congress*, Vol. 1, pp. 500-508.
- Gavrila Ardelean, M. (2021). New European strategies for the vulnerable category of persons with disabilities. *Vulnerabilities in Social Assistance*, 2, 97-103.
- Gavrila Ardelean, M. (2022). New legislation on the right to decide of people with mental health problems–Legislative proposal review–. In *Social Assistance*, 135.
- Gherguț, A. (2006). Psychopedagogy of persons with special requirements. Differentiated and inclusive strategies in education, Polirom Publishing House.
- Glăvan, E. (2020). Social Policies in Romania After 30 Years: Expectations and Answers [Social Policies in Romania After 30 Years: Expectations and Answers]. *Social Assistance Magazine*, 19(4), 141-144.
- Law 448 of 2006 regarding the protection and promotion of the rights of persons whit disabilities.

- Ponea, S. (2009). A different world, a similar world, the social integration of people with locomotor disabilities, Lumen Publishing House.
- Popovici, D. V. (1999). Elements of psychopedagogy or integration, Humanitate Publishing House
- *** United Nations, (1975). Declaration on persons with Disabilities.
- Zamfir, C., Vlăsceanu, L. (1993). Dicționar de sociologie, Babel.
- Wolfensberger, W. (1972). The Principle of Normalisation in Human Services, National Institute of Mental Retardation.

EXPLORING THE TOPIC OF SCHOOL DROPOUT. NARRATIVE REVIEW OF ACADEMIC LITERATURE

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Abstract: *School dropout is a significant problem area in many European countries, including Romania, with serious economic, social and educational implications (Gorghiu, et al., 2020; Pop-Flanj, Herța, 2019). The paper is a narrative review that proposes to analyze educational policies in the EU and Romania that prevent school dropout. We used the ERIC and Google Scholar search engines using the key terms school dropout, policies, school dropout prevention. 21 articles were selected and included in the narrative review. The study aims to identify the determinants of school dropout and evaluate the measures implemented to prevent it. The results indicate that policies that include integrated measures, involving families, schools and communities, are the most effective in preventing school dropout (Sahin, Arseven, 2016).*

Key words: *school dropout; educational policies; early intervention; inclusive education.*

Introduction and problem statement

Early school leaving is one of the most important challenges for education systems worldwide, with major social, economic and cultural implications. Identifying and understanding the factors that contribute to early school leaving is essential for the development of effective educational policies. This narrative review explores the literature on the determinants of early school leaving, focusing on four main categories: socio-economic factors, family factors, individual and psychological factors, and community and public policy factors. Early school leaving is defined as leaving school before completing upper secondary education and is a phenomenon with multiple causes, including socio-economic, cultural and educational factors. Early school leaving is also defined as leaving education without obtaining a minimum qualification

(Adams, Becker, 1990). In the European Union, early school leaving rates vary significantly between Member States, and recent data show a decreasing trend in this phenomenon in recent decades (Lyche, 2010). According to Eurostat (2020), the early school leaving rate in the EU reached 10.3% in 2020, with notable differences between countries. In countries such as Portugal, Italy and Spain, early school leaving rates are much higher than in Nordic countries such as Sweden and Finland (Eurostat, 2021). In Romania, early school leaving is a particular problem, with a rate of 16.4% in 2020, significantly higher than the European Union average (Eurostat, 2021). This problem is influenced by factors such as poverty, lack of access to quality education in rural areas and forced migration of families, among others (World Bank, 2018). Early school leaving has long-term consequences for young people who drop out of education, increasing the risks of social exclusion and more difficult integration into the labour market (OECD, 2020).

Description of research design

The paper is a qualitative research that uses the method of narrative review of academic literature.

Purpose and Objectives

Narrative review of academic literature in order to describe the issue of school dropout

- Identify the most frequent directions of growth in the field of school dropout
- Identify the determinants of school dropout in Europe and Romania.
- Evaluate measures to prevent school dropout in the European Union and Romania.

Sampling and Method

The study was carried out by accessing the Research Gate, Google Academic databases to identify international specialized literature that researches the issue of school dropout. The review took place between December 2024- January 2025 and was limited to articles published in Romanian and English. The search terms used are listed in Table 1.

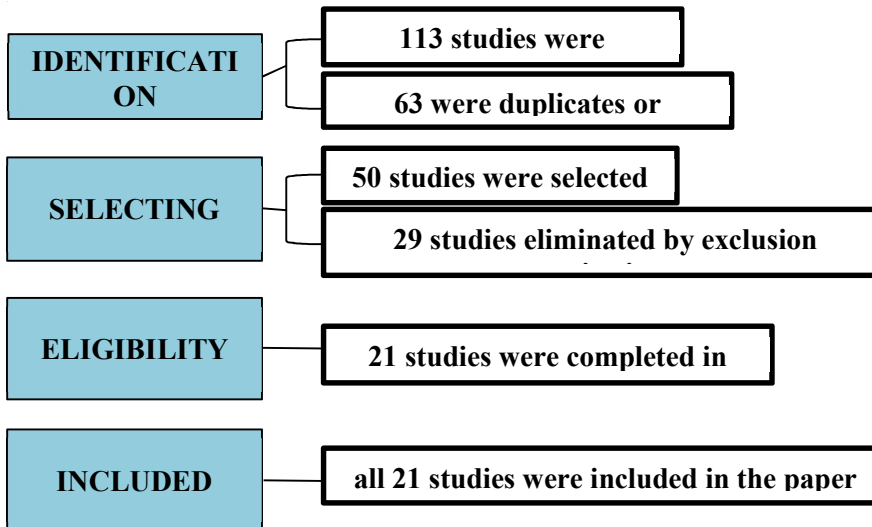


Figure 1. Flowchart for identifying selected articles

Findings

The most important directions of growth in school dropout concern these topics: Risk factors for school dropout, social and educational policies aimed at preventing dropout, and school dropout in rural areas. The table below summarizes the three directions of research with the related references.

Causes of school dropout	Educational policies	School dropout in rural communities
Chirtes, (2010)	Rahbari et al., (2014)	Muntele, Istrate, Bunduc (2020)
Sahin, Arseven, Kiliç, (2016)	Lyche, (2010).	Marin, (2022)
Gorghiu et al., (2020)	Arriazu, Solari, (2015)	Pescaru, (2018)
Sabates et al., (2010)	Weatherbee, (2006)	Bosoanca, (2021).
Pop-Flanja, Herța, (2019)	Popa, (2020)	Dupéré et al., (2019).
Ioana et al., (2015)	Tranca, (2018)	Piscitello, Orooji, Robison (2022).

Table no. 1. Research directions on the issue of school dropout

2. Poverty, family factors, individual factors, cultural and community factors - risk factors for school dropout

Poverty is one of the most important factors influencing school dropout (Gorghiu et al., 2020). Studies show that low-income families cannot cover the indirect costs of education, such as transportation, school

supplies or uniforms, which negatively affects students' participation in education (World Bank, 2018). In Romania, approximately 32% of children between the ages of 6 and 17 live at risk of poverty or social exclusion, which significantly limits their chances of completing compulsory education (Eurostat, 2021). In addition to poverty, economic inequalities contribute to the creation of significant gaps between rural and urban areas. According to a World Bank report (2018), the insufficiently developed educational infrastructure in rural areas accentuates this phenomenon, offering fewer educational opportunities to students in these areas. Social exclusion disproportionately affects children from marginalized groups, such as Roma or those with migrant parents (Pescaru, 2018). These students often face discrimination, limited access to quality education, and reduced opportunities for integration into the education system (Pop-Flanța & Herța, 2019). In Romania, the school dropout rate among Roma children is significantly higher than the national average, reaching over 77% in some regions (UNICEF, 2021).

Parental migration abroad, a frequent phenomenon in Romania and other Eastern European countries, has a negative impact on children left behind. The lack of emotional support and parental monitoring decreases the school performance of these children and increases the risk of dropping out (World Bank, 2020). A UNICEF study (2021) indicates that students who have at least one parent abroad have a 30% higher risk of dropping out of school.

Family structure is an important determinant of children's educational success. Single-parent families or those with frequent conflicts provide little support for continuing their studies. According to OECD (2019), emotional support and active involvement of parents in children's education are essential factors in preventing school dropout. In Romania, families where parents are abroad exacerbating this problem, with children often left in the care of relatives or even alone (World Bank, 2020). The level of education of parents directly influences children's attitudes towards school. Families where parents have a low level of education are less involved in their children's school life, and the risk of dropping out is significantly higher (Popa, 2020). Also, the lack of a perspective on the benefits of education for the future limits children's motivation to continue their studies (Sabates et al., 2010)

Limited economic resources affect not only children's access to education, but also family involvement in school life. Costs associated with education, such as supplies or transportation, become a burden for low-income families (Eurostat, 2021). In addition, children from such families are often forced to work to support the household, which limits their time and energy for studies (World Bank, 2018). Among individual factors, lack of personal motivation is a frequent factor in school

dropout, especially among adolescents (Rahbari et al., 2014). Students who do not perceive education as relevant to their future aspirations are more likely to drop out of school. Mental health problems, such as anxiety, depression or behavioral disorders, play a significant role in school dropout (Piscitello et al., 2022). Students who face such difficulties are often marginalized in the educational environment and do not receive the necessary support (World Bank, 2018).

Cultural norms play an important role in educational decisions, especially in communities where early marriage and domestic responsibilities are common. For example, in Roma communities, girls are often withdrawn from school to marry or to perform domestic tasks (European Commission, 2021).

Communities with limited resources offer few opportunities for children to engage in extracurricular activities or personal development, which contributes to an increased risk of school dropout (Dupéré et al., 2019). This lack of support contributes to an increased risk of school dropout, especially in rural settings (OECD, 2020). Inadequate educational policies are a major obstacle to preventing school dropout (Weatherbee, 2006). The lack of mentoring programs, personalized interventions negatively affect school retention (European Commission, 2019). Although programs such as “Second Chance” and “Money for High School” have had a positive impact, their coverage remains limited (Ministry of National Education, 2020).

School dropout is a complex phenomenon, influenced by socio-economic, family, individual and public policy factors (Chirtes, 2010). Studies show that integrated measures, involving both families and communities and public institutions, are the most effective in preventing school dropout (Tranca, 2018). Understanding these factors is essential to develop effective interventions. Studies show that integrated measures, involving both families and communities and public institutions, are the most effective in preventing school dropout.

3. Categories of measures to prevent early school leaving

The European Union has implemented various policies and strategies to reduce early school leaving. These measures focus on early intervention, promoting inclusive and accessible education and supporting vulnerable students (Sahin, Arseven, & Kiliç, 2016). European policies are supported by reports and strategies that emphasize the importance of education as a driver of economic and social development (Lyche, 2010). Early interventions are essential for preventing early school leaving. According to the European Commission (2019), identifying students at risk of dropping out of school and providing personalized support can significantly contribute to reducing this phenomenon. Some countries have implemented early education programs targeting children

from disadvantaged backgrounds, providing a fair educational start ((Sahin et al., 2016; OECD, 2019; European Commission, 2020)). Compulsory and quality pre-primary education is considered a key factor in preventing early school leaving. Promoting inclusive education is another major objective of European education policies. The European Union supports the creation of an education system in which all students, regardless of their socio-economic status, ethnicity or disability, have access to quality education (Muntele, Istrate, & Bunduc, 2020). In many European countries, integration programs for migrant students and those with disabilities have been implemented, which include language courses, psychological support and social integration activities (European Commission, 2021). Also, in some countries, such as France and Germany, vocational and technical schools have been developed that offer alternatives for students who do not wish to follow a general educational path (OECD, 2020)

Active involvement of parents and the community is crucial in preventing early school leaving. According to OECD (2020), collaboration between schools, parents and community organizations can reduce the risks of early school leaving, especially in disadvantaged regions. Many European countries, including the United Kingdom and France, have implemented programs that encourage parental involvement in the educational process, providing them with support and information to support learning at home (Sabates, Westbrook, Akyeampong, & Hunt, 2010).

In Romania, school dropout is a deep-rooted problem, influenced by socio-economic inequalities and the lack of adequate educational infrastructure. The Romanian government and international organizations have implemented various measures to prevent this phenomenon, but there are still significant challenges in implementing these policies (Miron & Mistrean, 2024). Romania has implemented various programs aimed at reducing school dropout, including through financial support provided to families from disadvantaged backgrounds. The “Money for High School” program is an example of a measure aimed at stimulating the continuation of studies for students from poor families (Ministry of National Education, 2020). Romanian authorities have also implemented support measures for students from rural areas, who are more likely to drop out of school due to the lack of educational infrastructure and the long distance from educational institutions (World Bank, 2018). Table 2 Summary of risk factors and prevention policies.

References**Findings****Risk factors in school dropout**

Sabates et al., (2010); Gorghiu et al., (2020)	Culture (belonging to certain ethnic groups) Economic factors; Family factors Poor access to education Family problems
Sahin, Arseven, Kiliç, (2016) Chirtes, (2010)	Poor parent-child relationships Ignoring school absenteeism Perspectives on education Economic difficulties Family problems
Pop-Flanja, Herța, (2019); Ioana et al., (2015).	Economic problems, poverty Cultural values Emotional and psychological factors

Educational policies

Rahbari et al., (2014).	Grants and financial support programs Special programs for student reintegration Student registration systems
Arriazu, Solari, (2015)	Improving youth mobility and access to education and training Scholarships and material support for students from disadvantaged backgrounds.
Popa, (2020)	Family Support Allowance. The "Corn and Milk" Program. Providing free school supplies to students from disadvantaged backgrounds
Lyche, (2010)	Remedial education Tutoring and homework assistance to support struggling students Comprehensive programs that combine academic, vocational, and social work education.
Weatherbee, (2006)	Screening and Diagnosis: Identifying Students at Risk of School Dropout Monitoring and Evaluation: Assessing the Effectiveness of Intervention Programs.

Tranca, L. M. (2018)	Creating partnerships with NGOs and local institutions to support the education of disadvantaged children. Community awareness campaigns on the importance of education and combating discrimination. Involving volunteers in education
School dropout in rural communities	
Muntele, Istrate, Bunduc, (2020) Marin, (2022)	Endemic poverty of families;-Low level of education of parents; Low income of parents Poor digital infrastructure
Pescaru, (2018); Bosoanca, (2021)	Parental attitudes towards education, especially in the case of Roma communities; Seasonal migration, belonging to nomadic families; Cultural norms (e.g. early marriage of girls)
Dupéré et al., (2019)	Peer-Related Stressors Parentification of the Child, Responsibility for Raising Siblings
Piscitello et al., (2022)	Increased socio-demographic risks; Increased economic difficulties

Table no. 2. Findings from the specialized literature

Conclusions

Research suggests that school dropout is a complex phenomenon, caused by a combination of economic, family and socio-cultural factors. Educational policies adopted include financial support and remedial education, can have a significant impact in reducing dropout, but these measures must be implemented taking into account the particularities of each region and community. In particular, rural communities and students from disadvantaged backgrounds are the most vulnerable to school dropout, and interventions must be adapted to take into account their specific difficulties, such as the lack of educational infrastructure and parental migration. It is also essential that interventions include a component of raising awareness among parents and the community about the importance of education.

