Revista Educația Plus

JOURNAL PLUS EDUCATION

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Volume XXX, Nr. 1/ 2022

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JOURNAL PLUS EDUCATION

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Volume XXX, Nr.1/ 2022

QUARTERLY JOURNAL, PUBLISHED BY

"AUREL VLAICU" UNIVERSITY, ARAD

Volume XXX, Nr. 1/ 2022, May

Journal Plus Education (JPE) is an official peer-review quarterly journal, issued by the Faculty of Educational Sciences, Psychology and Social Work, "AUREL VLAICU" UNIVERSITY, ARAD, which is also published online.

Coverage

- ***CNCSIS classification B+ category***
- ***Ulrich's***
- ***Google scholars***
- ***EBSCO***
- ***CEEOL***
- ***CrossReff –DOI-10.24250.jpe***
- ***WorldCat.org***
- ***SCIPIO***
- ***Cite factor***

ISSN: 1842-077X

E- ISSN (online) 2068 – 1151

Editura Universităţii "Aurel Vlaicu"

Arad, 2022

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EDUCAŢIA-PLUS

JOURNAL PLUS EDUCATION

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Volume XXX, Nr. 1/Mai 2022

CULEGERE SEMESTRIALĂ DE STUDII

ŞTIINŢIFICE ŞI DIDACTICE

Content

THEORETICAL APROCH OF CRITICAL THINKING IN EDUCATION

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Abstract: *We have chosen this research topic because we believe that critical thinking has a key role in the formation and development of self-assessment capacity. Critical thinking takes information, evaluates it and processes it so that it can be understood and form its own point of view. In order to develop this type of thinking for young school-age students, it is necessary to approach the activities specific to this age, activities that are understandable to students, that will arouse their interest. The student who forms his critical thinking will more easily understand mathematical problems, understand a text and analyze it without having to resort to mechanical memory. Because through critical thinking new information and knowledge is accumulated, voluntarily, thus, an own opinion will be formed. If the student comes to have his own opinion which he supports through valid arguments, he will become able to decide for himself.*

Key words: *critical thinking; primary school; benefits; decision.*

Introduction

Critical thinking is based on self-analysis and self-knowledge, and these are two essential components in the formation and development of self-assessment. The role of self-assessment is to communicate to the student their own abilities and knowledge through self-discovery. The student, once placed in front of his own successes, will understand what his strengths are, but also where more work is needed for success. Thus, the use of critical thinking methods will help to develop the capacity for self-assessment.

Critical thinking has been used (albeit in a different form) since antiquity. Socrates, for example, is the one who encouraged the importance of asking questions before accepting a proposed idea. In the Middle Ages and the Renaissance, the concept of critical thinking is found in perceptions of religion, art, society and human values. Roger Bacon explains the importance of studying the world in a systematic approach to critical thinking.

Didactic methods with a role in the development of critical thinking must be introduced in the teaching activity. Teaching is the activity through which the learning process is organized and conducted. It is based on didactic communication, through which the relationship between teacher and student is achieved. Teaching is done with the help of teaching strategies aimed at achieving teaching objectives. Through teaching, the teacher aims to form specific skills, from the curriculum, to students. The teacher has the role of designer of the learning experiences, as well as the role of leader of the instructive-educational process.

Theoretical foundation

It is necessary to deal with the subject of critical thinking at a young age. The teaching-learning process aims to develop the student's knowledge, skills and abilities. After studying the specialized literature, we have discovered some conceptual delimitations, perspectives of different pedagogues from the country, as well as from abroad.

According to the author Dorina Sălăvaru, critical thinking is defined as follows: “For testing and evaluating possible solutions and explorations, however, another way of thinking is needed, namely critical thinking. (...) We need to produce new ideas, creative ideas, but these ideas must then be tested and evaluated to make sure we are not wrong.” (Sălăvăstru, D., 2009)

From the perspective of Robert H. Ennis, critical thinking is "reasonable and thoughtful thinking centered on the ability to decide what to believe and to act." (Ennis, R., 1987). In the opinion of Robert Ennis, critical thinking focuses on all the capabilities and attitudes of transmitting information. Critical thinking is based on asking questions, deepening information and expressing an opinion in a debate.

The student learns to think and is stimulated towards free thinking, when he participates in an active and interactive teaching, flexible and

efficient. In designing an instructive-educational activity, in order to develop critical, creative, active thinking, guidance towards the connection of new knowledge with the accumulated ones, the teacher must consider the application of interactive teaching strategies. (Bocoș, M., 2013)

In teaching new knowledge, we must start from concrete facts, from real life, experienced by the student, to create the connection between knowledge and awaken the desire to know the new contents. Through concrete representations and materials, we provide students with examples as a starting point and investigation. Given the diversity of a class of students, during the teaching act we need to present several examples to provide each student with personal experience in the educational process, actively participating and with interest in the activity. (Roman& Bran, 2015).

Recent perspectives in education

For the development of critical thinking, it is necessary to integrate teaching methods, which aim to develop the skills needed for this thinking. In the research part of the paper, I proposed the following didactic methods of critical thinking for the development of self-assessment: Method I know- I want to know- I learned, Debate, Concept map, Thinking hats, Scenarios, R.A.I., P.M.I. method, Glue notes. In the research part, I want to discover the most suitable activities to form the skills and abilities needed in the development of self-assessment at a young school age.

I will briefly present some of these methods to highlight their role in contemporary teaching as well as in the development of critical thinking and self-assessment.

1.**The thinking hats method**, or the so-called six hats, came to life through the proposal of Edward de Bono. The purpose of the discussion is to resolve the problem situations. This method takes into account: the awareness of the different ways of thinking exists in different groups of people, the observation of problems from several points of view, the different way of approaching and solving problems. This method is interactive and gives students the opportunity to present their own point of view on the proposed topic. They are challenged to ask questions, to argue their point of view, but also to accept the opinion of other hats. (Bocoș, M., 2013)

2. The **debate** is based on the competition between two teams, with a confrontation on a chosen and studied topic. The topic will be chosen so that the topic can be supported with both pros and cons. The two teams will be named affirmatives and deniers. The number of students in a team is set, and each team will have the same amount of time to present their arguments. The debate will be judged, and at the end the winning team is designated. This method involves more of the part of deepening the knowledge, after acquiring it.

3. The method **I know- I want to know- I learned**. The specificity of this method is to place the student in the middle of the learning process. The confident student will make connections between knowledge, intuiting what he is going to learn. This method guides the student to learning through discovery, which arouses his interest in learning and actively involves him in the whole teaching-learning process. Teaching is done through cooperation.

In the teaching process, ensuring the transfer of knowledge is the key moment of the teaching activity, the mental operations are not performed only after a simple example. The student of small school age will not perceive the count just by observing a row of colored pencils, placed on the bench, will not assimilate the concept of multiplication by equal organization, in groups of some stars and so on. In directing the cognitive act of the class, the examples must be associated with visual aids, explanations, discoveries of the necessary information. (Chiş, V., 2005)

In order to perform these mental operations, the teacher integrates cognitive organizers into the teaching act. The right ways are: clear description of new concepts, objects, notions; highlighting and highlighting secret information; explaining and making connections between ideas. All this develops the way of thinking and understanding of the world around us.

Development in thinking is predominant at a young age. Thinking is changing, as it moves from preoperative to operative thinking. Mental skills are separated from the information received and stored, are generalized, and then will be transmitted to new content assimilated during early schooling, performing automation and solving operations.

The thinking of the young student works with the help of representations, so it is recommended to use the following activities:

- Use of concept maps - association of relationships between concepts, visualization of connections;
- Divergent and convergent thinking development activities;
- Synthetic Method - association of ideas;

In designing the teaching activity, the teacher takes into account the level of the group and the appropriate way of carrying out the activity. Diversification and new elementary will capture the student's attention and interest, giving the teacher the opportunity to develop and train skills. Through contemporary instructional activities, different abilities are developed (self-assessment, creativity, imagination, critical thinking), and the activities applied repetitively to different learning units will ensure the permanent development of the student.

Self-evaluation is a process of obtaining, measuring and appreciating the acquired information, evaluating one's own performance, by assessing the results obtained following a task performed. (Roman, A., 2014, p. 175)

Marin Manolescu argued that "self-assessment cannot be reduced to self-correcting situations based on a scale provided by the teacher, as this situation would induce a situation of conformity with the norm." (Manolescu, M., 2004)

Within the instructive-educational process, the didactic methodology must be closely related to the new tendencies, both didactic and social. The transformations coming from the aims of education will have an impact on the contents and requirements coming from the students and the society. (Cucoș, C., 2014) The didactic methodology must be open to changes that will intervene in the training system. We can exemplify certain requirements that need to be considered in order to ensure a contemporary, effective teaching for today's society:

- Applying new teaching methods and procedures, which provide solutions for current learning situations, ensuring "problem situations" that challenge students to find the right solutions.
- A frequent use of active-participatory methods, in order to activate the cognitive and oppressive structures of children.
- Use of appropriate teaching aids to enrich and streamline the teaching and learning process.
- Using different forms of organization to educate the student both in individual and team work, but also to improve the student-teacher, teacher-student relationship.
- Parents call for the development of interdisciplinary, non-formal, attractive programs and projects for children. (Coşarbă, E., Roman, A. F., & Costin, A., 2021)

Classroom assessment is divided into two types of assessment, namely traditional and contemporary. The traditional methods are: written test, oral test and practical test. (Stan, C., 2001) I believe that both types of assessment are effective if used correctly, diversified, without threatening the student about the assessment.

The proposed research work focuses on the development of self-assessment capacity. If we manage, as teachers, to train and develop the student's self-assessment capacity, he will have benefits, after acquiring this capacity, both professionally and personally.

The main ways of self-assessment, determined by pedagogical theory and practice, are oriented towards the following: self-correction of answers by students, correction of colleagues' answers, self-grading supervised by the teacher, mutual grading (between colleagues). For these types of self-assessment requires a well-established scale and understood by students.

- **Self-correction and mutual correction**, is the first step towards achieving autonomy in school assessment. Through such a practical exercise, the student is directed to discover some errors in the learning task performed.
- **Supervised self-assessment** is done in an assessment, and the student is encouraged to give a grade, which is discussed with the teacher and then with colleagues. The processor guides, provides explanations regarding the correctness or incorrectness of the assessments made.
- **Reciprocal grading** is the educational moment in which students are asked to grade their classmates' assignments, both written and oral. This activity does not necessarily have to end with the actual grading.

Conclusions and discussions

The current education system is based on the close link between teaching-learning-development.

The teaching-learning-assessment relationship is formative and formative, because if the instructive-educational process, in traditional didactics, is based on one-way communication, in modern didactics teaching-learning is based on the formation of skills, abilities, specific study skills, cognitive processes based on which the student acquires autonomy in learning. (Roman&Balaș, 2014), Analyzing the formative and formative relationship, which offers the student the opportunity to actively participate in the learning process, this relationship also includes self-training, where the essential concept is that of assessment, which determines self-assessment.

In contemporary teaching, the approach is the opposite of the traditional one. The student is placed in the middle of the educational act, the learning is realized centered on the student. Teaching consists in transmitting information, ensuring transfers, by approaching modern teaching methods that involve the student active in the instructional-educational process. Contemporary teaching is part of the modern dialectic and offers the student pleasant, interesting and captivating learning experiences.

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RELATIONSHIP BETWEEN STUDENTS' PERCEPTION OF TEACHERS' COMMUNICATION BEHAVIOURS AND PERFORMANCE IN BASIC SCIENCE IN ANAMBRA STATE, NIGERIA

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Abstract: *The study investigated the relationship between students' perception of teachers' communication behaviours and performance in Basic Science in Anambra State, Nigeria. Three research questions and three null hypotheses tested at 0.05 alpha level guided the conduct of the study. The study adopted the correlation survey research design. The population comprised of 26,261 upper basic nine students in the 261 state government-owned secondary schools in Anambra State. A sample of 540 upper basic nine students obtained using multi-stage sampling procedure was used. The Teachers' Communication Behaviour Questionnaire (TCBQ) adapted by the researchers with reliability coefficients of 0.80 was used for data collection. The instrument was validated by three experts from Faculty of Education in Nnamdi Azikiwe University, Awka. Data were collected by administering the instruments to the students with the aid of four research assistants. The upper basic eight promotion results of the students in Basic Science were used as performance scores of the students. Data collected were analyzed using the Pearson Product Moment Correlation Coefficient and t-test of correlation analysis. The findings of the study revealed that a significant low positive relationship exists between students'*

perception scores of their Basic Science teachers' communication behaviours and performance scores in Basic Science. Also, findings of the study revealed a significant low positive relationship exist between students' perception scores of their Basic Science teachers' communication behaviours and performance scores in Basic Science with respect to gender. It was recommended amongst others that sufficient strategies be deployed by government, school authorities and the teachers in improving the classroom communication behaviours of teachers.

Keywords: *Teachers' communication behaviours; students' perception; performance; Basic Science*

Introduction

Teaching is one among the many activities that go on in any educational setting. It involves the use of many skills and attitudes which are expressed through the manifested behaviours of the teacher and it is instrumental for influencing learners' behaviours. Teaching is a set of events that take place outside of the learners and designed to support their internal learning process (Sequeira, 2012). Teaching according to Gafoor and Babu (2012) is seen as a performing art, which makes use of activities such as voices, gestures and movements to elicit, maintain attention and stimulate students' emotions.

To make desirable impact, teaching must aim at the total development of the individual, that is, to enhance intellectual capabilities, developmental and cognitive intellectuality, foster psycho-social skills, and draw out neuro-physical aptitude of the learners (Akinmusire, 2012). Ultimately, the objective of teaching is to help students develop their potentials on their own journey to adulthood so that they can become good, productive and useful citizens to their nations. Hence, the key personnel in the educational settings that stimulate learner's learning using various activities is the teacher and to achieve this objective, teacher's effectiveness is paramount.

The concept of teachers' effectiveness as defined by Okwuduba and Okigbo (2018) is the teacher's ability to transfer information to students and it is dependent on the teacher's level of pedagogical content knowledge. This concept however, is difficult to define since there has not been a consensus agreement among researchers on what measures a quality teacher. Nevertheless, as posited by Stronge, Ward and Grant (2011), it is possible to measure some teachers' attributes like interaction with students, teaching strategies, motivation, pedagogical content knowledge, classroom

management and communication through quantitative and qualitative research as these attributes can serve as indicators of teachers' effectiveness. These teachers' attributes according to Nwune, Nwoye, Oguezue and Okoye (2021) can be measured using the perceptions of teachers themselves – teachers' self-evaluation, principals/school administrators – hierarchical evaluation, other teachers/colleagues – peer evaluation and students – students' evaluation. For the purpose of this study, students' perception of teachers' classroom communication, one of the indicators of teachers' effectiveness will be considered.

Classroom communication according to Kazi, Abdul-Razak and Mosa (2012) includes the face-to-face interactions and the communications necessary between the teachers and the students in the classroom so as to ensure that learning takes place. According to Ahmad (2018), classroom communication is the process of sending and receiving messages that enables teachers and students to share knowledge, attitude and skills. It is the verbal and non-verbal interactions between the teacher(s) and the student(s) that exists in a classroom or any other learning centre and holds the key to any meaningful teaching and learning. According to Okorji (2014), many communication activities go on in the classroom either in the form of teaching, students' discussions and conversation. Okorji asserted further that the initiator of these communications is the teacher. All the strategies adopted and used by a teacher in the classroom to effectively communicate to students in order to bring about meaningful teaching and learning are referred to as the teacher's communication behaviours.