References

- Adams, J. L., & Becker, W. E. (1990). Course withdrawals: A probit model and policy recommendations. *Research in Higher Education*, 31, 519-538.
- Arriazu, R., & Solari, M. (2015). The role of education in times of crisis: A critical analysis of the Europe 2020 Strategy. *KEDI Journal of Educational Policy*, 12(2).
- Bosoanca, B. (2021). The causes of school drop-out among scholars in rural areas. *Review of Socio-Economic Perspectives*, 6(202182), 59-65.
- Chirtes, G. (2010). A case study into the causes of school dropout. *Acta Didactica Napocensia*, 3(4), 25-34.
- Dupéré, V., Goulet, M., Archambault, I., Dion, E., Leventhal, T., & Crosnoe, R. (2019). Circumstances preceding dropout among rural high school students: A comparison with urban peers. *Journal of Research in Rural Education*, 35(3), 1.
- Gorghiu, L. M., Enache, R. C., Petrescu, A. M. A., & Gorghiu, G. (2020). Several causes and sustainable solutions of school dropout in Romania. *Lumen Proceedings*, 10, 335-343.
- Ioana, M. I., Anda, M. I., Cornelia, P., & Mariana, C. R. (2015). School dropout—A social problem in Romania. *Procedia-Social and Behavioral Sciences*, 182, 623-628.
- Lyche, C. S. (2010). Taking on the completion challenge: A literature review on policies to prevent dropout and early school leaving.
- Marin, A. M. (2022). Log in or out of online schooling: The case of Romania. *SN Social Sciences*, 2(8), 142.
- Miron, M., & Mistrean, L. (2024). A comparative analysis of school dropout causes in rural and urban Romania. *Educ. Sci. Manag*, 2(3), 134-144.
- Muntele, I. O. N. E. L., Istrate, M. A. R. I. N. E. L. A., & Bunduc, F. L. O. R. I. N. A. (2020). Educational disparities in Romania: A multilevel analysis of the National Assessment Examination success rate. *Rev. Roum. Géogr. Rom. Journ. Geogr*, 64, 43-55.
- Pescaru, C. M. (2018). School abandonment at the level of Roma population. *Revista universitară de sociologie*, 14(2), 120-129.
- Piscitello, J., Kim, Y. K., Orooji, M., & Robison, S. (2022). Sociodemographic risk, school engagement, and community characteristics: A mediated approach to understanding high school dropout. *Children and Youth Services Review*, 133, 106347.
- Popa, C. E. (2020). Particularities of early school leaving in Romania. *Expert Journal of Economics*, 8(2).

- Pop-Flanja, D., & Herța, L. M. (2019, September). School dropout among Roma children in Romania. In *Education and Culture in Traditional Communities: Book of Proceedings* (p. 207).
- Rahbari, M., Hajnaghizadeh, F., Damari, B., & Adhami, B. (2014).
- Sabates, R., Westbrook, J., Akyeampong, K., & Hunt, F. (2010). *School dropout: Patterns, causes, changes, and policies*.
- Sahin, S., Arseven, Z., & Kiliç, A. (2016). Causes of student absenteeism and school dropouts. *International Journal of Instruction*, 9(1), 195-210.
- Tranca, L. M. (2018). *School dropout: A case study on prevention measures*. *Agora Psycho-Pragmatica*, 12(2), 197-207.
- Weatherbee, S. (2006). *Preventing high school dropout: Implications of a screening inventory for school reform policy and practice* (Doctoral dissertation, University of Pittsburgh).

ASSESSMENT OF TEACHERS' METACOGNITIVE AWARENESS. VALIDATION AND APPLICATION OF METHODOLOGICAL TOOLS, IMPLICATIONS FOR PROFESSIONAL DEVELOPMENT

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Abstract: *The article presents methodological research in the field of metacognition, centered on the pre-testing and validation of a research instrument that will be applied in a cross-sectional study on teacher needs analysis. The training needs analysis is a part of the research of the doctoral dissertation "Development of metacognitive skills of primary and pre-school teachers". Given that in this research we intend to measure the level of metacognitive awareness of teachers in relation to their professional development and in order to approach the elements of metacognition in a unified way, we considered it useful to adapt two commonly used instruments for this purpose: the metacognitive awareness inventory for teachers, after Balcikanli, and the metacognitive awareness inventory for adults, after Schraw and Dennison. These instruments were pre-tested on a total of 195 primary and pre-school teachers. In this article, we present the research background, the process and results of the pretesting of the Adult Metacognitive Awareness Inventory -MAI (Schraw and Dennison,1994), which was adapted and developed according to the aims and context of the doctoral research. The variables of the methodological research were defined and correlated according to the answers regarding: a) significant differences between the factors influencing the level of metacognitive awareness; b) obtaining positive and significant correlations between the factors and the dimensions of the MAI inventory. The obtained results were grouped in three parts represented by: a) item descriptive statistics; b) results of confirmatory factor analysis; c) descriptive analyses on metacognition dimensions and elements of inferential intergroup statistics. In this article, the results of the pretesting of the MAI inventory by means of inferential statistics are presented in detail. The statistical analyses confirm the validity of the adapted instrument, according to the metacognitive awareness inventory*

for adults - MAI (Schraw and Dennison, 1994), by its internal consistency and its relevance in assessing the level of metacognitive awareness of the subjects in the group of teachers selected for the doctoral research.

Keywords: *teachers' metacognitive competences; metacognitive skills development; metacognitive awareness assessment; metacognitive awareness inventory - MAI; self-management of professional development.*

Introduction

The development of metacognition is a desirable factor in the training and professional profile development in youth and adult education, with significant implications for career and spiritual profile development, in line with social values, professional standards and personal goals/expectations. In the field of professionalization of teaching careers and in-service teacher training, metacognitive competences are a topical issue in psycho-pedagogical research, educational policies and the reform of the initial and in-service teacher training system and curriculum

The extent to which teachers themselves are metacognitive is unclear, as there is not much research on teacher metacognition, but the development of metacognition could enable more effective professional development activities in this area. Georghiades (2004a) argues that those teachers who happen to be familiar with the notion of metacognition do not have the resources to implement it in their teaching (in terms of both appropriate learning materials and time). Thus, the current state of the literature in this area has already shown signs of an emerging gap between theory and practice: 'academic studies emphasize the value of metacognition for learning, but attempts to bring metacognition into mainstream classrooms are rare. If metacognition is to find its way into instruction, policy makers must make changes in curriculum and teacher training that facilitate it" (Zohar&Barzilai, 2013, p.7).

The development of metacognitive competences in teachers has an increased impact on both their teaching and the management of their professional development. Teachers need to be able to develop solid content knowledge by critically synthesizing and valuing different resources, adapting to changes in the educational system as well as to the varying demands of the beneficiaries of education. The ability to monitor and control one's own professional development effectively is essential for professional performance according to the teaching career standards.

In educational practice, teachers with metacognitive skills ensure that

they are able to develop professional development plans, monitor their teaching behaviors, regulate instruction, evaluate teaching performance, reflect on instructional activities and professional performance. These capacities and skills underpin the development of the teacher's metacognitive dimension, which is integrated into the desirable profile of professional competence and valorized in the management of one's own teaching career.

Conceptual and methodological foundations

Approached as a set of metacognitive knowledge, skills and experiences, metacognitive competences are highlighted by the ability to self-assess the level of professional development, awareness and self-analysis of training needs, by selecting, adapting and applying strategies for planning, monitoring and regulating their own training process. In teaching career management, metacognitive skills reveal the ability of teachers to use methods and techniques of self-analysis, in the sense of metacognitive strategies, self-reflection and self-regulation, but also in the process of self-regulated learning, essential for the professional growth of teachers throughout their careers. Recent research emphasizes the impact of metacognitive skills on teachers' professional performance (Fathima et al., 2014), by developing a meta-perspective on their in-service training activity as a prerequisite for effective self-management of professional development.

The assessment of metacognition has been a great research challenge over the years, especially because metacognition is a complex phenomenon that integrates interrelated variables of cognition, axiological system and personal experiences. The development and use of valid assessment tools has been an ongoing concern of researchers, who have emphasized that measuring metacognitive awareness in a given domain involves the use of metacognitive literature and research to develop a thorough understanding of metacognition, metacognitive processes and dimensions.

The assessment of metacognition is conducted in controlled settings, most commonly using a single scale-like instrument with clearly stated psychometric properties that measures a single dimension or several aspects of metacognition. However, Schraw (2000) emphasizes that no single research method or procedure can provide a complete understanding of a complex phenomenon such as metacognitive awareness. He believes that "most available instruments that measure metacognition have unknown psychometric properties" (Schraw, 2000, p. 301). Also, Hughes (2019) is of the opinion that single-method metacognition research measures metacognition superficially. For this reason, research using multiple, triangulated, and mixed-method approaches is recommended (Pintrich, Wolters & Baxter, 2000; Schraw,

2000, 2009).

Assessment of the level of metacognitive awareness in general and metacognitive skills of teachers for professionalization of teaching career is revealed in:

- the ability of diagnostic analysis of one's own level of development of professional competences, in relation to professional standards, personal expectations and the expectations of the beneficiaries of the educational act;
- capacities and skills of critical thinking, evidenced in self-analysis and reflection on competences and professional performance, asserted in educational situations or comprehensively reported at the level of professional development (Dumitru, 2013);
- the ability to elaborate a complex professional development project, focused on several elements: the vision of one's own professional development; the definition of strategic objectives of professional (self-)training; the proposal of training activities in order to acquire / improve desirable professional and transversal competences; the selection of strategies to make the implementation of the professional development project more efficient (managerial strategies, metacognitive strategies, professional learning situations);
- establishing forms and tools for evaluation/meta-evaluation of the professional development curriculum (Bunăiașu, 2013)
- self-regulation capacities of the vocational training process, through: self-observation, self-monitoring; self-judgement; self-reaction; self-attitude (Schunk, 1996).

In order to identify and analyze the level of metacognitive awareness as well as to develop metacognitive skills, Schraw and colleagues (2000) emphasized the importance of the following strategies (Henter, Indrieica, 2014):

- Observing metacognitive skills leads to insights about strategies, metacognition and motivation in academic tasks;
- Selecting appropriate cognitive tasks for using metacognitive skills;
- The use of instruments with psychometric properties appropriate to the various populations investigated;
- Using a variety of qualitative and quantitative methods for each topic.

The methods used to measure metacognition influence the aspects of metacognition that are captured in the resulting data. Thus, behavioral tracking methods can be used to measure some metacognitive skills, but are not as well suited for measuring knowledge. In contrast, interviews can be used to measure knowledge and beliefs, but are limited to processes that the interviewee knows and can recall.

Meyers and Paris (1978) were the first to create a metacognitive

inventory, corroborating the categories developed by Flavell and Welman (1977), namely person, task and strategy. Later, Paris and Jacobs (1984) modified Myers and Paris's (1978) instrument by using a questionnaire containing 15 open-ended questions across three factor categories: planning, evaluation, and regulation (Balcikanli, 2011). In 1990 in their empirical studies, Weinstein, Palmer, and Schultz (1987) and Pintrich and DeGroot developed two inventories commonly used in subsequent research on metacognition: the *Learning and Study Strategies Inventory (LASSI)* and the *Motivational Strategies for Learning Questionnaire (MSLQ)*. The use of rating scales is one of the most common domain-independent measurement techniques that ask participants to self-report statements about cognitive processes. Schraw and Dennison (1994), on the other hand, developed a 52-item Likert-type self-report scale for adults, the *Metacognitive Awareness Inventory (MAI)*, which measured both cognitive knowledge and cognitive regulation. Howard, McGee, and Shia (1999), correspondingly, generated a 32-item scale called *Inventory of Metacognitive Self-Regulation (IMSR)* to measure five factors related to awareness of learning processes and control of learning strategies: cognition knowledge, objectivity, problem representation and problem solving, task performance monitoring, and evaluation (Cihanoglu, 2012).

The assessment of teachers in the metacognitive domain is mostly carried out through metacognitive inventories, which are based on teachers' ability to self-identify their level of metacognitive awareness in relation to the activities they are involved in. The Metacognitive Awareness Inventory for Teachers - MAIT (Balcikanli,) and The Metacognitive Awareness Inventory (Schraw and Dennison, 1994) are the basic tools used in teacher research focused on the study of teachers' metacognitive training needs.

The assumption that these standardized instruments should be adapted and developed to the characteristics of the subjects and to the educational context variables constituted the elements of legitimacy underlying the objectives and methodological architecture of our study. The methodological design reveals the application of the principle of triangulation in the development and pretesting of the instruments of the cross-sectional study on the analysis of the training needs of primary and pre-school teachers in the field of metacognitive development.

In our article, we present the adaptation and development of the Metacognitive Awareness Inventory -MAI (Schraw and Dennison, 1994), as well as the process and results of pretesting and validation of this instrument. *The MAI* is a 52-item self-report instrument and each item is rated on a 5-point Likert-type scale ranging from "1 - Never Agree" to "5 - Always Agree" to report respondents' level of agreement with the statements. The items were categorized into eight sub-

components subsumed into two broader categories namely cognition of cognition and regulation of cognition (Schraw & Dennison, 1994).

In Schraw's model, the items of "cognition knowledge" were grouped into declarative knowledge (DK, knowledge about self and strategies, 8 items), procedural knowledge (PK, knowledge about using the procedure, 4 items) and conditional knowledge (CK, knowledge about when and how to use strategies 5 items), while the items of the "cognition tuning" component were grouped into: planning (P, goal setting, 7 items), strategy (S, implementation strategies, 10 items), monitoring (M, 7 items), debugging/regressing (D, error correction, 5 items) and evaluation (E, performance analysis, 6 items).

Research

Research study questions

The instruments for assessing the level of metacognitive awareness in teachers were selected from a theoretically sound framework and tested on samples with a large number of subjects. Even though there were different views on how to score the responses, which led to inconsistent scoring practices, the empirical evidence on the factor structure of the Metacognitive Awareness Inventory -MAI, pa that we will administer to teachers, can address this need by answering the following questions:

- Are there significant differences between the factors influencing the level of metacognitive awareness and between categories of subjects on the same criterion, revealed by the means obtained by applying the MAI inventory to primary and pre-school teachers?

- Can positive and significant correlations be obtained between the factors and dimensions of the MAI inventory?

The objectives of the methodological research are:

Adaptation of the metacognitive awareness inventory MAI (Schraw and Dennison, 1994), by reformulating some items, to which are introduced variables specific to the metacognition and educational context of the selected categories of subjects.

Administering and validating the adapted MAI inventory in relation to its internal consistency and relevance as a research tool in the field of metacognitive skills assessment of primary and pre-school teachers.

Sample of subjects

The group of subjects was selected by stratified randomization technique, from the target population of primary and pre-school teachers to a representative sample. The structure of the sample of 195 teachers reveals several categories of subjects corresponding to subdivisions resulting from the application of three sampling variables, as follows

- according to the criterion of teachers' specialization, aiming to ensure a close percentage ratio: 93 teachers for pre-school

education and 102 teachers for primary education;

- according to the variable educational environment of the schools (urban/rural): 66 teachers from rural areas and 129 teachers from urban areas;
- according to the teaching grade obtained: 39 teachers with permanent grade, 75 teachers with teaching grade II and 81 teachers with teaching grade

Research results

Metacognitive Awareness Inventory (MAI), adapted from Schraw and Dennison (1994)

In this study, the aim of MAI was to collect quantitative data on participants' current level of metacognitive awareness, cognition knowledge and cognition regulation. The inventory, which consists of 52 items, was adapted for professional development. The data were also used to compare sample groups by the variables: specialty, environment of residence, and teaching grade in terms of their level of metacognitive awareness. Schraw and Dennison (1994) indicated that MAI provided a "reliable baseline test of metacognitive awareness" when used in testing adults (p. 472). MAI has been identified as the test that has a reliable psychometric measure $\alpha = .90$ (Schraw & Dennison, 1994).

MAI consists of two main components, cognitive cognition and cognitive regulation. The factors of the proposed model are based on the eight-dimensional theoretical model, where DK = declarative knowledge (items 5, 10, 12, 16, 17, 20, 32 and 46), PK = procedural knowledge (items 3, 14, 27 and 33), CK = conditional knowledge (items 15, 18, 26, 29 and 35), P = planning (items 4, 6, 8, 22, 23, 42 and 45), IMS = information management strategies (items 9, 13, 30, 31, 37, 39, 41, 43, 47 and 48), M = monitoring (items 1, 2, 11, 21, 28, 34 and 49), DS = troubleshooting strategies (items 25, 40, 44, 51 and 52) and E. = evaluation (items 7, 19, 24, 36, 38 and 50). The eight sub-components of metacognition are rated at five levels of awareness: always true (5), sometimes true (4), neutral (3), sometimes false (2) and always false(1). On the lot investigated to pretest the instruments, the whole scale had an internal consistency coefficient of .780, and the internal consistency coefficient for the two dimensions described by the authors and adapted by rewording the items for teachers' professional development was .706 for Knowledge about cognition and .769 for Cognition regulation.

Case Processing Summary			Reliability Statistics	
Components/Dimensions	N	%	Cronbach's Alpha	N of Items

I. Knowledge about cognition	195	100,0	,706	17
II. Cognition regulation			,769	35
MAY			,780	52

Table 1. MAI reliability analysis

Varimax factor analysis identified a structure of eight factors that together explain 42.92% of the total variance. Items 2, 23, 40 although they had a higher saturation on the Metacognition Knowledge dimension, the Procedural Knowledge factor, were kept on the Cognition Adjustment dimension, the Planning and Troubleshooting/Regulation Strategies factors because their meaning allowed this while increasing the internal consistency of the latter factors.

Items	Factor saturations		Communalitie
	Knowledge about cognition	Cognition regulation	
1.Monitoring		,828	,821
2.Monitoring	,760	,643	,766
4.Planning		,823	,875
6.Planning	,721	,846	,831
7.Evaluation	-,635	,695	,758
8.Planning		,708	,743
9.Management Strategies	-,609	,699	,784
11.Monitoring		,673	,745
13.Management Strategies		,986	,992
19.Evaluation		,781	,828
22.Planning		,659	,836
23.Planning	,663	,731	,697
24.Evaluation		,797	,831
25.Debugging Strategies		,685	,584
30.Management Strategies		,988	,992
31.Management Strategies		,735	,829
34.Monitoring		,705	,761
36.Evaluation		,792	,834
37.Management Strategies		,584	,770
38.Evaluation		,679	,653
39.Management Strategies		,758	,780
40.Debugging Strategies	,690	,618	,824
41.Management Strategies		,986	,992
42.Planning	,601	,835	,936
43.Management Strategies		,644	,733

44.Debugging Strategies		,728	,736
45.Planning		,776	,812
47.Management Strategies		,797	,868
48.Management Strategies		,820	,827
49.Monitoring		,680	,665
50.Evaluation		,880	,843
51.Debugging Strategies		,787	,788
52.Debugging Strategies		,880	,902
3.Procedural	,626	-,595	,772
5.Declarative	,541	,108	,706
10.Declarative	,733		,795
12.Declarative	,609		,813
14.Procedural	,855		,830
15.Conditional	,584		,743
16.Declarative	,621		,783
17.Declarative	,668		,736
18.Conditional	,875		,852
20.Declarative	,546	,506	,664
21.Monitoring			,748
26.Conditional	,774		,774
27.Procedural	,503		,731
28.Monitoring			,800
29.Conditional	,864	-,530	,836
32.Declarative	,627		,716
33.Procedural	,756	,666	,872
35.Conditional	,734		,759
46.Declarative	,947	,662	,936

Table 2. Factor analysis of MAI

Data analysis and interpretation of MAI inventory pretest results using inferential statistics

This section provides the results of inferential statistics, i.e. Independent samples t-test for independent samples and Pearson correlation. The details of each inferential statistic are aimed at: investigating the differences in metacognitive knowledge and metacognitive skills of teachers based on demographic variables, teaching position held and teaching grade, and the correlations between metacognitive factors in relation to professional development.

a)Independent samples t-test

The t-test was used to find any differences between the metacognitive dimension factors based on the independent variables.

Therefore, Table 3 explains that there is a significant difference between teachers' metacognitive knowledge and its subscales (i.e., declarative

knowledge, procedural knowledge, and conditional knowledge) based on the environment of residence when applying the MAI inventory: $p = .001$, $p = .013$, and $p = .002$, where $p < .05$.

Inventory	Factors	Residence environment				t	df	sig
MAI	Declarative	4,1818	,34333	4,0727	,25708	2,495	193	,013
	Procedural	4,0114	,34371	3,8140	,39066	3,474	193	,001
	Conditional	4,1182	,37289	3,9767	,25326	3,126	193	,002

Table 3. Independent samples t-t-test between teachers' metacognitive knowledge and residential background for MAITPD and MAI

The T-test was also applied to the teachers' teaching function variable and significant differences were observed between the results obtained by pre-school and primary school teachers on the items attributed to the declarative knowledge factor (MAI): $p = .005$, where its value $p < 0.05$ (Table 4).

Inventory	Factors	Teaching function				t	df	sig
MAI	Declarative	4,0484	,27401	4,1654	,29963	-2,838	193	,005
	Procedural	4,1654	,29963	3,8971	,36620	-,616	193	,539
	Conditional	4,0323	,28020	4,0176	,32834	,333	193	,740

Table 4. Independent samples t-test between teachers' metacognitive knowledge and teaching function for MAI

In Table 5 we can observe the differences between teachers with a permanent teaching degree, those with a teaching degree II and teachers with a teaching degree I: there are significant differences for all factors corresponding to Metacognitive knowledge: $p = .002$, $.000$, where $p < 0.05$.

Inventory	Factors	Teaching grade						df	sig
		definitively		Grade II		grade.I			
		M	SD	M	SD	M	SD		
MAI	Declarative	4,0481	,28765	4,1350	,27781	4,1157	,30795		,315
	Procedural	3,6923	,49823	3,9100	,39558	3,9444	,27670		,002
	Conditional	3,8923	,24643	3,9920	,29854	4,1185	,31109		,000

Table 5: Independent samples t-test between teachers' metacognitive

knowledge and teaching grade for MAITPD and MAI

Table No. 6 explains that there is no significant difference between teachers' metacognitive skills and its subscales (i.e., planning, management strategies, monitoring, troubleshooting/regulation strategies, and evaluation) based on the environment of residence when applying the MAI inventory. We find a significant difference for: planning skills $p = .004$, management strategies $p = .001$ and monitoring strategies $p = .018$, where $p < .05$.

Inventory	Factors	Residence environment				t	df	sig
		rural		urban				
		M	SD	M	SD			
MAI	Planning	3,9351	,56043	3,7575	,28772	2,927	193	,004
	Management	4,2576	,22743	4,1395	,24067	3,301	193	,001
	Monitoring	3,6494	,45672	3,5183	,30466	2,386	193	,018
	Debugging	3,7000	,48895	3,7535	,31475	-,924	193	,356
	Evaluation	3,6288	,29928	3,6550	,30276	-,807	193	,422

Table No 6 Independent samples t-test on the factors of the dimension metacognitive abilities of teachers and their residence environment for MAI

Table 7 makes it clear that there is a non-significant difference between the metacognitive regulation skills of pre-school teachers and the metacognitive regulation skills of primary school teachers and their subscales: information management strategies - $p = .163$ and evaluation - $p = .320 > 0.05$. In contrast to this the results table also shows that there is a significant difference between pre-school teachers and primary school teachers in terms of career path monitoring skills - $p = .001$, regulation strategies - $p = .013$), where the value of $p < .05$.

Inventory	Factors	Teaching function				t	df	sig
		prof_inv_preschool		prof_inv_primary				
		M	SD	M	SD			
MAI	Planning	3,7327	,35134	3,8950	,44223	-,2819	193	,005
	Management	4,1541	,27169	4,2026	,21059	-,1400	193	,163

	Monitoring	3,4700	,33475	3,6471	,37700	-3,454	193	,001
	Debugging	3,6645	,43154	3,8000	,31965	-2,506	193	,013
	Evaluation	3,6237	,29478	3,6667	,30669	-,996	193	,320

Table 7: Independent samples t-test on the factors of teachers' metacognitive skills dimension and teaching function for MAI

Data analysis demonstrates (Table 8) that there is a non-significant difference between teachers' metacognitive regulation skills and its subscales (planning, information management strategies, monitoring) based on the teaching grades held, only in the use of regulation strategies, $p = .036$ and evaluation skills, $p = .028$.

Inventory MAI	Factors	Teaching grade						df	sig
		definitively		grade.		grade.I			
		M	SD	M	SD	M	SD		
	Planning	3,8132	,30243	3,8229	,41540	3,8148	,44917		,990
	Management	4,1709	,28138	4,1778	,18448	4,1852	,27046		,953
	Monitoring	3,5495	,29412	3,5657	,33416	3,5661	,42764		,969
	Debugging	3,8000	,28654	3,7920	,38406	3,6519	,40838		,036
	Evaluation	3,6667	,19868	3,7067	,36540	3,5802	,26367		,028

Table 8: Independent samples t-test on the factors of the dimension metacognitive skills of teachers and teaching grade for MA

b) Pearson correlation (Pearson r)

In order to determine the level of interdependence or the degree of relatedness between the metacognition dimensions, as well as between the factors of these dimensions, we used Pearson's correlation coefficient r (linear correlation coefficient).

Analysis of correlations between metacognitive dimensions for the MAI inventory reveals a strong and significant positive relationship between metacognitive knowledge and metacognitive self-regulation skills of teachers as $r = .618$ and $p = .000$

MAI correlations

	Knowledge.of.cognition	Regulation.of.cognition
--	------------------------	-------------------------

Knowledge.of.cognit on	Pearson Correlatio n Sig. (2- tailed) N	1 195	,618** 195
Regulation.of.cogniti on	Pearson Correlatio n Sig. (2- tailed) N	,618** 195	1 195

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9. Correlation between metacognitive knowledge, metacognitive self-regulation skills of teachers

The correlational analysis between the factors of the MAI inventory revealed that there are positive, significant correlations between most of the factors, only between the management strategies factor and the rest of the factors there are positive insignificant correlations: $r = .069, .019, .114, .103, .067, .055$, with the significance threshold value ranging between .112 and .793.

Correlations

	Declarat ative	Procedu ral	Conditio nal	Plann ing	Manage ment	Monito ring	Debug ging	Evalu ation
Declarat ive	1	,266**	,531**	,493*	,215**	,481**	,464**	,274**
Correlat ion		,000	,000	,000	,003	,000	,000	,000
Sig. (2- tailed)								
N	195	195	195	195	195	195	195	195
Procedu ral	,266**	1	,366**	,331*	,069	,199**	,209**	,056
Correlat ion			,000	,000	,336	,005	,003	,433
Sig. (2- tailed)								
N	195	195	195	195	195	195	195	195
Conditio nal	,531**	,366**	1	,563*	,019	,521**	,416**	,280**
Correlat ion		,000		,000	,793	,000	,000	,000
Sig. (2- tailed)								

	N	195	195	195	195	195	195	195
Planning	Pearson Correlation	,493**	,331**	,563**	1	,114	,569**	,470**
	Sig. (2-tailed)	,000	,000	,000		,112	,000	,000
	N	195	195	195	195	195	195	195
Management	Pearson Correlation	,215**	,069	,019	,114	1	,103	,067
	Sig. (2-tailed)	,003	,336	,793	,112		,151	,356
	N	195	195	195	195	195	195	195
Monitoring	Pearson Correlation	,481**	,199**	,521**	,569*	,103	1	,502**
	Sig. (2-tailed)	,000	,005	,000	,000	,151		,000
	N	195	195	195	195	195	195	195
Debugging	Pearson Correlation	,464**	,209**	,416**	,470*	,067	,502**	1
	Sig. (2-tailed)	,000	,003	,000	,000	,356	,000	
	N	195	195	195	195	195	195	195
Evaluation	Pearson Correlation	,274**	,056	,280**	,308*	,055	,411**	,414**
	Sig. (2-tailed)	,000	,433	,000	,000	,448	,000	,000
	N	195	195	195	195	195	195	195

** . Correlation is significant at the 0.01 level (2-tailed).

Table 9 Correlation between the factors of metacognitive knowledge and metacognitive self-regulation skills in teachers for the MAI inventory

Discussion

In the present study we were primarily interested in adapting, experimentally testing and validating the Romanian versions of instruments to identify the level of metacognitive knowledge utilization and metacognitive skills based on the metacognitive experiences of primary and preschool teachers in relation to the management of their

teaching career. The authors of the original instruments do not specify the relationship between the subscales of the instrument, but given that they aim to assess intercorrelated elements of metacognition, we assumed that they would develop positive correlations. As a result we opted for a Varimax rotation with Kaiser normalization. What can be seen is that there are a few items that present problems due to the degree of saturation in two factors. In order to be able to interpret the obtained factors, these items have been kept on the factor where they presented a higher saturation. In general, for the definition of the factors and metacognitive dimensions respectively, a saturation of at least 0.30 is considered to be sufficiently important, considering also the variance of the respective variable that is explained by that factor. At the same time, the factor loadings in relation to the sample size of 195 teachers show good values at the significance threshold $p < 0.01$, according to Stevens (2002) who states that for 200 subjects the minimum loading is 0.364. In the MAI inventory, we also obtained negative saturations on some factors: factor 7 (*I know my level of professional skills development when I complete a continuing education program.*) shows a negative saturation of -0.635 on the dimension knowledge about cognition and a positive saturation of 0.695 on the dimension cognitive tuning; factor 9 (*I adapt the pace of learning according to the complexity of the training situations.*) obtained a negative saturation of -0.609 on the dimension knowledge about cognition and a positive saturation of 0.699 on the dimension cognitive tuning. Negative saturation was also found for item 3 (*I try to use, in particular, ways of professional development that I have used in the past.*) and 29 (*I use my intellectual strengths to compensate for my weaknesses.*), but they were kept on the dimension where they obtained positive saturations. One explanation for obtaining these negative saturations is that the items were rated inversely on the given dimensions. Given that the factor loadings and the obtained communalities are high, it means that the analyzed factor model is stable after fitting the original inventories.