Eupena (2012) defined teachers' communication behaviours (TCBs) as the classroom behaviours of any teacher that serves as a communication link between the teacher and his/her students. The researcher posited that these behaviours are vital elements in the creation of a quality learning environment that determines the academic fate of the students. According to Sng Bee (2012), teachers' communication behaviours are really important for a teacher in transmitting of education, classroom management and interaction with students in the class. The importance of teachers' classroom communication behaviours cannot be over emphasized as Akudo (2020) posited that these behaviours can help to make classroom lessons clear and easy for students to learn; make the teacher's work in classroom management process easier as well as create an enabling environment for effective teaching and learning. Literature (Marzano & Marzano, 2019) has also identified teachers' classroom communication behaviours as a veritable tool for classroom management which invariably leads to improved learning experiences of learners.

According to She and Fisher as cited in Eupena (2012), there are five dimensions of teachers' classroom communication behaviours needed for

effective classroom communication between the teachers and the students in any classroom environment. These dimensions include: Challenging (this entails the use of high order questions to challenge students, stimulate their interest as well as motivate them to learn), encouragement and praise (this involves the use of praises and encouragement, a form of reinforcement in stimulating learners' interest and getting them to learn), non-verbal support (this include the use of non-verbal communication strategies such as gestures and facial expression in interacting with students), understanding and friendly (this involves the classroom teachers' understanding and friendliness with students) and controlling (this involves the use of certain classroom control strategies in controlling and managing students' classroom behaviours). From the foregoing, one can attribute high and/or low students' academic achievement to teachers' communication behaviours in the classroom, thus portraying the fact that they could be a relationship between the way students' perceive their teachers to be effective in communication and their academic performance.

Asrar, Tariq and Rashid (2018) showed in their study that there is a high and a positive relationship between teachers' communication and students' performance. Akudo (2020) also observed a high and positive relationship between teachers' communication and students' attitude toward science and motivation respectively in her study. When students are intrinsically and extrinsically motivated as well as develop positive attitude towards their academics, they no doubt would achieve more academically. Obilor (2020) also found in his study that teachers' communication influences students' academic performance.

Academic performance is the sum total of a student's learning outcomes in relation to a given standard over a specified period of time (Okpala & Okigbo, 2021). According to Ayibatonye and Ikechi (2018), it is a psychological construct that measures the level of knowledge acquired and skills developed in school subjects, generally indicated by marks obtained in tests in a term or annual examination. For the purpose of this study, the students' academic performance would be measured using their scores in Basic Science in the promotion examination for the 2020/2021 session.

Basic Science according to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2015) is defined as an approach to the teaching of science which involves the expression and the presentation of science concepts and principles as a fundamental unit of scientific thought, in order to avoid undue stress in the distinction between the various scientific fields. Basic Science involves the study of elementary biology, anatomy, earth/solar system, ecology, genetics, chemistry and physics as a single science subject (Omiko, 2016). It offers the basic training in scientific skills required for human survival, sustainable development and societal

transformation. Basic science studies also involve bringing together traditionally separate science subjects so that students grasp a more authentic understanding of science.

According to the Nigerian Educational Research and Development Council (NERDC, 2012), the objectives of Basic Science now called Basic Science and Technology should be directed at enabling students who are exposed to the Basic Science curriculum to acquire the following: Develop interest in science and technology, acquire basic knowledge and skills in science and technology, apply scientific and technological knowledge and skills to contemporary societal needs, take advantage of the numerous career opportunities provided by science and technology, become prepared for further studies in science and technology, avoid drug abuse and related vices and be safety and security conscious. To achieve these objectives, Basic Science and Technology has been structured along the three levels of basic education in Nigeria as lower basic 1-3 (formerly known as primary 1-3), middle basic 4-6 (formerly known as primary 4-6) and upper basic 7-9 (formerly known as junior secondary 1-3). Unfortunately, it has been observed that the aforementioned objectives are not practically achieved as the learning of Basic Science for understanding as well as integrating its knowledge for future use is not reflected in most schools (Ezeoguine & Amaechi-Udogu, 2019). This is probably because students' performances in the subject both in internal and external examinations have not been impressive over the years.

The problem of poor performance in Basic Science has been a source of concern to all well meaning stakeholders in the educational sector, probing into the major causes of the poor performances in the subject with differing opinions. While some researchers attributed it to the difficult nature of the subject (Afuwape & Olugbuyi, 2019), others have attributed it to the poor and inadequate teaching and learning facilities, inadequate laboratories as well as the teachers handling the subject (Ayibatonye & Balafama, 2017; Umar & Samuel, 2018). Some studies (Oludipe, 2012; Ayibatonye & Ikechi, 2018) also attributed students' poor performances in Basic Science to some socio-cultural variables such as gender.

Gender is defined as the social or cultural construct, characteristics, behaviours and roles which society ascribes to males and females (Okeke, 2011). It is also defined as the personality traits, attitudes, behaviours, values, relative power, influence, roles and expectation that society ascribes to the two sexes (male and female) on a differential basis (Ezeh, 2013). The influence of students' gender in the relationship between students' perception of their teachers' communication behaviours and academic achievement has remained inconclusive as researchers share differing views. While the study of Al-Madani (2015) showed that students' gender is not significant in the relationship between students' perception of their teachers' communication

behaviours and academic achievement, the study of Han and Tosten (2016) reported otherwise. There is need therefore to investigate the moderating influence of gender in the relationship between students' perception of teachers' communication behaviours and Basic Science performance in Anambra State, Nigeria. Specifically, the study sought to determine the;

1. relationship between students' perception scores of their teachers' classroom communication behaviours (TCBs) and performance scores in Basic Science
2. relationship between male students' perception scores of their TCBs and performance scores in Basic Science
3. relationship between female students' perception scores of their TCBs and performance scores in Basic Science

Research Questions

The following research questions guided the conduct of the study.

1. What is the relationship between students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?
2. What is the relationship between male students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?
3. What is the relationship between female students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?

Research Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant relationship between students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science.
2. There is no significant relationship between male students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science.
3. There is no significant relationship between female students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science.

Method

The study adopted a correlation survey research design. This design according to Nworgu (2015) seeks to establish the relationship that exists between two or more variables.

The population of the study consist of 26,261 upper basic nine students in the 261 state government-owned secondary schools in the six education zones in Anambra State. The sample of the study comprised 540 upper basic nine students from three education zone in the state. The sample was selected through a multistage sampling procedure. The stages were as follows: The first stage was to put the six education zones in Anambra State into six strata and utilize stratified simple random sampling technique to select three out of six education zones in the state. The second stage involved purposely and randomly selecting four co-educational/mixed schools with large students population from each of the three selected education zones so as to get both male and female students working together under the same teacher and environment and also get a sufficient number of respondents from each of these schools. This gave a total of 12 schools. The third stage involved using simple random sampling to draw 45 upper basic nine students from each of the 12 schools to obtain a sample size of 540.

The Teachers' Communication Behaviour Questionnaire (TCBQ) adapted from the Teacher Communication Behaviour Questionnaire (TCBQ) of She and Fisher (2002) with a reliability coefficient of 0.80 was used to collect data for this study. The TCBQ has four point response options of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) with weights of 4,3,2,1 and 1,2,3,4 for positive and negative responses respectively.

The validation of the TCBQ was done by three experts, one from the Department of Science Education and two from Measurement and Evaluation unit and Educational Psychology unit of the Department of Educational Foundations, all from Nnamdi Azikiwe University. In order to ensure the reliability of the instrument, a trial testing involving simple administration method was carried out in Enugu state, outside the study's area of interest using a sample size of 50 upper basic nine students. A Cronbach alpha technique was used to determine the internal consistency of the items in the instrument. An internal reliability coefficient of .80 was obtained for the TCBQ.

The researchers administered the research instrument personally with the help four trained research assistants. The research assistants were briefed on the objectives of the study and how to collect data using the instruments. The research assistants assisted the researchers in the administration and collection of the instruments and in each of the selected schools; the instruments were administered and collected on the same day. The Basic

Science scores of the students from their upper basic eight promotion examination for the 2020/2021 session were obtained from the form teachers and these served as their Basic Science performance scores.

In analyzing the collected data, Pearson Product Moment Correlation was used to answer the research questions while the t-test of correlation analysis was used to test the research hypotheses at .05 level of significance. The interpretation was as follows; for research questions, a score of .80 and above is considered high relationship, .31 - .79 is considered moderate relationship while .30 and below is considered low relationship. In taking decision, where P-value is less than or equal to significant value of .05 ($P \leq .05$), the null hypotheses were rejected otherwise ($P>.05$) the null hypotheses were accepted.

Results

Research Question 1: What is the relationship between students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?

Table 1: Pearson Correlation Coefficient (r) of Students' Perception Scores of their TCBs (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	N	Performance (r)	Remark
Challenging	540	.08	Low positive relationship
Encouragement and praise	540	.25	Low positive relationship
Non-verbal support	540	.13	Low positive relationship
Understanding and friendly	540	.23	Low positive relationship
Controlling	540	.03	Low positive relationship
Overall	540	.21	Low positive relationship

Table 1 shows Pearson correlation coefficients of .08, .25, .13, .23 and .03 for the relationship between secondary school students' perception scores of the challenging, encouragement and praise, non-verbal support, understanding and friendly and controlling dimensions of their teachers'

communication behaviours and performance scores respectively. The table also shows an overall Pearson correlation coefficient of .21 which indicates that a low positive relationship exists between students' perception scores of their teachers' communication behaviours and performance scores in Basic Science.

Research Question 2: What is the relationship between male students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?

Table 2: Pearson Correlation Coefficient (r) of Male Students' Perception Scores of their Teachers' Communication Behaviours (TCBs) (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	N	Performance (r)	Remark
Challenging	222	.15	Low positive relationship
Encouragement and praise	222	.29	Low positive relationship
Non-verbal support	222	.07	Low positive relationship
Understanding and friendly	222	.16	Low positive relationship
Controlling	222	.04	Low positive relationship
Overall	222	.19	Low positive relationship

Table 2 shows Pearson correlation coefficients of .15, .29, .07, .16 and .04 for the relationship between male students' perception scores of the challenging, encouragement and praise, non-verbal support, understanding and friendly and controlling dimensions of their teachers' communication behaviours and performance scores respectively. The table also shows an overall p-value of .19 which indicates a low positive relationship exists between male students' perception scores of these dimensions of their teachers' communication behaviours and performance scores in Basic Science.

Research Question 3: What is the relationship between female students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science?

Table 3: Pearson Correlation Coefficient (r) of Female Students' Perception Scores of their Teachers' Communication Behaviours (TCBs) (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	N	Performance (r)	Remark
Challenging	318	.02	Low positive relationship
Encouragement and praise	318	.24	Low positive relationship
Non-verbal support	318	.18	Low positive relationship
Understanding and friendly	318	.27	Low positive relationship
Controlling	318	.02	Low positive relationship
Overall	318	.23	Low positive relationship

Table 3 shows Pearson correlation coefficients of .02, .24, .18, .27 and .02 for the relationship between female students' perception scores of the challenging, encouragement and praise, non-verbal support, understanding and friendly and controlling dimensions of their teachers' communication behaviours and performance scores respectively. The table also shows an overall p-value of .23 which indicates a low positive relationship exists between female students' perception scores of these dimensions of their teachers' communication behaviours and performance scores in Basic Science.

Hypothesis 1: There is no significant relationship between students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science

Table 4: t-Test of Significance of Relationship between Students' Perception Scores of their Teachers' Communication Behaviours (TCBs) (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	Performance(r)	P-value	Decision
Challenging	.08	.07	Not significant
Encouragement and praise	.25	.00	Significant

Non-verbal support	.13	.00	Significant
Understanding and friendly	.23	.00	Significant
Controlling	.03	.50	Not
Overall	.21	.00	significant Significant

Table 4 shows p-values of .00, .00 and .00 respectively for the relationship between students' perception scores of the encouragement and praise, non-verbal support and understanding and friendly dimensions of their teachers' communication behaviours and performance scores in Basic Science. These p-values are less than the .05 alpha level and thus indicates a statistical significant relationship exists between the variables. Also, the table shows p-values of .07 and .50 respectively for the relationship between students' perception scores of the challenging and controlling dimensions of their teachers' communication behaviours and performance scores in Basic Science. These p-values are greater than the .05 alpha level and thus indicates a non statistical significant relationship exists between the variables. The overall p-value of .00 as indicated in the table which is less than the .05 alpha level shows a statistical significant relationship exists between secondary school students' perception scores of their teachers' communication behaviours and performance scores in Basic Science.

Hypothesis 2: There is no significant relationship between male students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science

Table 5: t-Test of Significance of Relationship between Male Students' Perception Scores of their Teachers' Communication Behaviours (TCBs) (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	Performance(r)	P-value	Decision
Challenging	.15	.02	Significant
Encouragement and praise	.29	.00	Significant
Non-verbal support	.07	.00	Significant
Understanding and friendly	.16	.02	Significant

Controlling	.04	.59	Not
Overall	.19	.00	significant Significant

Table 5 shows p-values of .02, .00 .00 and .02 respectively for the relationship between male students' perception scores of the challenging, encouragement and praise, non-verbal support and understanding and friendly dimensions of their teachers' communication behaviours and performance scores in Basic Science. These p-values are less than the .05 alpha level and thus indicates a statistical significant relationship exists between the variables. Also, the table shows p-value of .59 for the relationship between male students' perception scores of the controlling dimension of their teachers' communication behaviours and performance scores in Basic Science. This p-value is greater than the .05 alpha level and thus indicates a non statistical significant relationship exists between the variables. The overall p-value of .00 as indicated in the table above, which is less than the .05 alpha level shows a statistical significant relationship exists between male students' perception scores of their teachers' communication behaviours and performance scores in Basic Science.

Hypothesis 3: There is no significant relationship between female students' perception scores of their TCBs (challenging, encouragement and praise, non-verbal support, understanding and friendly, controlling) and performance scores in Basic Science

Table 6: t-Test of Significance of Relationship between Female Students' Perception Scores of their Teachers' Communication Behaviours (TCBs) (Challenging, Encouragement and Praise, Non-Verbal Support, Understanding and Friendly, Controlling) and Performance Scores in Basic Science

TCBs	Achievement(r)	P-value	Decision
Challenging	.02	.68	Not significant
Encouragement and praise	.24	.00	Significant
Non-verbal support	.18	.00	Significant
Understanding and friendly	.27	.00	Significant
Controlling	.02	.68	Not significant
Overall	.23	.00	Significant

Table 6 shows p-values of .00, .00 and .00 respectively for the

relationship between female students' perception scores of the encouragement and praise, non-verbal support and understanding and friendly dimensions of their teachers' communication behaviours and performance scores in Basic Science. These p-values are less than the .05 alpha level and thus indicates a statistical significant relationship exists between the variables. Also, the table shows p-values of .68 and .68 for the relationship between female students' perception scores of the challenging and controlling dimension of their teachers' communication behaviours and performance scores in Basic Science. These p-values are greater than the .05 alpha level and thus indicates a non statistical significant relationship exists between the variables. The overall p-value of .00 as indicated in the table which is less than the .05 alpha level shows a statistical significant relationship exists between female students' perception scores of their teachers' communication behaviours and performance scores in Basic Science.