The conclusion from the factor analysis is that the grouping of items into factors is approximately identical to that of the original inventories, and that the saturations of items in factors represent positive correlations between items and factors, respectively dimensions of metacognition. The obtained results confirm that the inventory adapted to measure the level of metacognitive awareness of teachers presents high validity in identifying the level of use of metacognitive skills in the management of teaching career.

By applying the T-test and ANOVA test we obtained results showing significant differences classified as follows:

- Metacognitive knowledge: for the variables residence background, teaching function and teaching grades, although teachers scored

high and medium, there were significant differences between the means obtained by rural and urban teachers for all metacognitive knowledge factors;

- metacognitive skills: there are significant differences on the factors of planning, information management strategies and monitoring between the scores obtained by rural and urban teachers; between pre-school and primary school teachers there are significant differences obtained for the factors of planning, monitoring, regulation and evaluation; for the variable teaching grades, mean scores were obtained without significant differences for the use of metacognitive skills in the professional development of teachers.

Inferential statistics, by calculating the Pearson linear correlation coefficient we obtained data that emphasize the existence of significant and strong positive correlations between the dimensions of metacognitive competence. There are also significant positive correlations between metacognitive knowledge factors and metacognitive ability factors, as well as between factors of the same dimension.

Conclusions

In institutional contexts, metacognition and self-management of professional development are considered competencies of particular importance for lifelong learning and career success. Metacognitive cognition, metacognitive control and metacognitive experiences, the three components of metacognition, are assessed by two metacognitive awareness inventories adapted on the dimension of teachers' professional development, following Schraw and Dennison(1994) .

The aim of the investigative approach was to adapt and validate the Metacognitive Awareness Instrument -MAI, by estimating all dimensions of teachers' metacognition in the process of professional development. The instrument was adapted for teachers to self-assess their level of metacognitive knowledge and metacognitive experiences related to teaching career management, planning skills, including monitoring of their professional development pathway in relation to professional standards. Teachers who score high in metacognitive development might be able to adjust their professional development activities over time according to their training needs; teachers can adjust their planning, monitoring and control strategies in a timely and dynamic manner to optimize and facilitate their teaching career development.

Accordingly, the Metacognitive Awareness Inventory -MAI, validated as a research tool in the field of metacognitive teacher development, will benefit teachers by enhancing the metacognitive dimension and increasing professionalism. The availability of these valid multi-faceted teacher metacognition scales may also have important practical

implications for the process of in-service teacher education. Typically, most current in-service teacher education programs tend to focus on the development of cognitive and methodological skills on the one hand, and cross-curricular skills on the other. There are programs on classroom management, educational leadership, effective communication, emotion management. However, the metacognitive dimension in the professional development of teachers is poorly represented in the training on offer.

The Metacognitive Awareness Inventory - MAI can help trainers to design concrete and functional curriculum structures for teacher training and lead to the formulation of more individualized guidance to improve teachers' self-regulated learning. Trainers can track the level of active engagement of trainee-teachers through peer observation (Tenenberg, 2016), using the instrumental as an analytical framework to discriminate their behaviors in the training program to guide them in appropriate ways to develop the targeted competencies.

Metacognitive intervention strategies, such as planning, monitoring and evaluation, can improve teaching career management competence (Fathima et al., 2014). The Metacognitive Awareness -MAI tool can be used to self-explore the different characteristics of metacognition in teachers, and subsequently, teachers can carry out a professional development project by formulating clear strategic goals and establishing more targeted in-service training programs to make professional development more purposeful and effective.

References

- Aldea, C.I (2024). Metacognition assessment - a literature review of specific instruments used to measure metacognitive awareness in adults, *Social Sciences and Education Research Review*, 11:2, 330-339
- Allen, BA, Armour-Thomas E, (1993) Construct Validation of Metacognition, *The Journal of Psychology*, 127:2, 203-211,
- Bunăiașu, C.M. (2013) Conceptions and opinions regarding the self-management of the curriculum of professional development for the didactic career, *Journal of Educational Sciences&Psychology*,.III (LXV):1, 17-25.
- Balcikanli, C. (2011). Metacognitive awareness inventory for teachers (MAIT). *Electronic Journal of Research in Educational Psychology*, 9(3), 1309-1332
- Byrne, B.M. (2010). *Structural Equation Modeling with AMOS: basic concepts, applications, and programming* (2nd Edition). New York: Taylor & Francis Group.
- Cihanoglu, M.O. (2012), Metacognitive Awareness of Teacher Candidates, *Procedia - Social and Behavioral Sciences*, Volume

- 46, P. 4529-4533, ISSN 1877-0428, <https://doi.org/10.1016/j.sbspro.2012.06.290> ,
- Dumitru, D. (2013) Who is afraid of critical thinking? Integrated educational programs and critical thinking. București: Editura Universității din București.
- Fathima, M. P., Sasikumar, N., & Roja, M. P. (2014). Enhancing teaching competency of graduate teacher trainees through metacognitive intervention strategies. *American Journal of Applied Psychology*, 2(1), 27-32
- Flavell, J. H., Miller, P. H., & Miller, S. A. (2002). *Cognitive development* (4th ed.). Upper Saddle River: Prentice Hall.
- Georghiades, P. (2004) From the general to the situated: three decades of metacognition. *International Journal of Science Education*, 26(3), 365-383.
- Henter, R., Indreica, E.S. (2014) *Metacognitive training for students preparing to be kindergarten and primary school teachers, Perspectives of a Higher Quality Level of the Training of Specialists for Early Education and Primary Schooling (PERFORMER)"*, Brasov, Romania, 2014.
- Hughes, A.J. (2019). *Measuring Metacognitive Awareness: Applying Multiple, Triangulated, and Mixed-Methods Approaches for an Encompassing Measure of Metacognitive Awareness*. *Journal of Technology Education* 30(2):3-20
- Jacobs, J. E., & Paris, S. G. (1987) *Children's Metacognition About Reading: issues in Definition, Measurement, and Instruction*. *Educational Psychologist*, 22(3-4), 255-278
- Kramarski, B., & Michalsky, T. (2009). Investigating preservice teachers' professional growth in self-regulated learning environments. *Journal of Educational Psychology*, 101(1), 161-175.
- Meijer, J., Slegers, P., Elshout-Mohr, M., van Daalen-Kapteijns, M., Meeus, W., & Tempelaar, D. (2013). The development of a questionnaire on metacognition for students in higher education. *Educational research*, 55(1), 31-52.
- Myers, M., & Paris, S. G. (1978) *Children's metacognitive knowledge about reading*. *Journal of Educational Psychology*, 70(5), 680-690
- Pintrich, P., Smith, D., Garcia, T., and McKeachie W., (1993), *Predictive validity and reliability of the Motivated Strategies for Learning Questionnaire (MSLQ)*. *Educational and Psychological Measurement* 53: 801-813.
- Pintrich, P., Wolters, C & Baxter, G (2000). *Assessing Metacognition and Self-Regulated Learning*. *ISSUES IN THE MEASUREMENT OF METACOGNITION*, ed. Gregory

- Schraw & James C. Impara (Lincoln, NE: Buros Institute of Mental Measurements, 2000). Digital Edition
- Schraw, G. (2000). Assessing metacognition: Implications of the Buros symposium. In G. Schraw & J. C. Impara (Eds.), *Issues in the measurement of metacognition* (pp. 297- 321). Lincoln, Nebraska: Buros Institute of Mental Measurements.
- Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460-475
- Schunk, D. H. (1996) Goal and self-evaluative influences during children's cognitive skill learning. *American Educational Research Journal*, 33(2), 359-382
- Scriven, M. (2007). Key evaluation checklist, Western Michigan University
<https://wmich.edu/sites/default/files/attachments/u350/2014/key%20evaluation%20checklist.pdf>.
- Stevens, J. (1992). *Applied multivariate statistics for the social sciences* (2nd ed.). Lawrence Erlbaum Associates, Inc.
- Zohar, A., & Barzilai, S. (2013). A review of research on metacognition in science education: Current and future directions. *Studies in Science Education*, 49(2), 121-160.

USING COMICS AS A TOOL FOR DEVELOPING IMAGE COMPREHENSION AND LITERACY IN PRIMARY SCHOOL

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Abstract: *The study documents from the perspective of literature review on the concepts of literacy, multimodal text, comics, and image interpretation. The education in our country has implemented a series of reforms emphasizing the training of students, the interest shifting from teaching to learning, with the student at the center of attention as the main actor of the educational act. Major changes were made in education policy, reorganizing both the education system and the national curriculum. A new term we find in the new curricula is multimodal text content, and this rethought content helps to develop literacy.*

Literacy is a new term in the literature and especially in our country, it does not only refer to the ability to read and write, it is much more than that; literacy also includes the skills associated with understanding, interpreting and using written information effectively in different contexts. For primary school students, multimodal text is beneficial because it fulfills several functions simultaneously: informing, persuading, entertaining or educating. Cu ajutorul benzilor desenate se dezvoltă: abilitățile de interpretare a unei imagini, îmbunătățirea gândirii critice, învățarea permanentă, comunicarea eficientă și nu în ultimul rând, adaptabilitatea. Comics are a tool that plays a significant role in the development of imagination, free expression and understanding of images, all of which contribute to the development of literacy by forming critical and competent readers and communicators. Through the interaction between literacy and multimodal text, a deeper and more nuanced understanding of information is promoted, which is essential for active and informed participation in contemporary society.

Key words: *multimodal text, comics, curriculum, literacy, curriculum paradigms, developmental curriculum cycle, learning, images.*

Introduction

This study takes a theoretical approach that reviews the literature by providing key arguments and concepts that support the introduction of

comics as a tool for developing image comprehension in the primary school.

A very important aspect in primary education is the comprehension of text that is read, written or heard. The term used for this is literacy. Literacy is a central concept in education and personal development, referring to the fundamental skills of reading, writing and understanding texts. However, literacy is not limited to these basic skills, but also includes the ability to understand and interpret information in various forms of communication, as well as the ability to use it in everyday life to solve problems or make decisions.

With the help of the multimodal text, the comics that are part of the multimodal text, the following skills are developed: skills that help the learner to interpret a text, to communicate effectively, to improve critical thinking and to adapt more easily in different environments. The multimodal text, the comic strip in our case, is a narrative text in which two or more modes of communication are combined, its purpose being to convey information through written or spoken language, combining images with sounds, gestures and lights. (Sânmihăian F., Dobra S., Halaszi M., Davidoiu - Roman A. - 2017).

In an increasingly complex and digitized world, literacy has evolved to include key competences such as digital literacy (the ability to understand and navigate information in the digital environment), media literacy (the ability to analyse and evaluate media messages) and financial literacy (understanding economic and financial principles). These skills are essential not only for educational success but also for active and informed participation in a globalized society.

The Romanian education system underwent major changes in 2011, when the new Education Law no. 1/2011 was enacted: the preparatory class is part of the primary cycle, and the curriculum is oriented towards the formation of key competences, which are aimed at the achievement and attainment of the key competences that are necessary for a graduate to complete a curricular cycle. These reforms have not remained without consequences, so that new framework curricula have been developed, school syllabuses have been modified and digital and alternative textbooks have been designed by education specialists (Bocoş & Jucan, 2019).

Theoretical framework. Literature review

Comics

Comics are part of multimodal text. Multimodal texts can be found in many different forms: comics, picture books, subtitled movies, posters, ppt presentations, etc. all of which are an integral part of the process of educating pupils and developing literacy. Exposing students to multimodal texts stimulates the development of connections between

written and visual but also between auditory and visual, as the student is challenged to decode what is the meaning of a message that has been conveyed. (Walsh 2010)

For the development of the National Education Act in 2001 there was a serious radiography of the national curriculum as well as curriculum development on the design and impact that the national curriculum has on pupils' education (Vlăsceanu, 2002), however pupils are not exposed to activities that are comic based, there are no provisions for the use of multimodal text.

Even if the use of comics as a didactic tool is not paramount in the Romanian education curriculum, however, comics have had a long and controversial history in the context of education in other countries. Since the 1930's, their use in classrooms and other educational settings has elicited conflicting opinions (Hutchinson, 1949; Muzumdar, 2016; Yang, 2003). Over time, concerns about the content of comics, their impact on children and the educational value they have, have been intensely debated by parents, teachers and society at large (Dorrell et al., 1995). Critics of the medium argue that comics can have negative psychological effects on children through violent depictions (Wertham, 1954; Yang, 2003), lack literary value (Maher, 2018; Nesmith et al., 2011) and can encourage a disinterest in traditional reading (Dorrell et al., 1995; Yang, 2003).

In this article, when we use the term comics, we are referring to the medium itself, not necessarily to a comic book or graphic novel (McCloud, 1993). In the book "Understanding Comics. Invisible Art.", McCloud (1993) defines the medium of comics as "pictorial and other images juxtaposed in deliberate succession, intended to convey information and/or produce an aesthetic response in the viewer" (p. 9). Based on specific conventions, comics are easily recognizable, having a particular structure through boxes, eggplates, cartons, speech bubbles. (Serafini et al., 2018) Further, when we use the term graphic novel, we will refer to full-length comics, comic books, magazines containing between 20 and 40 pages, and comic strips, which are short sequences of comics that we spread in magazines, newspapers, or worksheets that we use in class, all of which form the framework of the broader comics medium. (Cary 2004) So, we will use the term comic strip in accordance with the above.

Literacy

The term literacy is derived from the English word "literacy" and refers to the ability of individuals to read, write and understand information in a variety of formats, such as written texts, audio materials and digital content. Developing literacy competence is essential for the active and effective participation of individuals in contemporary society.

According to Cambridge's dictionary, literacy is defined as "the ability to write and read" but it is also added that "literacy is a basic skill or knowledge of a subject". (<https://dictionary.cambridge.org/dictionary/english/literacy>).

Interpreted from a perspective that values the quality of education, literacy is seen as a key skill, but also as a key measure of educating the population (Roser, Ortiz-Ospina, 2018). (Roser, Ortiz-Ospina, 2018)

To measure literacy levels, instruments that measure an individual's skills in reading, writing and understanding information are essential. The instruments currently used are: PISA (Program for Student Assessment), National Assessment Instruments (Assessment Tests for Grades II, IV, VI), Adult Literacy and Life Skills Survey (ALLS), PIRLS (Progress in International Reading Literacy Study), EGRA (Early Grade Reading Assessment), IALS (International Adult Literacy Survey), Woodcock-Johnson Test. The instruments listed above are used in a variety of educational, social and professional contexts, depending on the level of training, the age of the subjects, the purpose for which it was developed.

1. The PISA (Program for International Student Assessment) test is one of the best-known instruments for measuring literacy. It is conducted by the OECD. PISA tests assess the reading, math and science literacy skills of 15-year-olds in different countries around the world. What characterizes these tests is that they include tasks that measure students' ability to interpret and understand more complex texts, to make different connections and to make correct decisions based on the information provided. OECD (2019).
2. National assessment tools are used in several countries that have developed their own standardized tests to measure literacy. In Romania standardized national assessment tests are used for pupils in grades II, IV and VI. The characteristic of the national assessment tests is that they are aligned according to the requirements of the national curriculum and aim to measure reading, writing and text comprehension skills. (Ministry of National Education, 2020).
3. The Adult Literacy and Life Skills Survey (ALLS) is a tool designed to measure the literacy level of adults. These tests look at skills in reading and interpreting documents, problem solving and the use of basic technologies. Characteristic of ALLS is that they include practice tests and quizzes to analyze the application of literacy in real-life situations. (Statistics Canada (2005). The Adult Literacy and Life Skills Survey <https://www150.statcan.gc.ca/n1/en/catalogue/89M0016X>)

4. PIRLS (Progress in International Reading Literacy Study) measures the ability of fourth graders to understand and interpret literary and informational texts. Characteristic of PIRLS is that it assesses reading in an educational context, using both narrative and expository texts (Mullis, I. V. S., & Martin, M. O., 2017).
5. EGRA (Early Grade Reading Assessment) is a tool designed to assess children's early literacy, particularly in the first grades of primary school. EGRA tests include letter recognition, word reading, text comprehension, and reading speed measurement. (Gove, A., & Wetterberg, A., 2011)
6. The International Adult Literacy Survey (IALS) measures adults' literacy skills in three main domains: prose, document and numeracy. IALS tests assess literacy use in everyday and work-related activities (OECD and Statistics Canada, 2000).
7. The Woodcock-Johnson test is used to assess different dimensions of literacy, including vocabulary, text comprehension and reading speed. It is commonly used in educational psychology to diagnose learning difficulties.

These tools provide a comprehensive picture of the literacy levels of different demographic groups and are used both to diagnose and to design various educational interventions.

Literacy levels

Literacy can be tested from an early age, in the pre-primary period. Thus, we have emergent literacy (from kindergarten to grade I) and informal reading inventory (grades II to IV).

Emergent literacy: definition and importance

Emergent literacy involves the development of fundamental knowledge and skills related to reading and writing beginning at preschool age. The concept of emergent literacy includes activities of using books containing both short texts and suggestive pictures, recognizing letters and sounds, and imitating reading by telling picture stories (Whitehurst & Lonigan, 1998).

Factors that influence emergent literacy are:

- Home environment: children who are exposed to reading at home are more likely to develop more advanced literacy skills (M. A. Evans, L. Hulak, 2020).
- Social interactions: by participating in group activities and discussions with peers and adults the learning process is activated (Vygotsky, 1978, *Mind in Society*).
- Technology: the use of interactive apps and digital resources can support early literacy (Neumann, 2018).

Informal Reading Inventory: Methodology and role

The Informal Reading Inventory is an essential tool in the assessment and development of reading and comprehension skills in primary school pupils. This tool allows teachers to identify the comprehension and fluency level of each student, facilitating personalized interventions to improve school performance.

According to the "Schools with Glitter" program, revised in May 2003, the Informal Reading Inventory includes texts graded in difficulty from pre-primary (PP) through first grade. These texts are designed to assess both oral reading fluency and comprehension, providing the examining teacher with a clear picture of the skills of the students being tested. (Kovacs M., 2023).

Assessments conducted in this program have shown that there is a strong correlation between text complexity and students' reading rate. Students who read more complex texts demonstrated a higher reading rate, only their comprehension was at an instructional level, thus suggesting to the examining teacher the need for a balance between fluency and comprehension of the text being read (Kovacs M., 2023).

In order to support the development of reading skills, it is essential that teachers use tools such as the Informal Reading Inventory, adapting the materials and teaching strategies used, to the specific needs of each student. In this way an appropriate progression in learning can be ensured as well as a solid foundation of literacy skills.

The informal word inventory can be used for:

- Identifying vocabulary gaps: students from disadvantaged socioeconomic backgrounds may have a smaller vocabulary and early interventions can be made with this tool (Hart & Risley, 1995).
- Progress monitoring: regular assessment of subjects helps teachers to adjust their teaching strategies according to students' needs (M.Hu, P.Nation, 2000).

By implementing instructional strategies based on literacy studies, teachers can make a significant contribution to the development of students' language skills, providing a solid foundation for later literacy.

The role of comics in literacy development

Comic strips have been recognized as valuable tools for literacy development because of their unique combination of visual and textual elements. The synergy between the two elements of comics facilitates the comprehension and interpretation of information, offering attractive ways to improve writing and reading skills (Ranker, 2007), stimulate interest in reading (Smetana & Grisham, 2012), help develop narrative and writing skills (Ranker, 2007) and support language learning (Liu, 2004).

Improve reading skills

The comics feature evocative illustrations that are accompanied by short texts, making reading accessible to beginners and those with reading difficulties. Understanding of vocabulary and grammatical structures is supported by the visual contexts provided by the comics, which in this way also help to reinforce fundamental reading skills (Ranker, 2007).

Stimulating interest in reading

Through the thematic diversity and engaging nature of comics, readers can be motivated to love reading by engaging in reading activities. Comics help to develop a positive attitude towards readers through their interesting stories and visual appeal, making comics an effective resource to encourage reading from a very early age (Smetana & Grisham, 2012).

Developing narrative and writing skills

By analyzing and creating comics, students are helped to understand narrative structure, develop storytelling skills and improve their writing skills. Creating comics challenges students to think critically and creatively and to explore different ways of expressing and structuring more complex ideas (Ranker, 2007).

Support language learning

Comic strips provide a visual support to facilitate the retention and comprehension of vocabulary and idiomatic expressions for foreign language learners. Through the illustrative contexts, learners are helped to blend suggestive images with written kimbaj, thus encouraging intuitive learning (Liu, 2004).

Comics thus prove to us that they have potential, they support learning, but above all they contribute to the development of literacy in an interactive and engaging way, providing a valuable resource for education and for the promotion of reading in general.

Conclusions

Comics are important in literacy development because they combine pictures with text, making them more accessible to readers with different literacy levels. The multimodal approach supports comprehension for readers who may have difficulty decoding more complex texts.

Narrative comprehension is improved with comics; thanks to the narrative structure of comics, readers are helped to develop sequencing skills and to recognize cause-effect relationships. Moreover, by using images to convey actions and emotions, additional context is provided, thus improving understanding of complex messages. Students who read comics are better able to analyze narrative and symbolic structures (Woolston J. M., 2014).

Using comics to educate students can promote critical thinking and analysis. Taking the example of Art Spiegelman's graphic novel *Maus*, we see that graphic novels can include complex themes, symbols and subtexts, which challenges readers to interpret the messages on a much deeper level. Analyzing graphic novels of this kind can encourage critical thinking and debate about particular cultural, social or political themes (Spiegelman A., 2012).

So, we can say that comics are not just a form of entertainment, but a powerful tool in the development of literacy. They improve reading access, narrative comprehension, language skills and critical thinking, thus contributing to the development of competent and confident readers. By integrating them into the instructional-educational process, they provide valuable new opportunities for learning.

By using multimodal texts, teachers can design non-formal activities based not so much on the educational goals as on formative and non-formal knowledge that are characterized by flexibility, while having the quality of optional or optional activities (Roman, A., Coșarba, E., ERD 2020

In order to put the learner in front of learning situations that lead to the achievement of behavioral changes, the teacher designs learning situations, on several levels: "as situations of interference - a permanent process through which the student is taught to learn and how to learn; as performance reporting through which students are motivated and hierarchized; through the experience of interaction, communication, and practice that are predetermined by the teachers and through the relative stability that shows that the behavioral change produced by learning is lasting". (Roman, A., Balaș, E., 2014)

References

- Bocoș, M., Jucan, D. (2019). *Fundamentele pedagogiei. Teoria și metodologia curriculumului. Repere și instrumente didactice pentru formarea profesorilor*. Pitești: Editura Paralela 45.
- Bocoș, M., Răduț-Taciu, R. Stan, C. (2018). *Dicționar praxiologic de pedagogie. Volumul IV: M-O*. Pitești: Editura Cartea Românească Educațional.
- Cary, S. (2004). *Going graphic: Comics at work in the multilingual classroom*. Heinemann Portsmouth, NH.
- Dorrell, L. D., Curtis, D. B., & Rampal, K. R. (1995). Book-worms without books? Students reading comic books in the school house. *Journal of Popular Culture*, 29(2), 223–234.
- Evans M.A., Hulak L., 2020, Learning to read at home: Kindergarten children's report in relation to observed parent behaviour, ScienceDirect <https://www.sciencedirect.com/science/article/abs/pii/S0885200618301455>

- Gove, A., & Wetterberg, A. (2011). *The Early Grade Reading Assessment: Applications and Interventions to Improve Basic Literacy*. RTI Press, <https://www.rti.org/rti-press-publication/early-grade-reading-assessment-applications-interventions-improve-basic-literacy>
- Hart, B., & Risley, T. R. (1995). Meaningful Differences in the Everyday Experience of Young American Children
- Hu M., Nation P., 2000, Unknown Vocabulary Density and Reading Comprehension, ResearchGate
- Hutchinson, K. H. (1949). An experiment in the use of comics as instructional material. *The Journal of Educational Sociology*, 23(4), 236–245. <https://doi.org/10.2307/2264559>
- Kachorsky, D., Reid, F.S., (2022), Teaching with Comics for the First Time: Traditional Literacy and Non-Traditional Texts in Content Area Classrooms, ResearchGate
- Kovacs M., 2023, Fluența citirii orale și comprehensiunea, Toți copiii citesc, https://toticopiiiцитesc.ro/fluenta-citirii-orale-si-comprehensiunea/?utm_source=chatgpt.com
- Liu, J. (2004). "Effects of Comic Strips on L2 Learners' Reading Comprehension." *TESOL Quarterly*, 38(2), 225-243. Cercetarea analizează impactul benzilor desenate asupra înțelegerii lecturii la învățătorii de limbi străine.
- Maher, B. (2018, November 17). Adulting. Real Time with Bill Maher Blog; Real Time with Bill Maher Blog. <https://www.real-time-with-bill-maher-blog.com/index/2018/11/16/adulting>
- Matthew Effects in Reading: Some Consequences of Individual Differences in the Acquisition of Literacy, ResearchGate https://www.researchgate.net/publication/230853161_Matthew_Effects_in_Reading_Some_Consequences_of_Individual_Differences_in_the_Acquisition_of_Literacy
- Max Roser and Esteban Ortiz-Ospina (2019). Literacy. Published online at [OurWorldInData.org](https://ourworldindata.org/literacy) retrieved from: <https://ourworldindata.org/literacy>
- McCloud, Scott, (2019), Să înțelegem benzile desenate. Arta invizibilă, Ed. Grafic
- Narey, M., *Educating the Young Child* (2009)
- Ministerul Educației Naționale (2020). *Ghid pentru evaluarea competențelor fundamentale*. Disponibil la: edu.ro
- Mullis, I. V. S., & Martin, M. O. (2017). *PIRLS 2016 International Results in Reading.*, <https://timssandpirls.bc.edu>
- Nesmith, S., Cooper, S., & Schwartz, G. (2011). Exploring graphic novels for elementary science and mathematics. *School Library Research*, 14.
- Neumann, M. M. (2018). The Role of Digital Technologies in Early Childhood Literacy Development. *Computers & Education*

- OECD (2019). *PISA 2018 Assessment and Analytical Framework*. OECD Publishing.
Disponibil la: <https://www.oecd.org/pisa>
- OECD and Statistics Canada (2000). *Literacy in the Information Age: Final Report of the International Adult Literacy Survey*. OECD Publishing, <https://www150.statcan.gc.ca/n1/en/catalogue/89-588-X>
- Ranker, J. (2007).** "Using Comic Books as Read-Alouds: Insights on Reading Instruction from an English as a Second Language Classroom." *The Reading Teacher*, 61(4), 296-305. Studiul examinează utilizarea benzilor desenate în predarea limbii engleze ca a doua limbă și efectele asupra competențelor de citire.
- Roman, A., Coșarbă, E., ERD 2020 Education, Reflection, Development, Eight Edition The motivation of primary school teachers regarding non-formal activities, ResearchGate
- Roman, A., Balas, E., (2014), Proiectarea situațiilor de învățare, Edutura Eikon – Cluj-Napoca
- Sânmișăian F., Dobra S., Halaszi M., Davidoiu – Roman A. Limba și literatura română: clasa a V-a. Editura București: Art, 2017
- Serafini, F., Kachorsky, D., & Reid, S. (2018). Revisiting the multimodal nature of children's literature. *Language Arts*, 95(5), 311–321.
- Smetana, L., & Grisham, D. L. (2012).** "Graphic Novels in the Classroom: Curriculum Design, Implementation, and Reflection." *The Reading Teacher*, 66(2), 115-124. Acest articol explorează integrarea benzilor desenate în curriculum și impactul lor asupra dezvoltării literației.
- Spiegelman A., 2012, Maus. Povestea unui supraviețuitor, Editura ART
- Vlăsceanu, L. (coord.). (2002), Școala la răscruce. Reformă și continuitate în curriculumul învățământului obligatoriu. Studiu de impact, Iași: Polirom
- VYGOTSKY L. S., 1978, Mind in Society The Development of Higher Psychological Processes Michael Cole Vera John-Steiner Sylvia Scribner Ellen Souberman Cambridge, Massachusetts London, England 1978
- Walsh, M. (2010). Multimodal Literacy: What Does It Mean for Classroom Practice? *Australian Journal of Language and Literacy*, 33, 211-239
- Wertham, F. (1954). *Seduction of the innocent*. Rinehart New York. http://www.worldlibrary.org/articles/seduction_of_the_innocent
- Whitehurst, G. J., & Lonigan, C. J. (1998). Child Development and Emergent Literacy. *Journal of Early Childhood Literacy*
- Woodcock, R. W., McGrew, K. S., & Mather, N. (2001). *Woodcock-Johnson III Tests of Cognitive Abilities*. Riverside Publishing.

- Woolston J. M., 2014, *Graphic Novels and Comics in the Classroom: Essays on the Educational Power of Sequential Art* Carrye Kay Syma and Robert G. Weiner, Editors. Jefferson, NC: McFarland, 2013, ResearchGate
- Yang, G. (2003). *Comics in Education: History*. GeneYang.com. <http://www.geneyang.com/comicsedu/history.html>

INNOVATIVE APPROACHES TO STIMULATING INTEREST IN READING

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Abstract: *This study explores innovative methods to stimulate primary school students' interest in reading, emphasizing non-formal educational approaches. The research was conducted over six months at "Aron Cotruș" Junior High School in Arad, involving an experimental and a control group. Various strategies, including literary cafés, book review competitions, and interactive reading activities, were tested. The findings highlight that non-formal methods significantly enhance students' engagement, reading skills, and overall enthusiasm for books. Additionally, teachers involved in implementing these approaches reported positive changes in their instructional strategies and student motivation. The study concludes that integrating non-formal reading techniques into the curriculum fosters a positive reading culture and improves educational outcomes.*

Keywords: *reading engagement; primary education; innovative teaching methods; non-formal education; book literacy; interactive learning; student motivation.*

Educational research is a fundamental component in the development and improvement of education systems, teaching practices and educational outcomes. It plays a crucial role in sharing knowledge and findings obtained through studies and analyses in the field of pedagogy. This essay explores the importance of presenting educational research and how it contributes to the evolution of education.