Discussion

The findings of this study showed a low positive relationship exists between upper basic nine education students' perception scores of the challenging, encouragement and praise, non-verbal support and understanding and friendly and controlling dimensions of their teachers' communication behaviours and performance scores in Basic Science. The findings of the study also showed the same low positive relationship for both male and female students. This relationship can be attributed to the view that students being the recipients' of classroom teachers' teachings are influenced by their teachers' communication behaviours in the class and thus may be willing to put in more effort towards optimum academic performance when they perceive these communication behaviours of their teachers to be effective and geared towards their academic success.

The findings of this study is in line with the study of Eupena (2012) who posited that all the dimensions of the science teachers' communication behaviours were instrumental in improving students' performance in science. The findings of this study also agree with the findings of Akudo (2020) who was of the opinion that students can be motivated towards academic success by their teachers through the use of effective communication strategies. The findings of this study also lends credence to the findings of Asrar, Tariq and Rashid (2018) as well as Obilor (2020) that effective classroom teachers' communication improves students' success and academic performance.

Again, the findings of the study showed that the low positive relationship exists between upper basic nine education students' perception scores of the encouragement and praise, non-verbal support and understanding and friendly dimensions of their teachers' communication behaviours and performance scores in Basic Science are significant while that of challenging

and controlling dimensions are not significant. For the male students, only the low positive relationship between male students' perception scores of the controlling dimension of their teachers' communication behaviours and performance scores in Basic Science is not significant while the others are significant and this could be attributed to the male gender's inherent tendencies to resist behavioural control or regulations of all forms. For the female students on the other hand, the low positive relationship between their perception scores of the challenging and controlling dimension of teachers' communication behaviours and performance scores in Basic Science are not significant while the others are significant and this could be attributed to the female gender's inclinations to fragility and their recently developed tendencies to resisting behavioural control or regulations just like their male counterparts.

However, the findings of this study show that the influence of gender in the relationship between students' perception scores of their teachers' communication behaviours and performance scores in Basic Science is not significant. This finding agreed with the findings of Al-Madani (2015) that no statistical difference is found between students' achievement and their faculty members' verbal communication across their gender and even year of study. This finding however, contradicts the assertion of Han and Tosten (2016) who opined that a statistical difference exists between students' perception of their teachers' in-class and teacher-to-student communication.

Conclusion

The findings of this study are pointers to the fact that the way students perceive their teachers to be effective in classroom communication influences their academic performance in Basic Science. This influence is same for both male and female students.

Recommendations

Based on the findings of the study, the following recommendations were made;

1. sufficient strategies such as in-service training, conferences and seminars be deployed by governments and school authorities for engaging teachers in order to improve their communication behaviours
2. the services of school guidance counsellors should be employed in order to help teachers with poor communication behaviours
3. governments and other relevant stakeholders should provide educational facilities and incentives that would attract only the best to the teaching profession

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THE VALUE OF FORMAL EDUCATION IN THE PERSONAL DEVELOPMENT OF PRIMARY SCHOOL PUPILS

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Abstract: *Education has a decisive role on the personal development of the individual. It is especially important that from an early age the individual should have an effective education that will reflect on his entire life. Along with education, the internal and external factors that condition the development of the individual also play an important role. Internal factors are heredity and psychosocial and biological influences and the main external factor is the environment. A relationship of interdependence and mutual and continuous correlation is established between the internal and external factors of development. Each factor helps and determines the formation and development of the other in order to achieve the goals of education. The school offers the student the framework for development, training, socialization starting from the knowledge of the individual and age peculiarities specific to each stage of development, by designing a strategy and by carrying out a rigorous didactic approach, based on a program, planning, educational resources, methods. and didactic strategies aimed at achieving the objectives and the proposed goal. The present article shows the results of a brief research on the personal development of pupils and some elements of personality through instructive-educational activities within the frame of the formal education. The main instrument used was the questionnaire, applied to a number 73 4th grade pupils from a class from Arad County. The questions*

relate to the experiences of pupils in formal education and especially to the way in which they perceive the changes, events, learning and socialization that take place in these years and the way all these connect to the development of their personality through education.

Key words: *personal development; primary school; formal education; development.*

Introduction

School, as a specific formal institution, designed to train young generations, justifies its existence and role, through the processes it leads and whose result - the man trained as a personality - becomes the primary factor of social progress. The education achieved through the school transforms the student from the object into its subject. With the formation of self-awareness, systematic feedback determines the student's cooperative attitude with his educator.

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. Because students feel valued, they gain confidence, they learn to communicate with others, they have the chance to learn authentically and deeply, from several perspectives on a topic, to internalize various learning experiences and to clarify their own values and attitudes towards knowledge, internalize a continuum between what they learn at school and what they learn in other contexts, non-formal or informal. 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.

Formal education is especially important because it shows the irrevocable effects of education on the formation and development of an entire society. An uneducated child is just like a whiteboard. It has no essence, no values and, obviously, it will be a maladaptation of society. For, in addition to the own needs that education nourishes, education also “feeds” the needs of the society of which the child belongs. Every modern, evolved and democratic

society wants its people to be educated, which is why formal education is free up to a certain point.

Theoretical foundation

Education is a holistic process that cannot be limited only to schools. It is a lifelong process. Ordinary events in our daily lives educate us in one way or another. It would not be an exaggeration to say that the existence of human beings is fruitless without education.

An educated person has the ability to change the world, as he is full of life, confidence and is assured of making the right decisions at the right time. Personality development does not mean enriching a person's prospects by getting good grades, but a suite of many other things. Personality development is self-awareness. It includes all the traits it possesses, its strengths and weaknesses. (Cristea, 2000)

Education is the most vital institution in the social world that has as components economic, political, religious and other institutions. As an essential component of society's education, it is then linked to other institutions, including political ones. The object of education is to awaken and develop in the child those physical, intellectual and moral states which are required of him by his society as a whole and by the environment in which he is specially destined. Education helps to develop the qualities of an individual, such as his physical, mental and emotional make-up, as well as his temperament and character, which is called personality. (Cucoș, 1995)

Education is a conscious and deliberate effort to create a learning atmosphere and learning process so that students actively develop the potential for it to have the spiritual power of religion, self-control, personality, intelligence, nobility and the skills necessary for it. society itself. (Piaget, 1980)

Concepts that education cannot contribute to human change have emerged since the slavery period, when the interests of the ruling classes were thus defended. At the same time as theories proclaiming heredity as a decisive factor in the formation of man, doctrines and doctrines have appeared in the literature claiming that the environment determines everything and nothing can be achieved through education. Therefore, the environment would fatally determine human becoming. These pessimistic theories, which deny the power of education, have also led to the denial of education itself. Thus, in the late 1800s, instead of pedagogy, pedology appeared, not as a science of education,

but as a pseudo-science based on the theory that the cause of school failure is heredity and the environment. (Siebert, 2001)

Today, few psychologists would be willing to state unequivocally that development is due solely to one or another of the factors listed above - it is clear that both heredity and the environment and education contribute to human development. Heredity and the environment, in a perfect interaction and unity, constantly promote human development, but not spontaneously, but in a structure with a new, conscious function, a new factor in human formation - education. From this perspective we can say that education controls and organizes the influences of the environment on the individual, adapting them to his age and individual characteristics. That being said, education makes the connection and mediates between the potential for development, proposed by heredity, and the offer of possibilities of the environment. Education harmonizes the heredity-environment interaction and creates a favorable climate for updating genetic potential, which is why we can say that education is a human activity specialized in development. (Mândâcanu, 2010)

Formal education is usually divided into stages such as: preschool or kindergarten, primary school, secondary school and then college, university or apprenticeship. The right to education has been recognized by governments and policies in all countries of the world. In most regions, education is compulsory until a certain age. There is a movement for education reform and, in particular, for evidence-based education, with global initiatives aimed at achieving the goal of sustainable development, which promotes quality education for all.

Historical view and modern perspectives on the formal education

Education began in prehistory, as adults trained young people in the knowledge and skills considered necessary in their society. In pre-literacy societies, this was done orally and by imitation. The story passed on knowledge, values and skills from one generation to the next. As cultures began to expand their knowledge beyond skills that could be easily learned through imitation, formal education developed. Schools existed in Egypt during the Middle Kingdom. Plato founded the Academy in Athens, the first higher education institution in Europe. The city of Alexandria in Egypt, founded in 330 BC, became the successor of Athens as the intellectual cradle of ancient Greece. There, the Great Library of Alexandria was built in the 3rd century BC. European civilizations suffered a collapse of literacy and organization after the fall of Rome in the EC 476. In China, Confucius of Lu State was the country's most influential ancient philosopher, whose

educational outlook continues to influence Chinese and neighboring societies. Korea, Japan and Vietnam. Confucius gathered disciples and searched in vain for a leader who would adopt his ideals of good governance, but his Analects were written by his followers and continued to influence East Asian education in modern times. (Miroiu, 1998)

After the fall of Rome, the Catholic Church became the sole custodian of literacy scholarships in Western Europe. The church established cathedral schools in the early Middle Ages as centers of advanced education. Some of these units eventually evolved into medieval universities and the forerunners of many modern universities in Europe. During the Middle Ages, Chartres Cathedral was home to the famous and influential Chartres Cathedral School. Medieval universities in Western Christendom have been well integrated throughout Western Europe, encouraging freedom of inquiry, and producing a wide variety of natural scientists and philosophers, including Thomas Aquinas of the University of Naples, Robert Grosseteste of Oxford University. , an early exponent of a systematic method of scientific experimentation, and Saint Albert the Great, a pioneer of biological research in the field. Founded in 1088, the University of Bologna is considered the first and oldest continuously operating university.

Throughout life, people are subject to choices. The choices we make can have a huge impact on our future. A special role in our choices is played by the reason we make that choice. Personality, interests also determine the direction of the election. The environment also plays an important role because we are often limited in space and therefore we have to make choices based on the social and cultural conditions specific to our situation.

Personal development and the role of education on the personality traits

Personality is defined as the characteristic sets of behaviors, cognitions, and emotional patterns that evolve from biological and environmental factors. Although there is no agreed upon general definition of personality, most theories focus on motivation and psychological interactions with the environment. Trait-based personality theories define personality as the traits that predict a person's behavior. On the other hand, more behavioral approaches define personality through learning and habits. However, most theories consider personality to be relatively stable.

Personality refers to individual differences in characteristic patterns of thinking, feeling, and behavior. The study of personality focuses on two broad areas: One is the understanding of individual differences in certain personality

traits, such as sociability or irritability. The other is to understand how the different parts of a person come together as a whole. (Schwartz, et all, 2008)

The term personality has been defined in many ways, but as a psychological concept, two main meanings have evolved. The first refers to the consistent differences that exist between people: in this sense, the study of personality focuses on the classification and explanation of relatively stable human psychological characteristics. The second meaning emphasizes those qualities which make all men the same and which distinguish the psychological man from other species; he urges the personality theorist to look for those regularities among all the people that define human nature, as well as the factors that influence the course of life. This duality can help explain the two directions that personality studies have taken: on the one hand, the study of increasingly specific qualities in humans and, on the other hand, the search for the organized totality of psychological functions that emphasize the interaction between organics. And psychological events inside people and those social and biological events that surround them. The dual definition of personality is intertwined in most of the topics discussed below. It should be noted, however, that no definition of personality has found universal acceptance in the field. (Roman & Dughi, 2007)

Behavioral theories suggest that personality is the result of the interaction between the individual and the environment. Behavioral theorists study observable and measurable behaviors, often ignoring the role of inner thoughts and feelings. Behavioral theorists include B.F. Skinner and John B. Watson. Humanistic theories emphasize the importance of free will and individual experience in developing a personality. Humanist theorists include Carl Rogers and Abraham Maslow.

The idea that people fall into certain categories of personality types in relation to bodily characteristics has intrigued many modern psychologists, as well as their counterparts among the ancients. However, the idea that people need to fall into one or another rigid personality class has largely been rejected. Here are considered two general sets of theories, humoral and morphological. (John et all, 2008)

Development is a complex process that involves irreversible transformations in nature and society that lead to qualitative and quantitative upward change even if there are still phases of regression along this continuum. In humans, development is a process by which new functional structures are created that differentiate behavior leading to better adaptation to

the environment. Human development is a permanent, lifelong process, which is why J. P. Tanner calls it secular development. By development, in general, is meant a complex process of transition from lower to upper, from simple to complex, from old to new, through a succession of stages, stages, each stage representing a functional unit more or less cohesive, with its own qualitative specificity.

The transition from one stage to another involves both quantitative accumulations and qualitative leaps, these being in a mutual conditioning. Personality development is manifested by the incorporation and establishment of new behaviors and attitudes that allow active adaptation to the requirements of the natural and socio-cultural environment. Development allows and facilitates the establishment of increasingly differentiated and subtle relationships of the human being with the environment in which it lives and is formed. (Dafinoiu, 2001)

Education controls and organizes the influences of the environment on the individual, adapting them to his age and individual characteristics, both in regular classes, as in special educational situations. (Roman, 2018) That being said, education makes the connection and mediates between the potential for development, proposed by heredity, and the offer of possibilities of the environment. Education harmonizes the heredity-environment interaction and creates a favorable climate for updating genetic potential, which is why we can say that education is a human activity specialized in development. (Balaș, 2019) Without denying the importance of hereditary and environmental factors, however, we are entitled to say that education, which includes a complex system of actions and influences of a formative and informative nature, has a major role in mental development and in the formation of human personality.

The source of development is, as is well known, the internal contradictions that arise as a result of external demands. Creating the means to overcome and resolve these contradictions is primarily a matter of education. On the one hand, education provides the contents to be assimilated, on the other hand it is concerned with how to assimilate them, the formation of human capacities to not be confused by obstacles or unfavorable influences and to be receptive. to the positive influences of the environment. (Enăchescu, 2008)

Research methodology

This research is a benchmark for teachers who want to learn about the role of education in the development of students' personality: from definitions of concept, structure, functions, theories, particularities and classifications, to its importance in the life of young students. By conducting this research, we aimed to analyze the current situation of the Romanian school, at primary school level, in terms of organizing instructive educational activities, and how they may or may not develop students' personality significantly.

The objectives formulated for the proposed research are:

1. Bibliographic documentation in order to obtain the information necessary to carry out the research.

2. Definition and description of education.

3. Defining and describing personality.

4. The analysis of the existing relations between the development of the personality of the small schoolchildren and the instructive-educational activities used in formal educational systems from the educational institutions from Arad.

5. Design / design and application of questionnaires, which collect and capture both qualitative and quantitative data, in order to measure the degree to which the formal education offered in the application school, in the chosen class, can develop some component parts of the students' personality.

6. Analysis of the results obtained in order to improve the instructive educational programs offered at the application class

Research hypothesis

Participation in instructive educational activities within formal educational institutions, contributes significantly to the development of the personality of students in primary education.

Variables

The variables represented by the subjects can be delimited in two categories:

• variables that describe the participants: group, gender, age, class.

• variables that describe the presence, absence or level of development of their personality.

Independent variable

The independent variable consists in the diversification of the opportunities for the formation of the personality of the students from the primary school, by participating in instructive educational activities within the formal education.

Dependent variable

The dependent variables show changes in the development of the students' personality, or of some elements within it, by participating in instructive educational activities offered within the formal educational systems.

Subject sample

The sample of subjects we worked with was established based on criteria and taking into account the chronological age of the subjects (schoolchildren aged 10 to 11 years). We worked with a number of 73 subjects. The subjects were selected from a primary school in Arad County, from 4th grade classes.

The sample of subjects, subject to research, consists of 73 students, aged between 9 and 10 years. In general, the pupils of the 4 classes come from families with a good financial situation. Most students attend school regularly, so there is a good informal relationship in the classroom. They have a well-developed material base; with a well-organized classroom and the teaching materials they need for each learning activity.

Both traditional and interactive teaching-learning methods, typical of formal education systems in Romania, were used in this research. Considering that the research was carried out in two 4th grade classes within a school in Arad County, the learning consisted of using the contents given by the school curricula for this age level.

Methods and instruments of research

The research tool that was used in this research was the questionnaire. Through this, we proposed to investigate how fourth graders who participated in the research relate to the primary school cycle and especially how they

perceive the changes, events, learning and socialization that take place in these years.

To this end, we have designed and applied a questionnaire for fourth graders, which included 18 mixed questions, with open and closed items, through which we wanted to find out how pupils who completed the questionnaire, developed as a representation the school in general, and especially the way in which the educational activities within the educational institution they attended and still attend, positively or negatively influenced the formation of their personality, the development and their becoming. In this tool, we collected more qualitative data, in which students were allowed to freely and anonymously answer questions about their training so far.

The created questionnaire followed the actual structure with two parts: the introductory part and the actual questions. In the first part, we motivated the participating students, the need to prepare and apply it, we have specified the title of the research in which we have used the answers received by them, making clarifications and comments on how students should answer the questions in the questionnaire, emphasizing the sincerity of their answers.

In the second part of the questionnaire, we asked 18 questions clearly and concisely, using language accessible to students, even using images in which students had to find a suitable title. A total of 73 pupils completed the questionnaire, freely choosing to do so, and were not pressured in any way to complete this task. They answered all the questions in the questionnaire, these being short and accessible questions, thus providing sincere and short answers, as they liked.

Findings and results

During the research, 73 answers were recorded in the questionnaire, in the first stage, out of a number of 73 students participating in the research. Of the 73 participants, 52.2% were female and 47.8% were male.

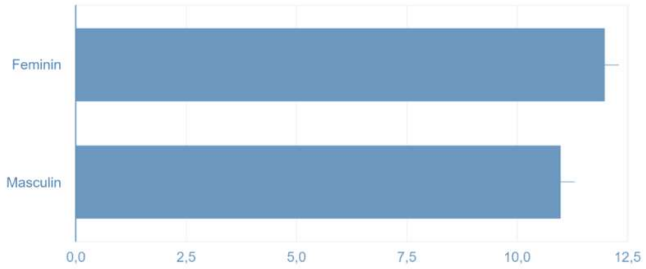

Chart no. 1. Gender of participant pupils

Regarding the most interesting questions and answers of the research, we are going to present some. One question of interest was: *What was the happiest time spent in the 5 years of school?* The students' answers are presented as follows:

First day of school
I liked it the most when we celebrated 500 days of school
The happiest moment of these 5 years was March 8 this year.
When I went on a trip
The most beautiful moment was when I went to class two years ago on a trip, I felt fine with my colleagues and the teacher
My birthday is the happiest moment
When my colleagues applauded at the puppet show
When I came to school
When I was applauded
The happiest moment spent in the 5 years of school was when we went to see the fire station in a different town
When I first took A+
The celebration of 300 days of school
The happiest moment was when I started school
When I met new colleagues
The happiest moment was the Christmas celebration with the class
I had a happy time in all the classes
The happiest moment of the 5 years of school was when we turned 500 days of school. It was a very beautiful moment.
Going to school physically, socializing and learning new things
Doing extracurricular activities

The best moment was when I first arrived at school

Table nb. 1. Participants answers regarding the happiest times in school

From the answers given by the students, it can be seen that the main moments that developed their personality were: socializing, physically participating in classes at the expense of classes in the online version, the big moments of celebration in school, extra-curricular activities. made with the class and the moments when they were motivated and praised after achieving good and very good grades and the first day of school.

The next question in the questionnaire related to the topic of interest was: *What is your favorite school subject?* An open question was used. Of those who answered this question, most argue that Romanian language and sports are their favorite subjects. (21% and 8.7% respectively).

Another question in the questionnaire of particular importance for the topic was: *What did you learn from your favorite school subject?*

Respondents filled in with free phrases or expressions. Most of the answers were related to the content criterion of learning, respectively the part of development at the cognitive level. Another type of response from the 73 participants was health and social development. Unfortunately, as it was shown in other studies, transversal competencies were not mentioned in response to this question. (Torkos & Pasinszky, 2021) Some of the answers are shown in the table below:

I learned to calculate
New ways of calculating
Gather, subtract, multiply and divide, etc.
I learned about maintaining health
That we need to keep our bodies healthy
Many multiplications
We learned from sports that we need to keep our bodies healthy
I learned the multiplication table, division, problem solving, and more.
Many stories
I developed my curiosity
My favorite subject was learning parts of speech and parts of sentences
How to add, multiply, subtract, divide
I broadened my artistic horizon
Many calculations
Spelling and punctuation
To think logically

Reverse methods
I learned about the counties of Romania
I learned to draw
About our ancestors and their deeds

Table nb. 2. Students' answers regarding the knowledge, skills and attitudes learned through their favorite subjects

Using the following question from the questionnaire: *Tell me what you think is more important — to have a healthy body, a good mind, a good heart, or respectful behavior? Or all of them? Why?* we wanted to know the opinion of fourth graders about their values in life. Most of them considered all the elements to be important. The arguments for choosing this answer refer mainly to those around them and then to themselves. This shows that pupils are at an age when socializing, relationships, the image and opinion of others is very important to them. Some answers also made it clear that they are able to differentiate between good and improper behaviors, and are trying to harmonize their own values with those developed through education.

We also wanted to find out in this questionnaire the significance of homework for each of the students, because this aspect is present in formal education, in the daily activity of pupils, giving them the opportunity to develop and educate through their realization. Also, a second question on this topic was whether students believe that adults have homework. We considered this question important because it refers to lifelong learning and the willingness of students to do so. From their answers, it can be seen that pupils link lifelong learning to certain professional categories.

We have formulated a question about the recommendations that pupils would make to adults, teachers, parents, the immediate social environment. We gave the answer to this question the free answer, and the analysis of all the answers provided is in the chart below:

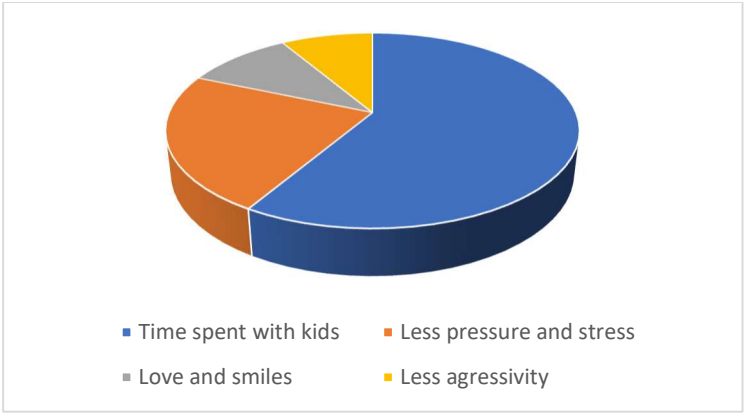

Chart no. 2. Pupil's recommendations for adults

The highest percentage in was the time spent more with children, in second place is less work and implicitly less stress, hence the fact that the choice of job from the perspective of respondents is directly related to the level of stress. Approximately a similar percentage of responses chose more attention, smiles and love, and less verbal and physical aggression.

A reference question for the chosen topic referred to the professional perspectives of pupils. This question is of particular relevance in the present research, because the development of personality through education also means a good choice for the future career, based on the skills that were developed during schooling. All the answers are listed in the following chart:

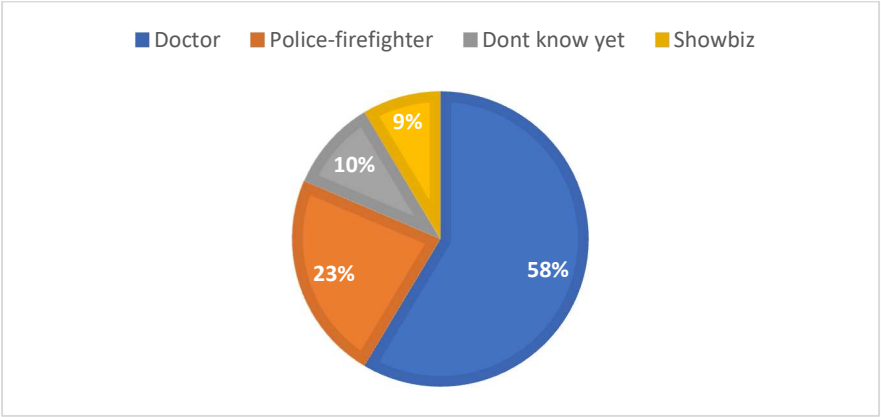

Chart no. 3. Future perspectives at the end of 4th grade

The next question in the questionnaire was: *What do you think the activities (both at school and during extracurricular activities) that you have participated in so far have helped you?*

Among the answers provided were listed the following:

- Creativity
- Learning
- Development
- Socialization
- Key competencies
- Transversal skills
- Life skills.

To the question: If you were to give three pieces of advice about a friend's behavior in society, what would they be? The answers were presented as follows:

- Politeness
- Sincerity
- Altruism
- Respect
- Honestly
- Kindness
- Learning.

Pupils' answers can be interpreted as showing values of individuals who, through education, can develop good traits that prepare them for life.

80% of the students participating in the questionnaire say that they enjoy going to school. These answers are gratifying, because at the end of the study cycle, there is the habit and lack of enthusiasm of the students. Two students claim that they do not like going to school at all, and they do this out of obligation, and only one student scored 2 on this question. Three students chose a score of 4, which means that even if not completely, but they gladly go to school.

The question: *How important do you consider school subjects to be for your education?* Makes the connection between the emotional side of the questionnaire and its cognitive side. 80%, chose to give a score of 5 points, thereby motivating the fact that the subjects they study are very important for their development. A percentage of 13.3% gave a score of 4, which means that the subjects studied in the formal education system are considered to be important. Only one student chose to score 1 and score 3.

How motivated do you feel to learn new things? was the next question, through which we wanted to test not only the students' motivation, but also the degree of curiosity they have at the end of the fundamental acquisition cycle, regarding the contents of the school curricula. Curiosity is that interactive feature of a being through which it spontaneously explores its ambience and

seeks changes in its structure or dynamics. Pupils, have raised *curiosity* to the rank of fundamental quality and puts it at the base of all his own connections and implications.

Do you like to express your opinion usually in front of your colleagues? was the question that tests the courage to initiate opinions and communication situations at the class level. The competency behind this is critical thinking. The expression of personal opinion is one of the fundamental freedoms of man. It is the defining quality of any person; the idea of life, of the actions of those around you, but also of the problems of society. The school should teach us about the power of this right and how we should use it. For example, we should learn how to structure a discourse on a particular topic, how to express our opinions in public, but also how to listen and discuss the opinions of others. Even if there are certain discussion groups in some schools, they are still not enough because participation is reserved for a relatively small number of students, the selection often being made on the basis of skills already formed in this regard. This competence shows a personality element of the students that can be developed if the communication within the group or the class is encouraged. A large majority of those who participated say that they have the courage to express their own opinions and opinions towards their colleagues. This shows that formal education develops certain elements within the personality of students.

What would you like the school to be like in the 5th grade? is the last question pupils answered as it follows:

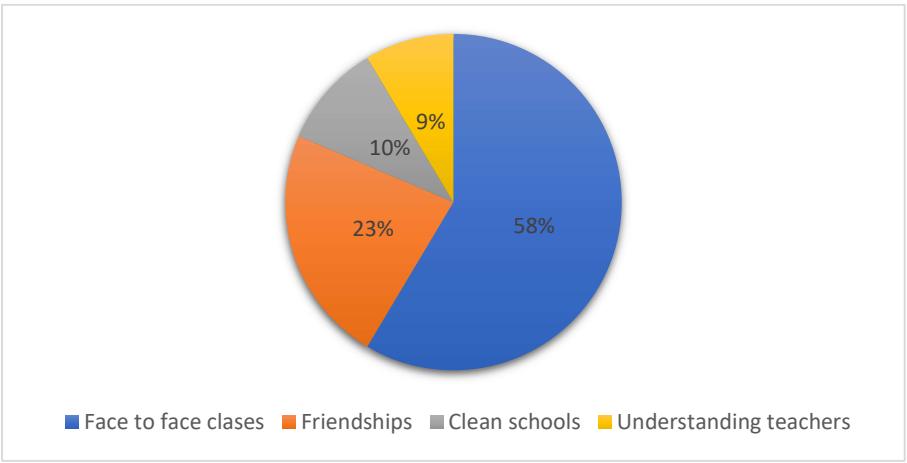

Chart no. 4. Future perspectives at the end of 4th grade

Most respondents, 58%, would choose a school where the courses take place face to face, meanwhile 23% want to make more friends. An almost equal percentage of respondents believe that in the next cycle of studies, teachers should be more understanding and the school cleaner.

Conclusions

After observing the students throughout the study and analyzing the ways in which universities prepare and this way contribute to the development of future teachers, we found the following:

• formal education has a large number of pluses. It tends to increase the qualification and can be used to accumulate an impressive resume. In addition, the person who hires a formally qualified person knows for sure that the person knows the subject well and can be hired. He / she has the necessary expertise to do a certain task, and this gives the individual an excellent job, financial security and, in turn, a bright future.

• more than knowledge, it instills self-confidence (among other things), which is essential for a successful future.

• develops intelligence, curiosity, passion, character, motivation, intuition, writing skills and the ability to make intelligent value judgments.