Educational research is a process through which researchers share the

results of their studies with the pedagogical community, with the aim of supporting the improvement of educational practices and policies. This presentation can take many forms, from scientific articles and conferences to seminars and trainings for teachers. Regardless of the form chosen, this research has multiple benefits.

First, educational research offers the opportunity to exchange ideas and experiences between researchers, educators and other stakeholders. This collaboration is essential for the continuous development of the field and for identifying best practices in education. By presenting their results, researchers can receive valuable feedback and develop more effective solutions to challenges in the education system.

Secondly, pedagogical research contributes to the dissemination of knowledge and to raising awareness of educational issues. Teachers, parents and policymakers can be informed about the latest findings in the field and can make better-informed decisions. This is particularly important in a constantly changing educational environment, where adapting to the new needs of students and society is crucial.

In addition, pedagogical research can stimulate the career development of teachers. Teachers who are involved in research and who present their findings have the opportunity to improve their teaching skills, increase their professional status and gain recognition within the school community. This process can also motivate teachers to engage in their own action research, aimed at specifically improving the learning process in their classrooms. (Coşarbă & Roman, 2020)

Educational research can also contribute to the development of educational policy. By providing data and sound arguments, researchers can influence the decisions made by decision-makers and contribute to the development of more effective educational policies.

Through these presentations, researchers can draw attention to urgent issues in the field of education and promote significant changes.

Educational research is an essential tool for improving the learning process. It facilitates the exchange of ideas, the dissemination of knowledge and the development of more effective educational practices. It also contributes to the development of teachers' careers and the development of better educational policies (Torkos, 2021). Through educational research, we can build a better education system that meets the needs of students and contributes to the formation of a more educated and equitable society.

Research objectives:

1. To identify and analyze the methods and strategies currently used by teachers to stimulate a taste for reading in primary school students.
2. To examine teachers' personal and innovative approaches to

promoting reading among primary school students.

3. To assess the impact of these approaches on learning outcomes and interest in reading among primary school students.

4. To identify examples of good practice in promoting reading in primary school and document them in detail.

5. To develop and present a detailed case study that illustrates a personal and innovative approach to stimulating a taste for reading, providing details on the context, strategies and results.

6. To analyse the factors that influence the success or failure of innovative approaches to promoting reading among primary school students.

7. To provide practical recommendations for teachers and educators to improve their approaches to promoting reading.

8. To contribute to the development of a knowledge base in the field of pedagogical research on the promotion of reading in the primary cycle and to highlight the importance of personal and innovative approaches in this context.

9. To disseminate the results of the research in the educational community, so that other teachers and education professionals can benefit from our conclusions and recommendations.

The research objectives are well defined and focus on exploring and promoting personal and innovative approaches to stimulating reading enjoyment in primary school students. These objectives will help guide our research and achieve significant results in the field of promoting reading in primary school. Similar effects were also found in the study conducted by Tiberiu Dughi, Sofia Cotrău (2014). The results of the study conducted on 30 primary school students highlighted behavioral changes expressed through increased spontaneity, receptivity and active participation in students.

Our research hypothesis focuses on exploring the impact of the innovative approach "Book reading: a personal and innovative approach to stimulating reading enjoyment in both teachers and primary school students". We argue that the integration of this methodology into the teaching-learning process can have a significant effect on the development of reading skills and a passion for reading, consequently, this method will contribute to the formation of an educational environment in which reading becomes an exciting and rewarding experience, thus benefiting the overall development of primary school students.

The organization and conduct of pedagogical research on the theme "Book literacy - a personal and innovative approach to stimulating a taste for reading for both teachers and primary school students" is a particularly valuable initiative in the development of education and training of children in the primary school. This theme focuses on the

importance of reading and how we can promote a passion for books among teachers and students.

Pedagogical research begins by defining its objectives. In this case, the main objective is to find innovative methods to develop an appetite for reading among both teachers and primary school students. This personal approach focuses on the individual needs of each teacher and student, recognizing that each person has different preferences and interests when it comes to reading.

“A crucial aspect of pedagogical research is the identification of innovative methods” (Vasilescu, 2016). This can involve developing personalized reading programs for each student, using technology to create interactive and engaging learning experiences. Reading workshops and events can also be organized, where teachers and students can also share experiences and stories related to the books they have read.

Another important aspect of pedagogical research in this topic is impact evaluation. Different evaluation tools and methods can be used to measure the evolution of reading appetite among teachers and students. For example, questionnaires, interviews or observations can be used to collect data on changes in reading habits and attitudes towards reading. “The results of pedagogical research can be used to develop strategies and practical recommendations for teachers and educational institutions. For example, guides for teachers can be developed with suggestions on how to encourage reading in the classroom or how to choose appropriate books for students” (Vasilescu, 2016). Training programs for teachers can also be developed to help them become more effective in promoting reading.

Research location: “Aron Cotruș” Junior High School, Arad

Research period: 6 months (September 2023-February 2024)

- September 2023 (choosing work samples, observing students and their teachers, collecting preliminary data);
- October 2023 (pre-experimental stage);
- November 2023- January 2024 (experimental stage + demonstrative intervention within the zonal pedagogical circle of 4th grade teachers);
- February 2024 (post-experimental stage).

Research sample:

a) The sample consists of 4th grade students who are included in the Step by step education system. 20 students from 4th grade A (experimental sample) and 4th grade B (control sample) will be selected from the "Aron Cotruș" Junior High School.

b) The sample consists of the four teachers who teach in the two classes that form the experimental sample and the control sample.

Sample content:

a) “An innovative approach will be used for students by creating new teaching strategies, such as literary cafes, book review competitions or interactive activities that will increase their enthusiasm for reading” (Jianu, 2018).

b) “A personalized training strategy will be developed for teachers, which will help them acquire innovative methods of stimulating students’ interest in reading. This could involve continuous training, coaching or creative workshops” (Jianu, 2018).

In the experimental pedagogical research on the topic “Book literacy - a personal and innovative approach to stimulating a taste for reading for both teachers and primary school students”, we used a variety of modern teaching methods and appropriate teaching materials.

The teaching methods used in our research are (Grigorescu, 2020):

- Thinking Hats (De Bono):

We used this method to encourage creative thinking of participants on how to improve reading activities and promote a passion for reading.

- Kahoot:

We created interactive Kahoot games to assess and stimulate students' knowledge and interest in books. We used these games to test the acquired knowledge and to engage them in a fun way.

- Gallery Tour:

We organized a tour of a "gallery" of books to expose students to a variety of books and authors. This is an event where teachers and students share favorite books and motivate why they like them.

- Graphic Organizer:

We created graphic organizers to help students analyze and compare different books. We used flowcharts and mind maps to highlight characters, plot, setting, etc.

- Snowballs:

We started from a concept or idea and let students and teachers add ideas or suggestions to develop creative approaches to reading and learning.

- Writing workshops:

We organized writing workshops for students in which they could create their own stories or express their thoughts and feelings related to books. These workshops stimulated imagination and writing skills.

Teaching materials that we used were (Grigorescu, 2020):

a. Resources for teachers: reading approach guides, lesson outlines or additional materials to help them implement their personal approach in the classroom.

b. Resources for students: books, educational games, worksheets and other resources to motivate them to read and explore books in an innovative way.

To conduct the experimental pedagogical research, we used these methods to collect data and evaluate the impact of the “Book Literacy”

approach on students' and teachers' interest and reading skills. We made sure that we planned and structured the research in accordance with the research objectives and that we used appropriate data collection methods, such as questionnaires, observations, or interviews, to evaluate the effectiveness of the proposed approach.

The independent variable (IV) is the factor that we studied to see how the innovative-nonformal methods approached influence the taste for reading. The independent variable is the type of reading method approach: innovative, technological, and other specific methods.

The dependent variable (DV) is the measurement and outcome that I want to quantify and evaluate according to the independent variable. In this case, the dependent variable will include:

- The degree of involvement of teachers and students in reading.
- Increased interest in reading among students.
- Performance on reading tests or qualitative reading assessments.
- Number of books read by students.
- Feedback from teachers and students on the non-formal reading methods used.

Control sample: The control sample was included in the experiment to compare their results with those obtained in the groups exposed to methods adapted to learning styles.

This group did not benefit from any specific adaptation of teaching and assessment methods, and followed the standard methods used in the reading approach.

Control sample size: 20 students (7 boys, 13 girls), 2 teachers

Experimental sample size: 20 students (9 boys, 11 girls), 2 teachers

Methods for adapting teaching and evaluation methods: Non-formal teaching methods were used that we adapted to the activities we carried out.

Conducting the research and interpreting the results

To conduct our experimental pedagogical research on the topic of "Book literacy - a personal and innovative approach to stimulating the taste for reading for both teachers and primary school students", it is important to follow a well-structured methodology. This includes two major preparatory stages:

- Establishing research objectives: I defined the specific objectives of the research, such as evaluating the effectiveness of non-formal methods of promoting reading among primary school teachers and students.
- Literature review: I searched for relevant resources in the specialized literature to document myself on non-formal techniques and methods for promoting reading. I also analyzed previous studies that

focus on innovative approaches to stimulating reading.

Development of the experimental methodology:

1. I chose a control sample and an experimental sample to test non-formal methods in approaching reading at the primary school level.

2. I initially established the criteria for selecting participants (primary school teachers and students) and ensured that they were representative of the target sample.

3. I developed several detailed lesson plans for implementing non-formal methods in the classroom.

4. I decided how I would collect data, measure success, and evaluate results.

Implementing non-formal methods:

1. I organized and implemented lessons using the chosen non-formal methods.

2. I ensured that teachers and students understood the purpose and procedures involved.

Data collection:

1. I used data collection tools, such as questionnaires, interviews, and personal observations, to evaluate the impact of non-formal methods.

2. I collected data from teachers and students, including their feedback.

Data analysis:

1. I processed the collected data to identify trends and significant results.

2. I used statistical techniques to assess significant differences between the control and experimental samples.

Interpreting the results:

1. I analyzed the research results to understand the impact of non-formal methods on stimulating reading in teachers and students.

2. I discussed with my teachers the implications of the results for pedagogy and teacher training.

Reporting the results:

1. I developed a detailed report of the experimental research within this bachelor's thesis, which includes the context, objectives, methodology, results and conclusions.

2. I will present the results of my research at the bachelor's exam and would like to capitalize on them in conferences or publish them in scientific journals.

Evaluating and adjusting the methods:

1. I took into account the feedback received from the participants and adjusted the non-formal methods to make them more effective.
2. I intend to continue to monitor the long-term impact of these methods.

Dissemination of research:

1. I intend to share my findings with the UAV pedagogical community and other stakeholders to contribute to the improvement of pedagogical practices regarding my pedagogical research topic.

Pre-experimental stage

The pre-experimental stage is an essential part of experimental pedagogical research and is used to establish the basis for my study. In the case of my research on non-formal teaching methods for stimulating a taste for reading among primary school teachers and students, this stage was carried out in both the experimental and control samples and had the objective of recording the stage and the way in which reading is approached through the traditional methods used until then.

I have established the next steps of my research, including the methods and procedures that I will use in the experimental stage. I have thought about how I will collect and analyze the data and how I will evaluate the effectiveness of non-formal methods in stimulating a taste for reading.

The pre-experimental stage involves observing and recording preliminary data on the type of reading and the degree of involvement of primary school students and teachers.

We used as specific data collection methods to measure reading and the degree of involvement in the act of reading:

- a. Questionnaires or interviews with participants to assess interest and attitude towards reading.
- b. Tests to assess reading skills and text comprehension.
- c. Direct observations of reading behavior.
- d. Reading activity log and time allocated to reading.

This information will later serve as a basis for comparison with the results obtained in the psychopedagogical experiment, to assess the impact of the intervention and to identify any necessary improvements in the learning and communication process.

The initial test had the following results:

Within the experimental sample, the following results were obtained: 8 children obtained the FB grade, 5 children obtained the B grade, 4 children obtained the S grade, and 3 children obtained the I grade.

Within the control sample, the following results were obtained: 9 children obtained the FB grade, 6 children obtained the B grade, 3 children obtained the S grade, and 2 children obtained the I grade.

Experimental stage

The pedagogical research on non-formal methods for stimulating a taste for reading among primary school students was carried out in the period November 2023- January 2024 and involved both the control sample and the experimental sample. The main purpose of this stage was to evaluate and compare the effectiveness of non-formal approaches in promoting reading compared to traditional methods.

Implementation of Non-formal Methods

Organization and implementation of lessons:

We implemented the non-formal methods chosen within the experimental sample, carefully monitoring the process and interaction between teachers and students. Observations included the level of student engagement, interactivity, and the degree of adaptability of the methods in different learning contexts.

Ensuring understanding of the purpose and procedures:

We ensured that both teachers and students clearly understood the purpose and modalities involved in using these non-formal methods. Training sessions were organized and informative materials were distributed to reinforce understanding.

Data collection and analysis

Use of data collection instruments:

We applied the same data collection instruments used such as questionnaires, observations, and standardized tests, as used in the pre-experimental stage, to assess changes in reading skills and student engagement in the educational process.

Data processing and analysis:

We analyzed the collected data in depth to identify significant differences and trends between the groups that benefited from non-formal methods and the control groups. The analysis included the assessment of individual progress and the assessment of the impact at the level of the entire educational community.

We also processed the collected data to identify significant differences and trends between the experimental and control samples.

Interpretation and reporting of the results

Interpretation of the results:

The results obtained indicated a significant improvement in reading skills among students exposed to non-formal methods. Notable increases were observed in the level of text comprehension, increased interest in reading and active participation in discussions related to the reading content.

We analyzed the results obtained following the implementation of non-

formal methods to understand their impact on stimulating reading.

Final report development:

We have compiled a thorough analysis of the experimental research, detailing the context of the study, the methodology used, the results obtained and the conclusions we reached from the data analysis. This report will serve as a basis for future recommendations and will be made available to the teachers involved for analysis and feedback.

Within the experimental sample, the results of “Very good” prevailed, with 11 out of the 20 students obtaining this grade. The “Good” grade was obtained by 8 students, and the “Sufficient” grade by 1 student, thus no results with the “Insufficient” grade were recorded in the experimental sample.

Within the control sample, the results of “Very good” and “Good” were equal.

Out of the total of 20 students, 9 of them obtained the grade "Very good", another 9 students obtained the grade "Good", and 2 students obtained the grade "Sufficient". And in this sample, there were no results with the grade "Insufficient".

In the post-experimental stage, the emphasis shifted to the implementation and consolidation of the results obtained during the experimental research. The initial data and the results obtained from the experimental process served as a starting point for the development and consolidation of pedagogical practices in the field of stimulating reading in the school environment.

We implemented a series of post-experimental strategies to consolidate and extend the results obtained in the experimental stage. These strategies included:

- Feedback and reflection sessions: Regular feedback and reflection sessions were organized, in which the teachers we collaborated with were able to share their experiences related to the implementation of non-formal methods in the classroom. This process facilitated the exchange of ideas and the identification of the most effective approaches to improving reading teaching practices.
- Continuous adaptation of non-formal methods: Based on post-experimental data and feedback received, we continued to adjust and adapt the non-formal methods used during the research. This process was crucial for the constant optimization and improvement of pedagogical approaches.
- Expanding practices in the educational community: We sought to expand the benefits of our findings by sharing the results and effective methods with other schools or teachers in the educational community. This effort was intended to contribute to the overall improvement of pedagogical practices throughout the community.

The overall performance of the students in the experimental sample is

encouraging, with most students achieving good and very good results. In conclusion, the post-experimental stage represented a continuation of efforts to develop and improve pedagogical practices, based on the results and conclusions obtained from the experimental research. The continuous approach, adaptation and expansion of the benefits of our findings were fundamental to ensuring a sustainable stimulation of reading within the school environment.

Conclusions of the experimental research

The conclusions of the didactic experimental research on the impact of the innovative approach "Book Citizenship" on stimulating the taste for reading at the level of teachers and students in the primary cycle demonstrated a series of significant and promising results.

The integration of the "Book Citizenship" method in the teaching-learning process generated a notable increase in students' interest and involvement in reading. Students showed increased curiosity about books and developed a positive and enjoyable attitude towards the reading process. A significant improvement in the reading skills of students who participated in this innovative method was observed. They showed progress in reading speed, text comprehension and the ability to analyze and interpret information from books.

Teachers' participation in implementing the "Book Literacy" method had a positive impact on their approach to promoting reading. Teachers observed a change in students' enthusiasm and involvement in reading activities, which motivated them to continue and adapt this method within their teaching process.

The integration of this innovative approach contributed to the formation of an educational environment in which reading became an exciting and rewarding experience. Students perceived reading as an enjoyable activity and associated it with positive experiences, which led to the creation of a reading culture in school and outside it.

The long-term impact of this methodology was reflected in the overall development of primary school students. They demonstrated an increase in vocabulary, improved communication skills and openness to exploring and understanding the world around them through books.

These findings support the initial hypothesis that integrating the "Book Literacy" method into the educational process can have a significant impact on stimulating a taste for reading among both teachers and primary school students. By promoting a positive attitude towards reading and developing reading skills, this method proves to be a valuable resource in transforming the educational process into an engaging and beneficial experience for the overall development of students.

Rekindling interest in reading among primary school students from a

non-formal perspective is a crucial theme in the context of contemporary education. This paper focuses on investigating and deeply understanding how non-formal methods can be used to encourage and maintain interest in reading among primary school students.

The research identified several key findings.

First, it was observed that non-formal approaches, such as interactive activities, role-playing games and interactive stories, have a significant impact on stimulating interest in reading. Students are more actively engaged when the learning process is interactive and enjoyable, allowing them to develop their reading skills in a relaxed and fun environment.

It was also found that the involvement of parents and the community in promoting non-formal reading had positive results. When these actors are involved in reading activities, children are more likely to discover the pleasure of reading and develop a lasting interest in books and diverse texts.

The implications of these findings for teachers and education policymakers are significant. Educators should adopt non-formal strategies in the teaching process to increase students' interest in reading. Developing educational programs that integrate non-formal methods could lead to increased student engagement and achievement in reading skills. In addition, education policymakers should support and promote collaboration between schools, communities, and families to create an enabling environment in which reading is considered an enjoyable activity and essential for children's personal development.

In terms of directions for future research, there are considerable opportunities to explore non-formal methods and their impact on the development of reading skills among primary school students. Further studies could investigate in depth the effectiveness of different non-formal approaches, adapting them to the specific needs of different groups of students and communities. Research could also explore more deeply how technology and new ways of presenting content can be integrated into non-formal methods to enhance interest and comprehension of reading.

In conclusion, this paper highlights the importance and potential of non-formal methods in rekindling interest in reading among primary school students. Implementing these approaches could represent a significant step towards creating an educational environment in which reading becomes not only an obligation, but also an enjoyable activity and beneficial for children's personal development.

References

Coşarbă, E.M. & Felicia Roman, A. (2020). The Motivation of Primary School Teachers Regarding Non-Formal Activities. *European*

Proceedings of Social and Behavioural Sciences, 104.

Dughi, T., Cotrău, S. (2014), Child development through bibliotherapy, *Journal Plus Education*, Vol X, no. 1 (2014), ISSN: 1842-077X, E-ISSN (online) 2068 – 1151 No. 2, pp. 239 -250;

Enache, A. (2016). Reading as a factor in the development of students' skills in primary school, Polirom Publishing House.

Grigorescu, E. (2020). Promoting reading in primary school: Strategies and methods, Didactic and Pedagogical Publishing House.

Ionescu, R. (2015). Reading as a non-formal experience for primary school students, Didactic and Pedagogical Publishing House.

Jianu, M. (2018). Pedagogical innovations in promoting reading among schoolchildren, Aramis Publishing House.

Manea, C. (2019). Development of reading skills in a non-formal context for primary school students, University Publishing House.

Torkos, H. (2021). Communication competences development in preschool through language education activities, *Educația Plus*, 28(1), 205-216.

HOW PRESCHOOL CHILDREN SPEND THEIR FREE TIME

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Abstract: *The research aimed to analyze how preschool children spend their free time. Three research objectives were outlined: identifying parents' perceptions of preschoolers' free time, analyzing the locations where preschool children spend their free time, and identifying leisure activities for preschoolers, including analyzing the gender perspective in choosing leisure options. The participant group comprised 130 subjects, parents of preschool children, who responded to a questionnaire. The most selected leisure options for children were as follows: "playgrounds equipped for children" ($M=3.69$; $SD=.703$), "parks" in general ($M=3.55$; $SD=1.086$), and "puppet theaters/places where children's shows are held" ($M=2.90$ $SD=.939$). Preferred free-time activities with parents include: "playing various games with the child" ($M=4.30$; $SD=.920$), "going outside to play with other children" ($M=4.18$; $SD=.952$), and "taking walks or going out in nature" ($M=4.11$ $SD=.990$). Outdoor activities are favored by preschool children, regardless of gender, while indoor activities complement these.*

Key words: *preschoolers; leisure activities; indoor and outdoor activities.*

Introduction

Preschool children's free time refers to the time remaining after they return from kindergarten, excluding time for sleep, meals, and hygiene. Free time is recognized as providing children with relaxation, social interaction, self-development (Zarezadeh & Rastegar, 2023), and cognitive performance improvement (Zhang et al., 2020). It is also a wonderful opportunity for learning. H.A. Raynor et al. (2009) discussed specific "patterns of children's leisure time," which include recommendations for children and their families and factors contributing to enhancing preschool-aged children's leisure time. Insufficient quality free time spent between parent and child can be associated with lower

levels of development, which is why promoting parental opportunities to engage in quality free time with their children should be a priority (Waters, Salinas-Miranda, & Kirby, 2023).

Background

Increasingly, the term „intensive parenting" is being discussed in Western cultures. This form of parenting aims to control children's leisure experiences, shifting the focus from free play to various adult-organized activities, citing urban risks that need to be controlled through protective measures (Silonsaari, Simula, & Brömmelstroet, 2024). Parents perceive the quality of life in relation to the level of activation of leisure activities, diversity, intensity, and the pleasure children derive from participation (Badia et al., 2013; Raz-Silbiger et al., 2015).

It is essential for parents and their children to decide together on the types of activities to undertake (sports, watching children's TV programs, indoor games, cultural and artistic activities, computer games, etc.) (Havigerová, Šnoblová, & Truhlářová, 2015). Key factors influencing children's outdoor experiences include pavement smoothness, integration of natural elements, specific characteristics like play facilities, rest areas, or access to commercial facilities (Wang et al., 2024).

Spaces for preschool children's leisure should become true „child-friendly urban communities" (Wang et al., 2024). Children use outdoor spaces for play, physical exercise, learning, and fun (Mani & Woolley, 2024), all of which significantly impact their mental and overall health (Andrusaityte et al., 2020). Trees, shrubs, flowers, and plants in children's play landscapes stimulate their physical activity (Boldemann et al., 2011; Mani & Woolley, 2024). Outdoor play environments equipped with nature's elements, such as trees, ditches, stones, grass, and flowers, encourage longer engagement in observation-based play (Squires et al., 2024). Another study examined the impact of urban residential environments on perceived child safety, identifying the richness of natural materials as the most important feature, followed by space size. However, dense vegetation negatively impacted safety perceptions, as the visual stimulation provided by environmental features influenced perceived personal safety (Gao, Zhu, & Cheng, 2024). Urban planning, policies, and decision-making processes should prioritize the proximity of green spaces, their frequency of use, and the importance of informal natural recreation areas in the future (Watson et al., 2023).

Outdoor play, whether in equipped or unequipped spaces, is a leisure activity children can undertake under parental or other adult supervision, such as grandparents. It is a good alternative to screen-based activities (Jongenelis et al., 2024). Screen time increases with age, and patterns

begin in the preschool years (Mota et al., 2019). Despite the known harmful effects of excessive screen exposure for preschoolers, many parents do not regulate their children's screen time (He et al., 2005). Additionally, factors such as the child's and mother's age and birth order among siblings significantly influence screen time duration (Walaa et al., 2023). Preschoolers' physical activity has also been studied, showing lower activity levels on weekends than weekdays, with boys being more active than girls (Nilsen et al., 2019). Indoor recreation rooms and playgrounds increase the likelihood of preschoolers being active (Barbosa et al., 2016).

Storytelling with parents is another favorite activity, providing early exposure to print materials. Early exposure to print is linked to language competencies such as oral language and reading comprehension (Zivan & Horowitz-Kraus, 2020).

From a gender perspective, girls attend artistic activities more frequently than boys, who prefer sports activities. Boys are significantly more likely to enjoy computer games, construction games, and military games, while girls more often prefer board games, playing "family," and role-playing various professions (Sobkin & Skobeltsina, 2014).

Methodology

The primary objective of the research was to analyze how preschool children spend their leisure time. Three secondary objectives were outlined: (1) identifying parents' perceptions of their preschool children's leisure time, (2) analyzing the places where preschool children spend their leisure time, and (3) identifying leisure activities for preschool children, including a gender-based perspective on leisure choices.

The survey method was employed, with the research instrument being a questionnaire specifically developed and validated for this study (Cronbach's Alpha value of .893, indicating high consistency). Data collection occurred between April and May 2024. Consent was obtained prior to the use of the research instruments, with participants being informed about the study's purpose, methods, instruments, associated risks, and their rights as participants. Confidentiality of data was assured. On average, participants took 15–20 minutes to complete the questionnaire.

The questionnaire comprised four dimensions: information about the child's life, information on leisure opportunities, information about the child's leisure time, and demographic details. Questions included dichotomous choices, multiple-choice options, and Likert-scale items.

The participant group consisted of 130 parents of preschool children, 91.5% (119 participants) of whom were female, and 8.5% (11 participants) were male. The average age of participants was 35.87

years. In terms of age distribution, most participants were between 31–40 years old (85 participants, 65.4%), followed by 24 participants (18.5%) aged 41–50 years, 20 participants (15.4%) aged 21–30 years, and 1 participant (0.8%) over 50 years old. Most participants were married (90.8%, 118 participants), with 6.9% (9 participants) in common-law relationships and 2.3% (3 participants) divorced.

Regarding family income, the majority (52 families, 40%) reported income exceeding 8001 RON (approximately €1600/month). Other income brackets included 17 families (13.1%) earning between 4001–5000 RON (€800–1000/month), 12 families (9.2%) earning between 6001–7000 RON (€1200–1400/month), 16 families (12.3%) earning between 5001–6000 RON (€1000–1200/month) or 7001–8000 RON (€1400–1600/month), and 11 families (8.5%) earning between 3001–4000 RON (€600–800/month). Four families (3.1%) reported incomes below 3000 RON (€600/month), and two participants (1.5%) refused to disclose their income.

Most parents (46.9%, 61 participants) reported having one child, 42.3% (55 participants) had two children, 9.2% (12 participants) had three children, and 1.5% (2 participants) had more than three children. Among the children, 79 (60.8%) were girls, and 51 (39.2%) were boys. Most children (58.5%, 76 participants) were the first-born, followed by 36.2% (47 participants) who were the second-born, 3.8% (5 participants) who were the third-born, and 1.5% (2 participants) who were fourth-born. Most parents (78.5%, 102 participants) reported that their children attended full-day kindergartens (8 hours/day), while 21.5% (28 participants) reported attendance at part-day kindergartens (4 hours/day).

Results

We will start with the first objective: identifying parents' perceptions of preschoolers' free time. When we say "free time for preschool children," most parents—63.1% (82 respondents)—understand it as "a 5-6 hour period after the child comes home from kindergarten," while 16.2% (21 respondents) state that free time refers to "a few hours daily and on weekends." Only 10 respondents (7.7%) see free time as occurring "only on weekends," while 3 respondents (2.3%) view it as happening "only during vacations".

No.	Correlation	Correlation Value	Significance Level
1	Perceived free time period by parents and the number of hours spent in kindergarten	.244**	p=0.01

2	Between the perceived free time period by parents and parent-child free time on weekends	.618**	p=0.01
3	Between the perceived free time period by parents and parent-child free time during a weekday	.296**	p=0.01

Table 1: Correlation Values Obtained

Looking at Pearson's correlation, there is a weak positive correlation (.244**, $p=0.01$) between the perceived free time period and the number of hours spent in kindergarten (4 hours or 8 hours), which is encouraging when considering the time spent between parent and child (see Table 1). Regarding how free time spent by the parent with the child looks on a weekday, most parents—34.6% (45 respondents)—declare that they spend 3-4 hours daily with the child, and 24.6% (32 respondents) spend 4-5 hours daily. Encouragingly, 16 parents (12.3%) declare that they spend more than 5 hours daily with the child (Waters, Salinas-Miranda, Kirby, 2023), and only 1 parent (0.8%) spends less than 1 hour daily. Time spent between parent and child on a weekend day was also identified. Here, the situation is much better. Thus, most parents—32.3% (42 respondents)—declare that they spend more than 7 hours/day with the child (Waters, Salinas-Miranda, Kirby, 2023), 27.7% (36 respondents) spend between 5-7 hours/day, and 24.6% (32 respondents) spend between 3-5 hours/day. Only 10.8% (14 respondents) declare spending less than 3 hours daily with the child on weekends. Pearson's correlations were obtained: between the perceived free time period by parents and parent-child free time on weekends (high positive correlation - .618**, $p=0.01$) and between the perceived free time period by parents and parent-child free time during a weekday (weak positive correlation - .296**, $p=0.01$) (see Table 1).