Formal education is an important part of children's daily lives and - together with the family - is the most important source of children's educational progress in most countries. Therefore, parents' attitudes towards school and involvement in school activities have long been studied as an important factor in children's educational progress. Parents' involvement in the formal education of their children is positively related to the achievement of their children: parents of high-performing children tend to have more positive attitudes towards school, participate in school functions, volunteer at their children's schools and get to know better teachers than the parents of underperforming children. (Roman, 2019)

Some theorists have pointed out that families with higher socio-economic status are more comfortable with the cultural environment of schools and thus find it easier to address teachers and school administrators than families with lower socio-economic status. These barriers to parental involvement are even greater when parents are a disadvantaged minority group and have had previous contacts with school officials who have been negative. (Albulescu, 2009)

Formal education is essential for the development of a nation. Only by implementing a formal learning system can any country hope to develop a well-informed society and progress towards achieving societal goals. This belief prevailed in Europe, Britain and the United States in the 19th century, and during this period the basic principles of a formal learning system were established and developed. Social problems threatened to destroy the very fabric of society, and education was seen as a powerful solution. (Stanculescu, 2019)

Personal development can also be seen as a cycle or a spiral. The similarity with education is striking. Both are introduced through a process of internal analysis, reflection and questioning. In the same way that the student uses this step to take responsibility for any change in the knowledge base, in personal development the individual gives authority to the changes that will take place in performance and attitude. Personal development can be encouraged and assisted, but because it has the potential to change one's perception and self-perspective, those who would facilitate the process in others must do so ethically. (Dughi & Roman, 2008; Roman & Coșarbă, 2020)

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STUDENTS' SELF-EFFICACY AND FEURSTEIN INSTRUMENTAL ENRICHMENT

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Abstract:*The present experimental study aims to highlight the role of the instrumental enrichment program proposed by Reuven Feurstein in improving pre-adolescent learning facilitating attitudes. We refer to perceived self-efficacy and locus of control. These traits were evaluated in a 40 children group at the beginning of the experimental stage with specific tests. The group was also divided into control group and experimental group. The intervention involved the organization of 12 workshops during which two tools from the Feuerstein method were used - Organization of points and Instructions. The statistical processing of the obtained data highlighted a significant increase in the perceived self-efficacy of the students we worked with, as well as a shift of emphasis from the locus of external control to the locus of internal control. These aspects allow for a better involvement in learning by increasing students' responsibility and self-confidence.*

Key words: *learning; Feuerstein Instrumental Enrichment; self – efficacy; locus of control; pre – adolescent*

1. Mediated learning theory and the Feuerstein method

The Instrumental Enrichment Program (FIE) was developed by Feuerstein and his colleagues between 1950 and 1960 while working with Youth Aliyah - an Israeli agency for the placement of children of Jewish immigrants after World War II. Many of these children had suffered traumatic and emotional loss as a result of separation or the loss of their parents during the war. With the aim of placing these children in educational institutions in Israel, he experienced great dissatisfaction with the results obtained by them in the joint intelligence tests applied. Measurements showed them to be between three and six years old behind children of the same age in Israel.

In this context, Feuerstein made every possible efforts to find a way to improve the performance of these children, thus developing the Theory of Cognitive Structural Modifiability followed by the Theory of Mediated

Learning Experience. The theory of Cognitive Structural Modifiability aims to explain the different level of development of children's cognitive abilities, being defined as the ability of the individual to change or modify the structure of cognitive processes or thinking in response to changing environmental requirements. The theory includes a model that explains how learning takes place, which not only explains why individuals experience a different cognitive development, but also the main role of the interaction, called the Mediated Learning Experience (Maxcy, P., 1991).

According to Feuerstein's learning theory (2002, 1995), the first and the most natural way of learning is through direct exposure to stimuli or the environment. This model is based on two other different theories, namely the behaviorist theory stimulus - response (S-R) and the constructivist one which also introduces the body into the model: stimulus - organism - response (S-O-R). Feuerstein also extends this model and includes the human component, usually an adult, which interposes itself between the child (organism) and the learning stimulus and then again between the child (organism) and the response. Thus Feuerstein's model becomes: stimulus - human intervention (Human = H) - organism - human intervention - response (S - h - O - h - R). What is important to note is that Feuerstein does not minimize the role of S-R or S-O-R models in the aquirement process, he only argues that the quality of learning is further influenced in a learning process mediated by a significant adult in the child's life.

Feuerstein's theory is also influenced by Vygotsky's notion of the Child's Zone of Proximal Development. Successful mediated learning involves the existence of three elements that, according to Feuerstein, must be present during instrumental enrichment sessions:

- **The intentionality and reciprocity** of the mediator is manifested through attitude, facial expression and action. It is a conscious intention, even if only for the moment, of the mediator to develop a piece of the child's knowledge. It is a clear signal that the act of learning is deliberate and not random.
- **Transcendence** implies that through mediation, the knowledge transmitted is not only intended to solve the current problem, but also to make a connection with the whole or other areas of interest. Through the discussions initiated by the mediator, a process of analytical thinking is developed through which the child is mediated to discover analogical relations between the concept and another life experience.
- **Purpose** by mediating the meaning that learning has for the child. The mediator also mediates the feeling of success and determines the child to reflect not only on the solution of the problem, but also on the way in which the solution was obtained and the

generalizations that derive from it. (Dughi, Ardelean, 2020; Dughi, Dughi, 2020)

Additionally to these three elements, without which the mediation process is not considered to take place, Feuerstein also proposes the presence of other elements such as: mediation of the sense of competence, mediation of rules of behavior, mediation of participatory behavior, psychological individualization and differentiation, mediation goal planning, mediating the challenge of interest, mediating for self-change, mediating the individualization of the optimistic alternative and mediating the feeling of belonging (Todor, Dughi, Dughi, 2021; Todor, 2014).

The model proposed by Feuerstein supports the idea that thinking and cognitive structures are open systems that can be changed at any age, but especially during preadolescence and adolescence, a period for which the instrumental enrichment program was originally created. While Feuerstein rejects the idea of critical or optimal age for cognitive development, the materials used in the program seem to be an effort to construct tasks that reproduce for adolescents cognitive experiences that should have been mastered from a younger age according to developmental stages. of Piaget (Maxcy, P., 1991).

The main objective of using the Instrumental Enrichment Program is that of cognitive modifiability, but it is operationalized by other "sub-objectives such as:

- correction of cognitive impairment
- introduction of an intrinsic motivation in the development of cognitive functions
- developing intrinsic motivations for increasingly complex tasks
- facilitating the construction of a favorable self-image, as a person able to create information, to detect differences, facts, problems and new ideas, in order to act according to well-defined values and criteria "(Todor, O., 2014, 27 - 28).

The implementation of the Instrumental Enrichment Program in practice involves the use of a number of 14 instruments with controllable values in achieving the above objective and sub-objectives. The tools include pencil-paper tasks targeted toward specific cognitive areas such as analytical perception, spatial orientation, comparative behavior, classifications, and more. The program is mediated by a certified mediator and can be carried out collectively, in individual meetings or in remedial activities. Task mastery is not about learning by memory or just about reproducing a learned skill. Therefore, the Instrumental Enrichment Program systematically strengthens cognitive functions that allow learners to define problems, make connections, and identify relationships, develop intrinsic motivation, and improve skills. (Todor, Dughi, Dughi, 2021)

The fourteen tools focus on specific cognitive functions. The process of learning how to learn takes place through repetition, not only through the repetition of the tasks of the program itself, but through the repetition of cognitive functions that allow the individual to think effectively. Tasks increase in complexity and level of abstraction, and tools strengthen cognitive functions in a cyclical form. Tasks are deliberately transferable to any life situation. Through the mediated learning program, students learn to develop their ability to apply their cognitive functions to any problem or thinking situation.

2. Objectives and hypotheses of the experimental study

The study aims to demonstrate that by using the tools included in the instrumental enrichment program and applying the principles of mediated learning in specific activities with pre-adolescent children can increase their confidence in their own abilities to mobilize the cognitive and motivational resources needed to meet success of goals in general and schoolwork in particular. The approach was also designed to reduce the effects of the social measures during the pandemic on learning. Isolation, online learning, changing learning rhythm have produced effects that can be reduced by their awareness and learning efforts (Maier, 2021, Roman et al., 2020).The assumptions are as follows:

- The use of the Feuerstein Method improves the perception of self-efficacy;
- The use of the Feuerstein Method leads to an increase in confidence in one's ability to influence school performance.

3. Participants

The experimental study was conducted on a number of 40 children, with specific ages of pre-adolescence, respectively between 10-14 years. The group is divided into two distinct groups, namely the experimental group (20 subjects) and a control group (20 subjects). The children who form the experimental group come from a number of 11 schools in Timișoara, being students in middle school classes. The agreement for the participation of the children included in the study was requested and received from the parents / guardians of the minors. The structure of the two groups was homogeneous in age, respectively a total of 10 children of 10 years, 6 children of 11 years, 8 children of 12 years, 8 children of 13 years and 8 children of 14 years divided equally between the two groups.

4. Tools and methods used in the study

In the experimental study we started from the application of all children, both in the control group and in the experimental group of the

following questionnaires:

Locus of Control – Rotter Scale

The Rotter questionnaire consists of 40 closed-ended questions with Yes / No answers that are answered according to the preferences of each respondent. Of these, 24 are directly rated and 16 are reverse rated. A high score obtained (> 15) means a locus of external control associated with a high level of stress, the respondent having a strong belief that events exceed his ability to control, without identifying a causality between his own behavior and results. A low score obtained (<7) means a locus of internal control associated with an increased tolerance to stress, the respondent having a strong belief that the results of the actions are strongly influenced by their own behavior and effort. This dimension of personality is related to efficiency in activity and learning. (Dughi, Ignat, 2018).

Scale of personal self-efficacy – Bandura

The scale developed by Bandura (2006) and applied in this experimental study includes 10 items of statements with the following answer options: 1 = never, 2 = sometimes, 3 = often, 4 = always. These statements include attitudes that the subject may take in the face of a difficult situation, and the answer is how to act in general. The interpretation summarizes the scores obtained, a low score obtained (<21) represents a feeling of low self-efficacy, and a high score obtained (> 30) represents a feeling of high self-efficacy.

5. Carrying out the experimental study

There were organized and conducted twelve 90-minute Mediated Learningworkshops between October 2020 and February 2021. Prior to this learning approach, all children, both in the control group and in the experimental group, were tested with the two tests described above. The tests were conducted individually and collectively face to face. The children in the study group were divided into two working groups, following a criterion of homogeneity according to age and school level.

Due to the restrictions imposed by the pandemic during this period, the workshops could not be organized weekly, with quarantine situations occurring among the children's families, which led to the suspension of the workshops for 14 days each. We consider that the possibility of organizing the workshops continuously during 12 weeks could have determined more differentiated results between the experimental group and the control group.

The tools used in the workshops were:

- Organization of Dots - Standard level I - a number of 18 worksheets
- Instructions - Standard level II - a number of 30 worksheets

The choice of these tools was based on the specific objectives of each instrument and the concurrence of these objectives with those of this study. Thus the individual objectives of the applied instruments are:

- Providing opportunities to perform a series of cognitive operations: hypothetical thinking, inferential thinking, hypothesis formation;
- Development of an intrinsic system of habits to repeat tasks that are essentially similar, with the aim of improvement;
- Encourage intrinsic motivation by successfully solving challenging tasks;
- Promoting independence of action by referring to internal references;
- Develop one's own ability to self-regulate independently and completely (Feuerstein, R. 1995).

Organization of Dots - this tool proposes the design of virtual relationships through tasks that require individuals to identify and discover different figures by joining a set of points. Designing a special relationship involves the learner searching between what appear to be separate phenomena. Through repeated practice and the success of solving increasingly complex tasks, the tool encourages the development of intrinsic motivation and activates a number of cognitive functions. The cognitive functions developed by applying this tool are: defining the problem, selecting the points that are relevant to the figure sought, planning the behavior, hypothetical thinking and the use of logical evidence, summative behavior.

Instructions - The Instructions tool focuses on encoding and decoding verbal and written information. The difficulty of the tasks is not given by the meaning of the words themselves, although sometimes students may encounter problems with unknown terms; the difficulty lies in understanding the meaning of the words and what they imply in the given context. By understanding the reasons that lead to the success or failure of their actions, students are transformed into information generators, able and willing to transmit complex instructions. The cognitive functions developed are: problem definition, comparison of drawings with verbal instructions, use of relevant aspects to clarify ambiguities, hypothetical thinking and use of logical evidence to support hypotheses.

Following the completion of the workshops, both the children in the control group and the children in the working group were tested with the following tests: Self-efficacy Scale and Locus of Control Scale, followed by a comparative analysis of the results obtained.

6. Statistical analysis of comparative results

The data from the study were centralized and statistically analyzed to verify the confirmation of working hypotheses. In the analysis of statistical data, the two working groups were numbered differently, respectively 1 - study group and 2 - control group. The next step involves verifying the confirmation of the initially established assumptions. For testing the first three

hypotheses we used the T-Test in SPSS, which represents any test of statistical hypothesis in which the test statistic follows a T distribution of Student under the null hypothesis. Given the need to compare the results of the two groups obtained, the chosen form was Independent samples T-Test. This form of the T-test allows the comparison of the average value obtained from two data sets, in order to verify the confirmation of some expected values.

Hypothesis 1 - The use of the Feuerstein Method improves the perception of self-efficacy

If we analyze first of all the individual results obtained by the children and the classification of these results in the three intervals described by Bandura, we notice the following:

- within the control group we notice that there was no change regarding the classification at different self-efficacy levels - Fig. 1 The change of the level of self-efficacy within the control group

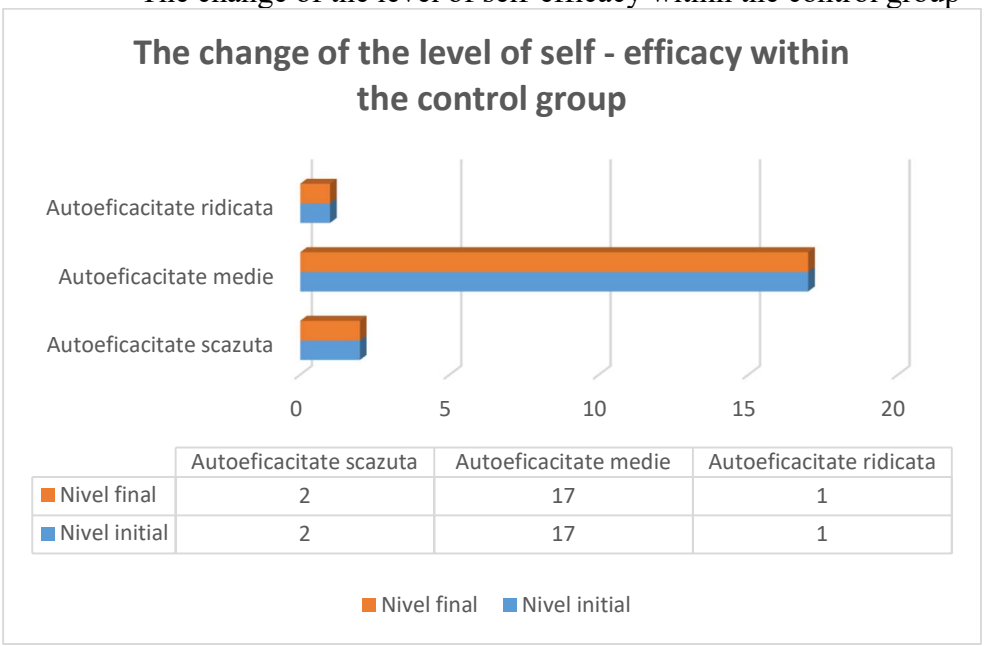


Figura 1 The change of the level of self-efficacy within the control group

- within the working group there is a significant change in the classification of children at the three levels of self-efficacy, so 1 child increases from low self-efficacy to medium self-efficacy, and 5 children increase from medium self-efficacy to high self-efficacy according to Figure 2 –The change of the level of self-efficacy within the working group

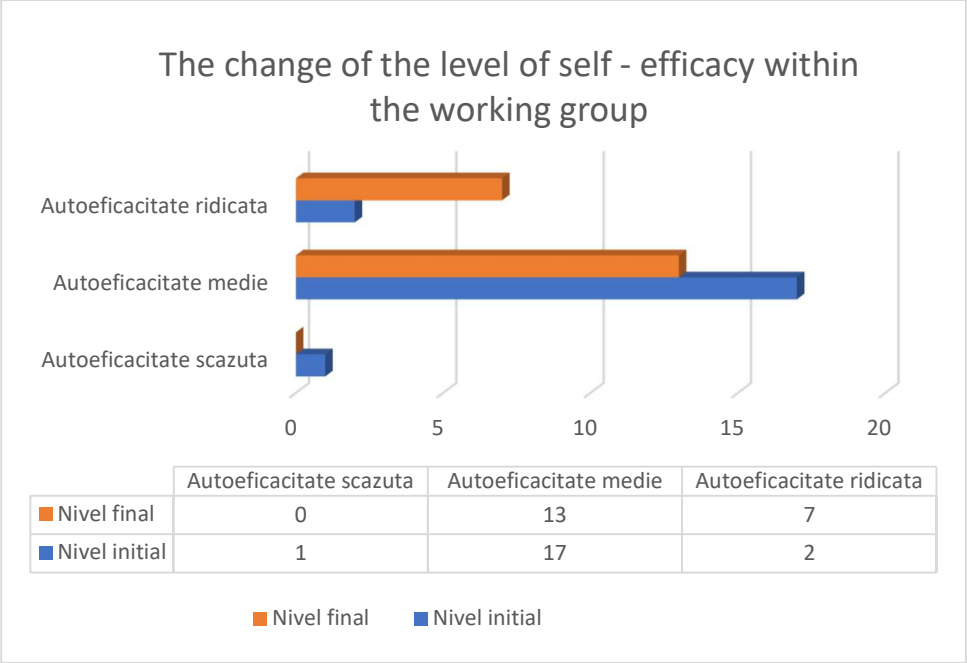


Figura 2 The change of the level of self-efficacy within the working group

In the application of the T-Test in SPSS, the independent variables are defined, respectively the two groups of copies and the dependent variables, respectively the values obtained following the application of the Personal Self-efficacy Scale. The results obtained are those highlighted in Table 1 - Average value in the analysis of self-efficacy:

Group Statistics

	Grup	N	Mean	Std. Deviation	Std. Error Mean
Initial Value Self-efficacy	1	20	25.90	3.837	.858
	2	20	24.60	4.122	.922
Subsequent ValueSelf-efficacy	1	20	28.45	3.980	.890
	2	20	24.75	3.985	.891

Table 1 - Average value in the analysis of self-efficacy

In this analysis it can be seen in the initial assessment the achieving of an average value of 25.90 in the case of the working group and an average of 24.60 in the case of the control group. The difference in the initial mean value between the two groups is 1.3. In the evaluation of the final scores obtained, it is observed the achieving ofan average value of 28.45 for the control group and an average value of 24.75 for the control group. The difference in the final mean value between the two groups is 3.7. This means a more pronounced

increase in the sense of self-efficacy in the working group than in the control group.

In the case of the group working with the instruments specific to the Feuerstein Method, the level of self-efficacy increased by 9.85% compared to the control group in which the level of self-efficacy increased in the same reference period by 0.61%. We also notice an increase in the case of the second group, most probably determined by various subjective factors that appeared during the reference period. Analyzing the individual values obtained, the largest increases in the level of self-efficacy were manifested in children aged 14 years, respectively 37% and 34%. Also, the highest increases in the level of self-efficacy were obtained in children who had initially recorded lower measured values.

In order to further analyze the validity of the result obtained, we consider the results obtained in Table 2.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Scor initial AE	Equal variances assumed	.348	.559	1.032	38	.308	1.300	1.259	-1.249	3.849
	Equal variances not assumed			1.032	37.807	.308	1.300	1.259	-1.250	3.850
Scor ulterior AE	Equal variances assumed	.140	.710	2.938	38	.004	3.700	1.259	1.151	6.249
	Equal variances not assumed			2.938	38.000	.004	3.700	1.259	1.151	6.249

Table 2 Statistical values - T Test Self-efficacy

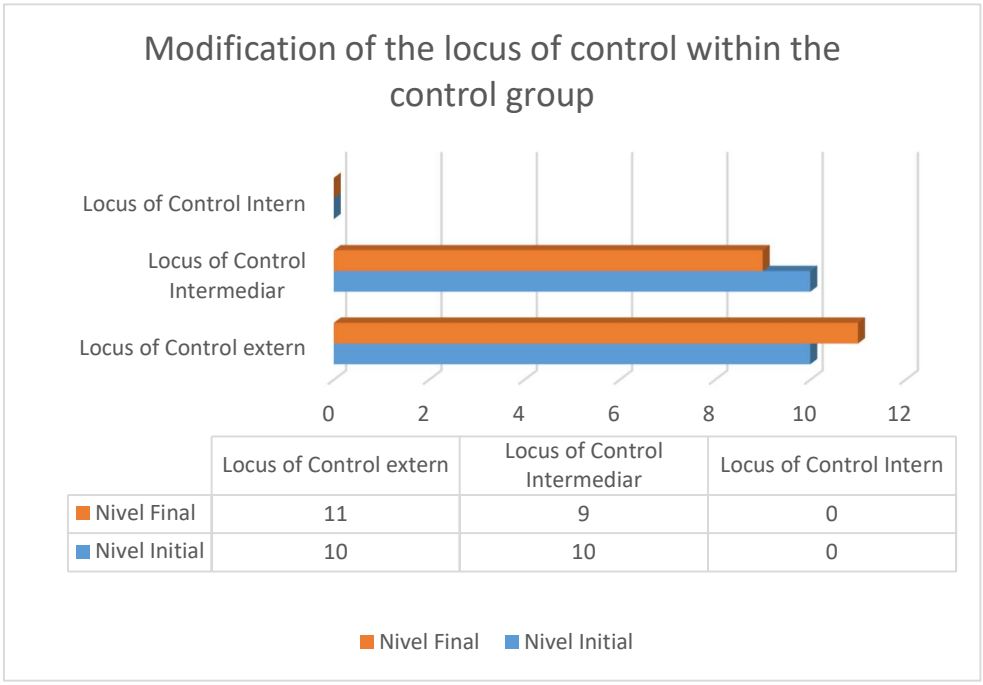
Analyzing the data obtained above we notice that in the initial situation, the difference between the two groups was not relevant obtaining Levene's Test for Equality of Variances = 0.348, F> 0.05 and Sig. (2 - tailed) = 0.308, p> 0.05, while in the case of the scores obtained after the experimental study, the results of the statistical analysis are Levene's Test for Equality of Variances = 0.140. F> 0.05 and Sig. (2 - tailed) = 0.004, p <0.05.

Following the statistical analysis above, it is observed that the first hypothesis of the study is confirmed, respectively after participating in the Feuerstein instrumental enrichment workshops, preadolescents show a significantly higher level of self-efficacy compared to children who were not included in this program.

Hypothesis 2 - Using the Feuerstein Method leads to increased confidence in one's ability to influence school performance

Analyzing the way in which the level of internalization of the control locus for the two groups of children changes during the reference time period, the following can be observed:

- Within the control group there is only one change in the level of the control locus, according to Rotter's scale, in the sense of its externalization and the transition from an Intermediate Locus of Control to an External Locus of Control as can be seen in figure below. It is also observed that no child manifests a locus of internal control.



	Locus of Control extern	Locus of Control Intermediar	Locus of Control Intern
Nivel Final	11	9	0
Nivel Initial	10	10	0

Figure 3. Modification of the locus of control within the control group

- Within the study group we can see several changes in the level of the locus of control, according to the Rotter scale, respectively 3 children show a transition from External Locus of Control to an Intermediate Locus of Control, and 2 other children show a transition from Intermediate Locus of Control to Internal Control Locus, provided that no child with Locus of Internal Control was initially identified in this category either. The data can be seen in Figure 4 - Modification of the locus of control within the working group.

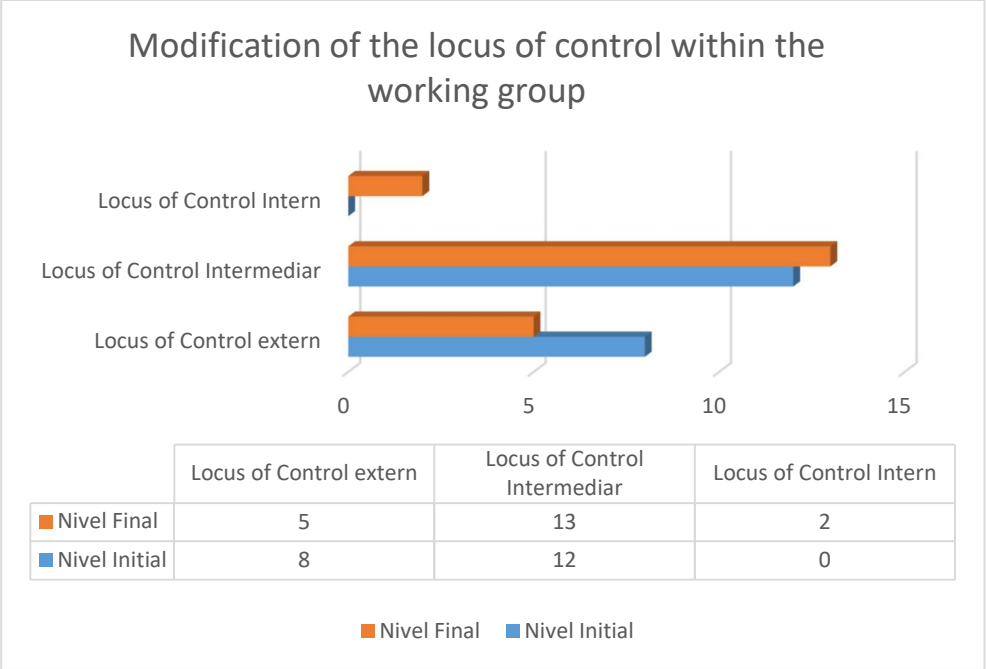


Figure 4 - Modification of the locus of control within the working group.

In order to verify this hypothesis, we applied the T test. In defining the variables, the two groups of children were considered independent variables, and the dependent variables were the results obtained after applying the Locus of Control Scale. The following results were obtained in the analysis of the average value, according to Table no.3:

Group Statistics

	Grup	N	Mean	Std. Deviation	Std. Error Mean
Scor initial Locus of Control	1	20	14.30	3.045	.681
	2	20	15.55	3.137	.701
Scor ulterior Locus of Control	1	20	12.70	3.757	.840
	2	20	15.65	2.961	.662

Table no.3 Average value in locus of control analysis

Analyzing the above data, it is observed in the initial evaluation it was obtained an average value of 14.30 in the case of the working group and an average value of 15.55 in the case of the control group. The difference between the two initial average values is 1.25, indicating a higher orientation towards

the external control locus in the case of the control group. In the analysis of the final scores obtained, the average value of 12.70 is observed for the study group, that is a decrease of the score obtained in the sense of internalizing the control locus by 11.19%, and in the case of the control group an average final value of 15.65 is observed, that is an increase of the score obtained in the sense of accentuating the exteriorization of the control locus by 0.65%. These results mean that in the absence of an approach to the principles of mediated learning, there is an increase in the values obtained, meaning a decrease in confidence in one's own ability to influence school performance in particular and life events in general. At the same time, in the case of children participating in mediated learning activities, there is a decrease in the scores obtained, respectively an increase in their own ability to influence their own destiny and school performance in particular.

In order to validate the obtained result, the statistical results obtained below and exemplified in Table no. 4 are analyzed.

Table no. 4 - Locus of Control statistical values

Analyzing further the statistical values we notice that initially, the difference between the two groups was not relevant, having the coefficient

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Scor initial LC	Equal variances assumed	.118	.734	-1.279	38	.209	-1.250	.978	-3.229	.729
	Equal variances not assumed			-1.279	37.967	.209	-1.250	.978	-3.229	.729
Scor ulterior LC	Equal variances assumed	1.714	.198	-2.758	38	.009	-2.950	1.070	-5.115	-.785
	Equal variances not assumed			-2.758	36.030	.009	-2.950	1.070	-5.119	-.781

Levene's Test for Equality of Variances = 0.118, F> 0.05 and Sig. (2 - tailed) = 0.209, p> 0.05, and in the case of the scores obtained after the study, the statistical values show a coefficient Levene's Test for Equality of Variances = 1.714, F> 0.05 and Sig. (2 - tailed) = 0.009, p <0.05, which determines the relevance of the comparison between the two groups.

Following the analysis of the above data, it can be concluded that the second hypothesis of the study is confirmed, respectively following the participation in instrumental enrichment workshops by the Feuerstein method, among preadolescents can be seen an improvement in faith in their own

abilities of influencing school performance, while in the case of preadolescents who were not included in the study, there is even a decrease in this belief in the same reference period.

Conclusions

We chose to conduct this study based on the desire to support pre-teens by developing skills designed to ease their daily challenges. Greater confidence in one's own abilities and abilities are scientifically proven to be essential in achieving educational goals and more. Also, the sustained belief in the ability to determine the results of actions is an important element in creating intrinsic motivation that will lead to success and academic success. In order to mediate the learning and experimentation of the instrumental enrichment program, we applied 2 of the 14 instruments of the program, characterized by the convergence of the objectives of their use with those of the present study. Thus, by conducting learning workshops mediated by the Feuerstein method and using the tools Organizing of Dots and Instructions we aimed in particular to develop the characteristics of intrinsic motivation for learning, encouraging independence and confidence in the results obtained through own effort, but also creating a framework for social interaction with children with similar ages and interests at a time when such school interaction was restricted.

It was found that by participating in the instrumental enrichment program increases the level of self-efficacy of students, respectively their confidence in their own ability to produce the desired level of performance both at school and beyond. At the same time, by regularly and consistently applying the principles of mediated learning in direct interaction with preadolescents, one can observe an influence of the location of the control locus and an increase in self-confidence that they can directly influence school performance.

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EFFECT OF COOPERATIVE LEARNING ON PRIMARY SCHOOL PUPILS' READING ACHIEVEMENT IN AWKA METROPOLIS

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Abstract: *This study investigated the effect of cooperative learning on reading achievement of primary school pupils in Awka Metropolis in Awka South Local Government Area. Two research questions and two null hypotheses guided the study. The study adopted a quasi-experimental design specifically the pre-test, post-test control group design. The population comprised of 3,419 primary five pupils in Awka metropolis and 65 pupils selected from schools that use Macmillan English who participated in the study formed the sample for the study. Reading Achievement Test (RAT) with a reliability coefficient of 0.89 determined using Kuder-Richardson Formula 20 was used to collect data for the study. Pupils in the experimental group were taught reading using reciprocal peer tutoring, a type of cooperative learning considered in the study while those in the control group were taught reading using conventional method. Data collected were analyzed using mean scores for research questions and Analysis of Covariance (ANCOVA) for testing the hypotheses at 0.05 level of significance. Major findings revealed that pupils taught reading with Reciprocal Peer Tutoring (RPT) performed significantly better than those taught with conventional method*

did. There was no significant difference in the performance of male and female pupils taught reading with RPT. Based on the findings, it was recommended that teachers training colleges and universities should incorporate reciprocal peer tutoring in their curriculum so that prospective teachers will be acquainted with the basic skills for designing RPT instructional materials for use in their respective classrooms. Teachers should be well equipped and integrated with RPT for an effective teaching, mastery and its application in the teaching and learning processes.