We continue with the second research objective: analyzing places where preschoolers spend their free time. For this objective, several options for spending free time by preschool children were presented, ranging from parks and playgrounds to pools, skating rinks, or theaters for children, etc. The following table (Table 2) presents the average values of possibilities for spending free time by preschool children. The most favored option is "a park equipped with a children's playground" ($M=3.69$; $SD=.703$) (Blienkendaal, Nauta, 2024). Not only this type of park but also "parks" in general join as possibilities for spending free time ($M=3.55$; $SD=1.086$) (Andrusaityte et al., 2020; Jongenelis et al., 2024; Gao, Zhu, Cheng, 2024; Squires et al., 2024). Interestingly, the third position is occupied by "puppet theaters/places where children's shows are held" ($M=2.90$; $SD=.939$). Complementing the previously mentioned possibilities are "places where artistic activities can be practiced—musical, dance, plastic activities, creative activities, etc."

($M=2.53$; $SD=1.101$). Sports activities practiced in pools/swimming pools are also among the children's preferences ($M=2.40$; $SD=1.008$), as are places for celebrating children's birthdays ($M=2.39$; $SD=.992$). More modest values were recorded for: skating rinks ($M=2.12$; $SD=.978$), cinemas/places where films are shown ($M=2.11$; $SD=.819$), and sports clubs ($M=2.00$; $SD=1.042$).

No.	Possibilities for Spending Free Time	M	Std.dev.
1	Parks with children's playgrounds	3.69	.703
2	Parks	3.55	1.086
3	Puppet theaters/places where children's shows are held	2.90	.939
4	Artistic activity centers (music, dance, plastic arts, creative activities)	2.55	.941
5	Pools/swimming pools	2.53	1.101
6	Places for children's birthday celebrations	2.40	1.008
7	Skating rinks	2.39	.992
8	Cinemas/places where films are shown	2.12	.978
9	Sports clubs	2.11	.819
10	Playrooms	2.00	1.042

Table 2: Average Activity Values

While discussing the most preferred leisure options, it is also important to mention those less favored by children. The Children's Club is the least preferred option for leisure activities among children ($M=1.68$; $SD=0.872$). A possible explanation might be the lack of information provided to parents about the institution's activities. Similarly, insufficient information could explain the low average scores for play libraries ($M=1.70$; $SD=0.912$). Children's libraries were also not among the favorites ($M=1.85$; $SD=0.944$). Although physical activity is essential at this age, gyms or places for sports activities were not at the top of preschoolers' preferences ($M=1.93$; $SD=0.974$).

After applying ANOVA, the following was obtained: $F(6) = 4.063$, $p < 0.001$ between "cinemas" as a leisure option and "weekend leisure time allocated to the child."

No.	Leisure Activities	M	Std.dev.
1	Gyms/places for sports activities	1.93	.974
2	Children's libraries	1.85	.944
3	Play libraries	1.70	.912
4	Children's Club	1.68	.872

Table no. 3. Average Values of Activities

Respondents also had the option to mention other leisure activities, such as indoor games (e.g., Charades, Creative Angel), hiking/excursions

(both with 5 mentions), and attending church (2 mentions).

The following correlations were observed at a significance threshold of $p < 0.01$:

- Positive moderate correlations: parks and parks with designated play areas for children (0.412**); cinemas and theaters (0.446**); cinemas and pools (0.400**); pools and gyms/places for sports activities (0.403**); pools and ice-skating rinks (0.410**).
- Strong positive correlation: sports clubs and gyms/places for sports activities (0.525**).

No.	Activities	Media	Std. dev.
1	Playing various games together	4.30	.920
2	Going outside and playing with other children	4.18	.952
3	Walking, spending time in nature	4.11	.990
4	Reading stories, poems, or children's books	4.03	1.056

Table no. 4. Parent-Child Leisure Activities

Watching TV programs had a lower average score ($M=3.15$; $SD=1.264$), which is encouraging, as preschoolers seem to prefer outdoor activities or various indoor games. Other activities such as attending theater performances, participating in sports activities, and visiting museums scored higher than computer activities ($M=2.02$; $SD=1.204$).

No.	Activities	Media	Std. dev.
1	Watching various TV programs	3.15	1.264
2	Attending cultural/artistic events	3.08	1.227
3	Participating in sports activities	3.05	1.394
4	Visiting museums/tourist attractions	2.85	1.164
5	Playing computer games	2.02	1.204

Table no. 5. Parent-Child Activities

Parents were also asked to specify other leisure activities. Only 10 respondents (7.69%) chose this option. Here, parents mentioned that preschoolers also participate in household chores (3 respondents), foreign language courses (3 respondents), visits to grandparents (3 respondents), and modeling courses (1 respondent). Parents were asked to specify with whom children engage in the above activities. Most often, parents themselves accompany their children to the following activities: various activities carried out in parks or outdoors in general (walks, outdoor games, hiking, excursions) ($M=4.20$; $SD=0.991$), various entertaining indoor activities (games) ($M=3.92$; $SD=1.376$), and reading stories ($M=3.87$; $SD=1.296$). Parents least often participate with

their children in the following activities: computer games ($M=2.34$; $SD=1.417$), sports activities/sports practice ($M=2.64$; $SD=1.364$), and activities at swimming pools ($M=2.78$; $SD=1.521$).

For the same leisure activities, children could also be accompanied by someone other than their parents. The activities in which another person accompanies the children include: various entertaining indoor activities (games) ($M=4.32$; $SD=1.521$), various activities carried out in parks or outdoors in general (walks, outdoor games, hiking, excursions) ($M=4.05$; $SD=2.340$), and reading stories ($M=4.05$; $SD=2.427$). The least frequent activities accompanied by someone other than parents are: computer activities (games) ($M=2.51$; $SD=2.036$), attending children's theater performances ($M=3.01$; $SD=1.640$), and activities at swimming pools ($M=3.15$; $SD=2.171$).

The analysis of gender perspectives in choosing leisure activities revealed that girls scored higher than boys in the following activities: "walking, spending time outdoors" (43.03%), "watching various TV programs" (34.17%), "participating in various sports activities" (36.70%), "attending various cultural-artistic events" (43.03%), and "visiting museums/tourist attractions" (31.17%). Boys scored higher than girls in the following activities: "reading stories, poems, or children's books" (47.05%) and "playing outside with other children" (52.94%). Only one activity, "playing various games together," showed nearly equal scores for both girls (49.36%) and boys (49.01%). The activity "playing computer games" was marked as "not practiced" by both girls (46.83%) and boys (49.01%).

Conclusions

The study aimed to analyze how preschool children spend their leisure time. A percentage of 12.3% of parents stated that they spend more than 5 hours daily with their child. Regarding the time spent by parents with their child during a weekday, most parents (34.6%, 45 respondents) reported spending 3-4 hours daily, while 24.6% (32 respondents) spend 4-5 hours daily. The most preferred leisure option is "park with a playground for children" ($M=3.69$; $SD=0.703$), followed by "parks in general" ($M=3.55$; $SD=1.086$), and in third place "puppet theaters/venues hosting shows for children" ($M=2.90$; $SD=0.939$).

Most often, parents themselves accompany their children to the following activities: various outdoor activities in parks (walks, outdoor games, hiking, excursions) ($M=4.20$; $SD=0.991$), various entertaining indoor activities (games) ($M=3.92$; $SD=1.376$), and reading stories ($M=3.87$; $SD=1.296$). Regarding children's activities, the highest average score was for "playing various games together" ($M=4.30$; $SD=0.920$), followed by "playing outside with other children" ($M=4.18$; $SD=0.952$) (Jongenelis et al., 2024). High averages were also noted for

the sequence of activities: "walking, spending time in nature" (M=4.11; SD=0.990) and "reading stories, poems, or children's books" (M=4.03; SD=1.056).

The possibilities and activities for preschoolers' leisure time remain dynamic and warrant further study in the future.

References

Andrusaityte, S., Grazuleviciene, R., Dedele, A., Balseviciene, B. (2020). The effect of residential greenness and city park visiting habits on preschool Children's mental and general health in Lithuania: A cross-sectional study. *International Journal of Hygiene and Environmental Health* 223 (1), 142-150. <https://doi.org/10.1016/j.ijheh.2019.09.009>.

Badia, M., Longo, E., Orgaz, B.M., Gómez-Vela, M. (2013). The influence of participation in leisure activities on quality of life in Spanish children and adolescents with Cerebral Palsy. *Research in Developmental Disabilities* 34 (9), 2864-2871. <https://doi.org/10.1016/j.ridd.2013.06.017>.

Barbosa, S.C, Coledam, D.H.C., Neto, A.S., Elias, R.G.M., de Oliveira, A.R. (2016). School environment, sedentary behavior and physical activity in preschool children. *Ambiente escolar, comportamento sedentário e atividade física em pré-escolares. Revista Paulista de Pediatria (English Edition)* 34 (3), 301-308. <https://doi.org/10.1016/j.rppede.2016.02.003>.

Boldemann, C., Dal, H., Mårtensson, F., Cosco, N., Moore, R., Bieber, B., Blennow, M., Pagels, P., Raustorp, A., Wester, U., Söderström, M. (2011). Preschool outdoor play environment may combine promotion of children's physical activity and sun protection. Further evidence from Southern Sweden and North Carolina. *Les aires de jeux extérieures en école maternelle peuvent associer promotion de l'activité physique et protection solaire. Nouveaux arguments de Suède du Sud et de Caroline du Nord. Science & Sports* 26 (2), 72-82. <https://doi.org/10.1016/j.scispo.2011.01.007>.

Gao, M., Zhu, X., Cheng, X. (2024). Safety – premise for play: Exploring how characteristics of outdoor play spaces in urban residential areas influence children's perceived safety. *Cities* 152, 105236. <https://doi.org/10.1016/j.cities.2024.105236>.

Havigerová, J.M., Šnoblová, M., Truhlářová, Z. (2015). Common Activities of Parents and Preschool Children Strengthening Their Relationship. *Procedia - Social and Behavioral Sciences* 186, 197-201. <https://doi.org/10.1016/j.sbspro.2015.04.095>.

He, M., Irwin, J.D., Sangster, L.M., Tucker, P., Pollett, G.L. (2005). *American Journal of Preventive Medicine* 29 (2), 120-125. <https://doi.org/10.1016/j.amepre.2005.04.004>.

Jongenelis, M.I., Budden, T., Jackson, B., Christian, H., Nathan, A., Coall, D., Glassenbury, E. (2024). Australian children's physical activity and screen time while in grandparental care. *Australian and New Zealand Journal of Public Health* 48, (3), 100146. <https://doi.org/10.1016/j.anzjph.2024.100146>.

Mota, J.,M Martins, C., Silva-Santos, S., Santos, A., Vale, S. (2019). TV in bedroom, outdoor playtime and obesity status among preschool girls. *Science & Sports* 34 (4), 222-227. <https://doi.org/10.1016/j.scispo.2018.09.011>.

Nilsen, A.K.O., Anderssen, S.A., Resaland, G.K., Johannessen, K., Ylvisaaker, E., Aadland, E. (2019). Boys, older children, and highly active children benefit most from the preschool arena regarding moderate-to-vigorous physical activity: A cross-sectional study of Norwegian preschoolers. *Preventive Medicine Reports* 14, 100837. <https://doi.org/10.1016/j.pmedr.2019.100837>.

Raz-Silbiger, S., Lifshitz,N., Katz, N., Steinhart, S., Cermak, S.A.,Weintraub, N. (2015). Relationship between motor skills, participation in leisure activities and quality of life of children with Developmental Coordination Disorder: Temporal aspects. *Research in Developmental Disabilities* 38, 171-180. <https://doi.org/10.1016/j.ridd.2014.12.012>.

Raynor, H.A., Jelalian, E., Vivier, P.M., Hart, C.N., Wing, R.R. (2009). Parent-reported Eating and Leisure-time Activity Selection Patterns Related to Energy Balance in Preschool- and School-aged Children. *Journal of Nutrition Education and Behavior* 41, (1), 19-26. DOI: <https://doi.org/10.1016/j.jneb.2008.03.008>.

Silonsaari, J., Simula, M., Brömmelstroet, M. (2024). From intensive car-parenting to enabling childhood velonomy? Explaining parents' representations of children's leisure mobilities. *Mobilities* 19 (1), 116-133. <https://doi.org/10.1080/17450101.2023.2200146>.

Squires, K., van Rhijn, T., Breau, B., Harwood, D., Haines, J., Coghill, M. (2024). A quasi-experimental investigation of young children's activity levels and movements in equipment-based and naturalized outdoor play environments. *Journal of Environmental Psychology* 97, 102364. <https://doi.org/10.1016/j.jenvp.2024.102364>.

Sobkin, V.S., Skobeltsina, K.N. (2014). Sociology of Preschool Childhood: Age Dynamics of the Child's Play. *Procedia - Social and Behavioral Sciences* 146, 450-455. <https://doi.org/10.1016/j.sbspro.2014.08.153>.

Walaa, A.M., Alahmadi, A.I., Alenazi, A.E., Alfaruqi, F.I., Alqarafi, G.M., Ahmed, H.A., , Aljabri, L.A., Joraid, N.N., Almukhlifi, R.S., Alhejaili, R.Y., Albeladi, R.O., Almadani, Kutbi, S.Y.H. (2023). Leisure screen time predicts free sugar consumption in children. *Nutrition* 108,111963. <https://doi.org/10.1016/j.nut.2022.111963>.

Wang, X., Tang, P., He, Y., Woolley, H., Hu, X., Yang, L., Luo, J. (2024). The correlation between children's outdoor activities and community space characteristics: A case study utilizing SOPARC and KDE methods in Chengdu, China. *Cities* 150, 105002. <https://doi.org/10.1016/j.cities.2024.105002>.

Waters, K.A., Salinas-Miranda, A., Kirby, R.S. (2023). The association between parent-child quality time and children's flourishing level. *Journal of Pediatric Nursing* 73, 187-e196. <https://doi.org/10.1016/j.pedn.2023.09.008>.

Watson, C.J., Dumont, A., Fortier J., Miaux, S. (2023). Informal natural greenspaces as places for urban leisure: Perspectives, uses and values from Quebec, Canada. *Urban Forestry & Urban Greening* 90, 128135. <https://doi.org/10.1016/j.ufug.2023.128135>.

Zarezadeh, Z., Rastegar, R. (2023). Gender-leisure nexus through a social justice lens: The voice of women from Iran. *Journal of Hospitality and Tourism Management* Volume 54, 472-480. <https://doi.org/10.1016/j.jhtm.2023.02.003>.

Zhang, B., Liu, Y., Zhao, M., Meng, X., Deng, Y., Zheng, X., Wang, X., Xiong, S., Han, Y. (2020). Differential effects of acute physical activity on executive function in preschoolers with high and low habitual physical activity levels. *Mental Health and Physical Activity* 18, 100326. <https://doi.org/10.1016/j.mhpa.2020.100326>.

Zivan, M., Horowitz-Kraus, T. (2020). Parent-child joint reading is related to an increased fixation time on print during storytelling among preschool children. *Brain and Cognition* 143, 105596. <https://doi.org/10.1016/j.bandc.2020.105596>.

Žumárová, M. (2015). Computers and Children's Leisure Time. *Procedia - Social and Behavioral Sciences* 176, 779-786. <https://doi.org/10.1016/j.sbspro.2015.01.540>.