Keywords: *Reading; Peer tutoring; Primary school; Pupils; Achievement.*

Introduction

An interesting spectrum of human personalities abounds in any primary school classroom. Each individual has his or her unique and innate academic needs. Nwosu (2012) noted that in schools, individuals with diverse capabilities come to learn and to grow and while some learn how to read with ease, others learn with certain difficulties. Some achieve highly and some poorly even below what is expected of them and quite interestingly however, the Federal Government of Nigeria in her National Policy on Education emphasized that primary education should aim at inculcating permanent literacy, numeracy, and the ability to communicate effectively in the recipients (FRN, 2013). Aggarwal as cited by Nwosu sees education as a process that draws out the best in the child with the aim of producing well-balanced personalities that are culturally refined, emotionally stable, ethically sound, mentally alert, morally upright, physically strong, socially efficient, spiritually upright, vocationally self-sufficient and academically balanced. The school serves as one of the agents for achieving this worthwhile aim.

To achieve this aim and be successful in this 21st century, an individual requires the ability not just to read and write but also the possession of strategies that enables one to read critically so as to solve the ever complex and challenging problems confronting the society. The achievement of the basics in literacy is indispensable for any academic success in formal education as they create basis for further learning. A child who acquires the ability to read at an early stage is bound to improve on other cognitive demands because it is the key to educational achievement. Therefore, a child's success in school and throughout life depends, to a high extent, on the ability

to read. Reading is important as it aids in the cognitive demands of learners. Nwosu (2012) sees reading as a skill that aims at facilitating the acquisition and development of relevant literacy skills for effective communication in different contents. According to the researcher, becoming a reader is a continuous process that begins with development of oral language skills and leads to independent reading over time. Oral language is the ability to speak and listen; it is a vital foundation for reading success. Nwosu also stressed that children learn the language of their environment as they observe, listen, speak and interact with adults and other children in their environment.

Reading for comprehension helps children to construct meaning from texts as well as to examine and extend the meaning of the text to previous reading. However, Loan (2012) opined that reading is a much more complex process involving the understanding of a whole text composed of written signs and not just mere extraction of visual information from a given code. In addition, reading is fundamental to progress and success in all school subjects. The development of reading skills involves the participation of children, parents, educators and community as a whole, since it is process-oriented and involves socio-cultural dynamics. Hecht and Greenfields (2001) emphasize the importance of reading intervention in the early years of formal education. They noted that few changes in individual reading skills occur after primary three. Additionally, poor academic outcomes, increased behavioural problems, higher probability of dropping out of school are all more likely to result following failure to acquire literacy skills at the primary school level.

Most pupils' reading abilities as observed by Aina, Ogundele and Olanipekun (2013), are very poor and have led to low performances in reading comprehension. The researchers reported that over the years, reading achievement of pupils at the primary school has been below eighty percent and this has led to a great deterioration in their external examinations. There is a great need therefore, to introduce and implement innovative teaching methods for teaching reading in primary schools in Nigeria to remedy the situation at hand. Literature has blamed the lack of basic skills in reading and writing on the type of teaching method used to teach reading by the teachers. For example, Oviawe (2010) pointed out that the conventional method of instruction is the one commonly used for teaching reading at all levels in Nigerian schools. The researcher further noted that in this method, the teacher assumes the more active role in the lesson, as he exposes the learners/pupils to new ideas, more like a harbinger of information. In addition, Amekodo (2012) and Okwuduba et al. (2018) stated that conventional method is widely practised in teaching reading although it does not provided much needed impart because a teacher can reach a larger number of pupils at the same time and large amount of materials can be covered within a short period. Not that conventional method is completely bad, but its flaws remain obvious as

pointed out by literature. For example, Lawal as cited in Ofodu (2009) stressed that through observation and personal experience, teachers often test pupils reading achievement instead of teaching them how to read and comprehend. The researcher also posited that teachers equally employ the conventional method of teaching where reading is seen as a solo affair in which the learner is hooked to a text and is not encouraged to read and dialogue with peers or in groups. According to Abbas & Jafar (2012), the consequence of using conventional method in teaching English language is that pupils are unable to retain their learning and apply it to a new situation. The researchers further asserted that in alternative, cooperative learning could be used to help pupils become active learners in the classroom, thus improving their achievement.

Akinbobola (2009) defined cooperative learning as a way of learning in which students of different ability levels work together in small groups using a variety of literature to achieve a goal and in this case, it is to improve learning. Cooperative learning according to Şimek, Byilar and Kucuk (2013), is a process aimed at facilitating the achievement of a specific objective through people working together in groups. Naseem and Bano (2013) believe that when students of different cognitive, intellectual and physical levels are exposed to solving a given task, they have the opportunity to interact and work as a team. They opined that it improves learning attitudes, interpersonal skills and self-concept and teacher dependency decreases. Therefore, the teacher's role changes from providing information to facilitating student learning. The tasks of cooperative learning are usually intellectually demanding, creative, open and involve higher-order thinking tasks. Ajaja (2018) opined that cooperative learning can give weak students the opportunity to learn and achieve the maximum. He further highlighted the four basic elements that underpin cooperative learning: (1) small groups must be structured for positive interdependence; (2) there must be face-to-face interactions, (3) individual responsibility and (4) use of interpersonal skills and small groups. Reiness as cited in Oviawe (2010) opined that cooperative learning among peers promotes learning outcomes, higher thinking skills, social interaction, experiences and context that make pupils willing and able to learn. Reiness further identified three distinct areas of cooperative learning among peers namely: Cross-Age Tutoring (CAT), Peer Tutoring (TP), and Reciprocal Peer Tutoring (RPT). For this study, the Reciprocal Peer Tutoring (RPT) will be considered.

The Reciprocal Peer Tutoring (RPT) as explained by Gazula, McKenna, Cooper and Paliadelis (2017) involves a situation whereby the learners reverse the roles of tutor and tutee in a reciprocal manner. It allows each child to reap the benefit derived from preparing to teach another child. Children provide instruction, evaluation and reinforcement to one another, thereby creating mutual assistance and social support among themselves. RPT also has the

tendency to build self-efficacy in a pupil who acts as a tutor and source of knowledge. The goal of RPT according to Nwosu (2012) is to use discussion to enhance learners' reading comprehension, develop self-regulatory and monitoring skills and achieve overall improvement in motivation. Another goal of RPT according to Egbochuku and Obiunu (2006) is that it provides a non-judgemental acceptance, care, support, and it provides opportunities to give and receive from others, and it creates a non-competitive empowering environment. The reciprocal peer tutoring can also help pupils to meet one of the objectives of primary education in Nigeria, which is the development of literacy and numeracy skills. Considering the importance of the RPT as highlighted by literature, it becomes necessary to examine the effect of this mode of instruction on the reading achievement of pupils in Awka Metropolis using comprehension passages in English Language, thus, the need for this study. However, it has been reported in research that reading skills acquisition can be influenced by certain factors, among which is gender.

Gender stresses the roles and responsibilities of males and females. According to Ezeh (2013), gender can be referred to as one's subjective feelings of maleness or femaleness irrespective of one's sex. Ezeh further stated that gender is classified into masculine or feminine and is concerned with the attitudes that describe males and females in the socio-cultural context. The issue of gender on reading achievement of pupils have become an area of interest to researchers. Researches have shown a disparity in the reading achievement of male and female pupils' taught using the RPT (Onuigbo, 2008; Uroko, 2010). Some studies however, reported no disparity (Agiande, 2006; Igbo, 2004). Following these argument, this study is an attempt to resolve the discrepancies in the findings of the research on the influence of gender as it relates to learners' reading comprehension achievement.

Purpose of the Study

The purpose of this study is to determine the effect of reciprocal peer tutoring on the reading achievement of primary school pupils in English language in Awka Metropolis. The study specifically sought to determine;

1. the effect of reciprocal peer tutoring (RPT) on the reading achievement of male and female primary school pupils in English language
2. whether any significant difference exist between the mean achievement scores of male and female pupils taught reading using reciprocal peer tutoring (RPT)

Research Questions

The following research questions guided the study:

1. What is the effect of reciprocal peer tutoring (RPT) on the reading achievement pre-test and post-test scores of pupils in English language?

2. What is the effect of reciprocal peer tutoring (RPT) on the reading achievement pre-test and post-test scores of male and female pupils in English language?

Hypotheses

The following null hypotheses were tested at 0.05 level of significance.

1. There is no significant difference between the mean achievement pre-test and post-test scores of pupils taught reading using the reciprocal peer tutoring (RPT), and those taught with conventional method.
2. There is no significant difference between the mean achievement pre-test and post-test scores of male and female pupils taught reading using reciprocal peer tutoring (RPT).

Method

The study was conducted to determine the effect of RPT method on the reading achievement of primary school pupils in Awka Metropolis. Two research questions and two null hypotheses guided the study. A quasi – experimental design was used for the study. The population of the study comprised of 3,419 primary schools pupils in Awka metropolis. A sample size of 65 primary five pupils from two schools selected randomly was used. The instrument for data collection in this study was Reading Achievement Test (RAT). The lesson plan that covered every unit in the RAT was used as an instructional tool. The reading achievement test was based on six weeks lesson plan. The RAT is a 30 items, four options multiple-choice test compiled from six-comprehension passage from Macmillan English Textbook for primary five. Primary five was used for the study because it is the onset for preparing pupils for external examinations and it is assumed that the pupils in this class must have been fluent in reading comprehension. The RAT and the lesson plan were subjected to both face and content validation by two experts in the Department of Early childhood and Primary Education and one expert in the Department of Educational Foundations (Measurement and Evaluation unit) all from Nnamdi Azikiwe Univerity, Awka.

To determine the reliability of the instrument RAT, the internal consistency of RAT was determined using the Kuder – Richardson formula 20 (K–20). The coefficient of internal consistency was found to be 0.89. It was administered to the pupils (control and experimental group) as pre-test before they were taught for six weeks using validated lesson plans for RPT techniques and conventional method. At the end of the treatment, the items were reshuffled and administered to the subjects as post-test. The research questions were answered using statistical mean, while the null hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance. In this case, the pre test scores were used as covariant measures on the post-test scores.

RESULT AND DISCUSSION

Research Question 1: What is the effect of reciprocal peer tutoring (RPT) method on the reading achievement pre-test and post-test scores of pupils in English language?

Table 1: Mean and standard deviation for pre-test and Post-test Reading Achievement score of pupils taught with RPT and Conventional.

Groups	No	Pre-test Mean	SD	Post-test Mean	SD	Gained Mean	Decision
RPT	53	38.86	5.806	47.83	4.762	8.97	More effective
LM	50	34.07	8.733	35.40	11.069	1.33	

**RPT=reciprocal peer tutoring*

LM = Lecture method

Table 1 showed the pre-test mean and post-test scores of the pupils on reading achievement in the RPT and control groups. The pre-test mean scores of the RPT was higher than that of the control group. Also, the post-test means scores treatment group was significantly higher with mean gain of 8.97 than that of the control group with mean gain of 1.33. This shows that RPT enhanced reading achievement in English language.

Research Question 2: What is the effect of RPT on reading achievement pre-test and post-test scores of male and female pupils in English language?

Table 2: Mean and standard deviation for Pre-test and Post-test Reading Achievement Scores of Male and Female Pupils Taught with RPT

Groups	No	Pre-test Mean	SD	Post-test Mean	SD	Gained Mean	Decision
Male	28	39.11	5.411	46.67	5.17	7.56	
Female	27	38.59	6.35	49.06	4.07	10.47	More effective

Table 2 shows the pre-test and post-test score mean and standard deviation of reading achievement scores of male and female pupils in the RPT. The pre-test mean score of male pupils is 39.11 while their post-test mean score is 46.67. Their mean gain is 7.56. The pre-test mean score of female pupils is 38.59 while their post-test mean score is 49.06. Their mean gain score is 10.47. This indicated that female pupils gained more in RPT than male pupils.

Hypothesis 1: There is no significant difference between the mean achievement pre-test and post-test scores of pupils taught reading using RPT and those taught with conventional method.

Table 4: *ANCOVA* for Differences in Reading Achievement of Pupils taught Reading with RPT and those taught using the conventional method

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	3816.442[a]	2	1908.221	39.397	.000	.560	
Intercept	854.085	1	854.085	17.633	.000	.221	
Pretest	1321.167	1	1321.167	27.277	.000	.306	
Group	1291.977	1	1291.977	26.674	.000	.301	Significant
Error	3003.004	62	48.436				
Total	121984.000	65					
Corrected Total	6819.446	64					

a. R Squared = .560 (Adjusted R Squared = .545)

Table 4 shows that there is a statistically significant difference between the mean achievement scores of pupil taught reading using RPT and those taught with expository method. This is because the p-value (.000) is less than the level of significant (0.05). Based on the above, the null hypothesis is rejected, implying that there is a statistically significant difference between the mean achievement scores of pupils taught reading using RPT and those taught with expository method.

Hypothesis 2: There is no significant difference between the mean achievement pre-test and post-test scores of male and female pupils taught reading using RPT

Table 5: ANCOVA for Differences in Reading Achievement of Male and Female Pupils Taught Reading with RPT.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	139.593[a]	2	69.796	.537	.041	.181	
Pretest experimental	89.563	1	89.563	.539	.041	.124	

Gender experimental	56.220	1	56.220	2.849	.101	.082	
Error	631.379	32	19.731				
Total	80836.000	35					Not significant
Corrected Total	770.971	34					
Intercept	1015.119	1	1015.119	10.449	.005	.617	

a. R Squared = .181 (Adjusted R Squared = .130)

Table 5 shows that there is no significant effect of treatment in the post-test reading achievement of male and female pupils $F(1, 34) = 2.849$, $p > 0.05$. This means that there was no significant difference in the mean achievement scores of male and female pupils in the reading achievement taught with RPT. Therefore, the hypothesis that there is no significant mean difference in the reading achievement of male and female pupils taught with RPT is not rejected.

Discussion

The effectiveness of reciprocal peer tutoring was demonstrated through significant improvement in the reading achievement of pupils taught with it. The result of the data clearly shows that the experimental group who were taught with RPT achieved better than the control group who were taught with the conventional method. The analysis of hypothesis 1 using ANCOVA also shows a better reading achievement by the experiment group. This means that reciprocal peer tutoring seems to have contributed immensely to the improvement of pupils reading achievement. The result of the findings is in agreement with previous research findings of Uroko (2010), who state that that reciprocal peer tutoring are beneficial to students, because they encourage students to read more, think deeply about books, listen carefully to classmates, share their responses and interpretations of texts, and often become lifelong readers. Also in line with the study, Ofodu (2009) examined the effect of RPT on students' reading performance as well as students' levels of comprehension and performance levels. The author's report proved that RPT was more effective in teaching reading.

There was no significant difference between the reading achievement of male and female pupils taught reading with reciprocal peer tutoring. This was shown from the result of the data that male and female pupils taught with RPT performed equally. The analysis of hypothesis 2 using ANCOVA as shown in table 2 shows equal performance in the reading achievement of male and female pupils taught with RPT. This is in line with the study of Igbo (2004) who maintain that instructional approaches neither favor nor disfavor a particular sex in achievement. The findings of this study also agreed with Agiande (2006) that gender is not a significant factor in pupils' achievement.

A well-applied teaching strategy would produce the same effect on the pupils' achievement in reading English irrespective of gender.

Conclusion

The findings from the study revealed that reciprocal peer tutoring, a type of cooperative learning is effective in improving pupils reading achievement in English language. In this regard, there was an observed significant difference in the mean achievement scores of pupils taught with RPT and those taught with conventional method. It was thus concluded that pupils taught with RPT achieved better than those taught with the conventional method.

Recommendations

Based on the findings of this study and taking into cognizance its educational implications, the following recommendations were made:

1. To enhance pupils reading achievement, new innovative instructional strategies such as RPT should be adopted in the primary schools, especially in teaching English language. Also, school authorities and educational administrators should ensure that RPT is integrated in our schools since it will help pupils in becoming cooperative learners and problem solvers.
2. Teachers training colleges and universities should incorporate reciprocal peer tutoring in their curriculum so that prospective teachers will be acquainted with the basic skills of designing instructional materials for use and implementation of RPT in their respective classrooms. Teachers should be well equipped and integrated with RPT for an effective teaching, mastery and its application in the teaching and learning processes.
3. School authorities and educational administrators should organize seminars, conferences and workshops for teachers to acquire skills for effective use of reciprocal peer tutoring in schools since it improves reading achievement.
4. Government should finance the use of RPT by sponsoring conferences and workshops for teachers and curriculum planners, so that curriculum planners can develop improved instructional materials that would meet up to the needs of the global society and encourage teachers to use them in their instructional activities.

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THEORIZING AN INTEGRATIVE-QUALITATIVE INTENTIONAL BEHAVIOR MODEL IN ROMANIAN PRESCHOOL TEACHERS FOR SDG4 (*EQUAL ACCESS TO QUALITY PRE-PRIMARY EDUCATION*)

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Abstract: *Quality education is one of the 17 Sustainable Development Goals (SDGs) set by the United Nations in 2015. SDG 4 refers to guaranteeing inclusive and equitable quality education for all, as well as fostering opportunities for lifelong learning for everyone. Equal access to high-quality pre-primary education is one of DSG4's 11 indicators, and it will be discussed further in this study. The goal of this study is to lay a theoretical foundation for the development and validation of an integrative-qualitative intentional behavior scale in Romanian early childhood education and care system. Our theoretical research will also be used to develop an integrative-qualitative intentional behavior prediction methodology that can be used to predict preschool teachers' integrative-qualitative intentional behavior in ECEC teachers and aid educational decision-makers in developing timely interventions that increase the likelihood of success. The study's major findings point to important components that might help Romanian educational decision-makers improve SDG4 outcomes.*

Keywords: *SDG4; Early Childhood Education and Care; theory of planned behavior; integrative-qualitative; intentional behavior.*

1. Sustainable Development Goal 4

Sustainable Development Goal 4 (SDG 4 or Global Goal 4) focuses on high-quality education. It is one of the 17 Sustainable Development Goals established by the United Nations in September 2015. SDG 4's original title was providing inclusive and equitable quality education for all and promoting lifelong learning opportunities for all.

SDG 4 is made up of ten goals that are tracked by 11 indicators. Free primary and secondary education; equal access to high-quality pre-primary education; affordable technical, vocational, and higher education; an increase in the number of people with relevant financial skills; the elimination of all forms of discrimination in education; universal literacy and numeracy; and education for sustainable development and global citizenship are the seven outcome-oriented targets. Building and improving inclusive and safe schools, increasing the supply of qualified teachers in developing countries, and expanding higher education scholarships for developing countries are the three strategies to achieve the goals (Lupascu, et. al., 2014; Maier, 2019; Maier, et al., 2019; Panisoara, et al., 2014; Panisoara et. al., 2020).

SDG 4 aims to offer high-quality, easily accessible education as well as extra learning opportunities for children and young people. The achievement of universal literacy and numeracy is one of its goals. In the learning environment, this is a critical component in acquiring information and important skills (Roman, & Dughi, 2007; Roman, & Redeș, 2019; Roman, & Redeș, 2019; Castanheira, et. al., 2018; Clipa, & Greciuc, 2018; Roman, & Balas, 2015; Roman, & Bran, 2015). As a result, there is an urgent need to create new educational facilities as well as update existing ones in order to offer secure, inclusive, and effective learning environments for all.

The prevalence of extreme poverty, insurgency, community disputes, and other issues has slowed development in many nations. Children from low-income families are more likely than their wealthy peers to drop out of school. Disparities between rural and urban communities remain significant.

Education for All has been a well-known term since 1990, and it has gotten a lot of attention from numerous development courses throughout the world. It was selected as SDG 4 because it was deemed critical from the start of the Sustainable Development Goals (SDGs). Education is seen as a key component of long-term progress, nation-building, and peace. Children and teenagers who learn certain skills such as reading, writing, and counting have a brighter future than those who do not. Globalization demands fast adaptation and learning to deal with new technologies as the globe evolves.

The importance of education in ensuring long-term development applies not only to developing countries, but to the entire world. The major purpose of Sustainable Development Goal 4 (SDG 4) is to provide an inclusive

and high-quality education that improves both the learner's standard of living and the community's future. Remarkable progress has been made in enhancing both boys and girls' access to education, particularly at the primary school level. Increased access, on the other hand, does not always imply greater educational quality or primary school completion. Increased school enrollment did not translate into improved educational performance, as one out of every four nations failed to reach the minimal math competency criteria. Millions of youngsters were still absent from school by the end of 2019. The closing of schools in 2020 as part of the COVID-19 control measures is having a negative influence on learning outcomes. It has influenced more than 90% of the world's student population, influencing the education of an estimated 1.5 billion children and young adults. Students' ability to participate in learning opportunities throughout the world has also been hampered by a lack of internet access. At least one-third of the world's youngsters lacked the technology essential to participate in remote learning during the COVID-19 outbreak and the resulting widespread school cancellations. Inequality in schooling has also risen as a result of the epidemic.

The overall purpose of the indicator target is to ensure that by 2030, all girls and boys have access to high-quality early childhood development, care, and pre-primary education, preparing them for primary school. Two metrics support this goal: the proportion of children under the age of five who are on track in terms of health, learning, and psychological well-being, and the rate of organized learning engagement (one year before the official primary school enrollment age), by gender.

2. Theory and planned behavior and integrative-qualitative intentional behavior

The essential part of this idea, according to experts, is people' purpose to exhibit a specific behavior that is evident to those around them. The planned behavior is unique to each individual, taking into consideration the variables that underpin each individual's motivation as well as the work he is prepared to expend to reach the objective (Ajzen, 1991).

TPB is an extension of rational action theory (TRA), which was established by Ajzen and Fishbein in 1975 and refined in 1980. (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980). TRA incorporates cognitive, emotional, and conative components, similar to the three-component model of attitudes (Schiffman and Wisenblit, 2015), implying that attitudes explain people' behaviors as an indication of their behavior (Balog and Cristescu, 2009). The hypothesis is predicated on the assumption that researchers must quantify the subjective standards that impact a person's intentions to engage in a particular action (Schiffman and Wisenblit, 2015).

TPB is a theoretical foundation that aids in the comprehension of the decision-making process used by preschool instructors (Rad, et. al., 2022; Rad, et. al., 2022).

Beginning with the theory of rational action, TPB is regarded by scholars as a behavioral theory that explains individual behavior based on attitudes, serving as a reference point in the study of individual actions (Ajzen, 1991; Ajzen, 2005; Buaphiban and Truong, 2017). The premise underpinning this notion is that preschool teachers generally exhibit high levels of sensitivity. The understanding of the decision-making process requires knowledge of the stages involved as well as the consequences they have on integrative-qualitative intentional behavior. Every day, people are confronted with a great number of decisions that must be taken, each with a varying level of importance and influence. It occurs on a continuous basis in an individual's life, progressing from basic decisions to complicated ones. Exposure to environmental information, as well as the day-to-day problems of a person's existence, cause them to prioritize decisions.

3. Theoretic model of integrative-qualitative intentional behavior in ECEC

The Theory of Planned Behavior (TPB) was developed to forecast a person's intention to participate in a given behavior at a specific time and location. The hypothesis was designed to describe all actions over which humans may exercise self-control. Behavioral intent is a fundamental component of this paradigm; behavioral intents are impacted by one's attitude about the likelihood that the conduct will produce the expected result, as well as one's subjective assessment of the risks and advantages of that outcome.

Behavioral accomplishment is based on both motivation (intention) and ability, according to the TPB (behavioral control). It distinguishes between three types of beliefs: behavioral, normative, and control beliefs. The TPB is made up of six constructions that show how much control a person has over their actions.

1. Attitudes - This refers to the degree to which a person evaluates the conduct of interest favorably or unfavorably. It requires taking into account the consequences of carrying out the conduct.
2. Behavioral intention - This refers to the motivating variables that drive a certain conduct; the greater the intention to execute the activity, the more likely the behavior will be completed.
3. Subjective norms - This is the notion that the majority of people accept or disapprove of the action. It refers to a person's opinions about whether peers and important individuals in his or her life believe he or she should engage in the conduct.

4. Social norms - These are the conventional regulations of behavior among a group or individuals, as well as in a broader cultural context. In a group of individuals, social standards are regarded normative, or standard.
5. Perceived power - This refers to the perception of the presence of elements that might help or hinder the performance of an activity. Perceived power influences a person's perception of behavioral control over each of these aspects.
6. Perceived behavioral control - This relates to a person's view of how easy or difficult it is to do the desired activity. Perceived behavioral control fluctuates between contexts and behaviors, resulting in a person's sense of behavioral control changing depending on the scenario. This theoretical component was introduced later, resulting in a move from the Theory of Reasoned Action to the Theory of Planned Behavior.

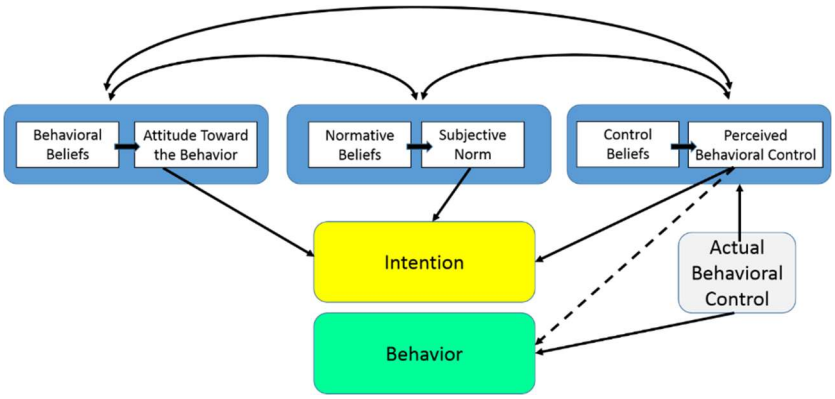

Figure 1 – Main components of TPB (*apud Ajzen, 1991*)

The theory of planned behavior (TPB) is a collection of essential individual beliefs (attitudes, subjective norms, and perceived behavior control) that influence people's intentions to engage in specific behaviors. Due to its successful application to a range of human activities, TPB has been used as a framework in a number of research examining teachers' intentions toward implementing inclusive education. However, there has been minimal effort to synthesize these researches.

Opoku et al., 2021, for example, looked at published articles on inclusive education from 2007 to 2019 that used the TPB as a framework to analyze reporting trends and identify research needs. Five keywords were used

to search nine databases for research, giving 604 results, 22 of which fulfilled the pre-determined inclusion and quality evaluation requirements. Although the results of certain studies show that TPB can predict teachers' intentions, the link between the predictors and actual conduct is yet unknown. Furthermore, the conclusions of the qualitative and quantitative research differed.

The theory of planned behavior (TPB) asserts that behavioral intention and perceived behavioral control can predict behavior, with behavioral intention being a function of attitude toward the behavior, subjective norm, and perceived behavioral control.

Teachers' attitudes toward inclusive education, their perceptions of social pressure from influential individuals to implement inclusive education, and their trust in professional training for engaged personnel have all been shown to have a significant impact on their intention to implement inclusive education (Yan & Sin, 2014). This goal, together with their confidence in professional training for participants, foreshadows their true inclusive practice. The impact of teachers' views of public pressure and the appropriateness of professional training on their intention and action toward inclusive education is substantial. TPB appears to provide a robust theoretical framework for understanding inclusive behaviors among instructors (Yan & Sin, 2014).

Inclusive Education (IE) is defined as providing students with the opportunity to learn alongside their peers in their appropriate school community while also being treated as a contributing member (Ward, 2018). In Saskatchewan, the objective is to integrate all children into the regular school system. Teachers are under more pressure than ever before to support inclusive policies in educational institutions. Educators' worries about IE are frequently the consequence of the severity of the condition and practical concerns about application in the classroom (Avramidis & Norwich, 2002; Burke & Sutherland, 2004). Understanding student teachers' views regarding IE allows them to have their concerns addressed early on, and suitable information for implementation may be supplied.

4. Conclusions

Students are labeled and denied equal access to social and curricular opportunities when they are separated into "special needs" and "mainstream" schools. As a result, the legislation has supported the inclusion of children with disabilities and special educational needs in conventional schools for more than 20 years. However, because of inconsistent findings and a scarcity

of well-designed research in this field, it's unclear if inclusive education is advantageous in terms of achieving positive educational and social outcomes (Lindsay, 2007; Korinek, et al., 1999).

Attitudes among mainstream teachers may be a barrier to successful inclusive initiatives (Avramidis, Bayliss & Burden, 2000; Bender, Vail, & Scott, 1995; de Boer, Pijl, & Minnaert, 2010). Teachers are largely supportive of the concept of inclusion, but many believe that putting it into practice is difficult (Avramadis & Norwich, 2002). However, it has been shown that teachers' attitudes toward inclusion are more apathetic, if not hostile (de Boer et al, 2010).

Access to and participation in quality education is required for a sustainable society to function properly. Education is more than just a preparation for entering the work market. Education must be viewed as a lifelong process that prepares future generations for challenges by promoting creativity, meritocracy, constructive critical thinking, curiosity, conduct, and freedom.

The OECD also emphasizes "student well-being" as an essential aspect in the educational process. In addition to the instructional process, the school provides pupils with their first engagement with society, which has a significant impact on their attitude and conduct. Students learn to be resilient, socialize, and to be ambitious in their life goals. The PISA III study emphasizes the link between school anxiety, bullying in schools, and low academic achievement. Furthermore, the student-teacher interaction has a significant influence on student growth, with a sense of belonging to the community being a vital variable in academic development.

In conclusion, the standard study findings highlight the relevance of primary school teachers' attitudes toward inclusive education, their perceived collective self-efficacy beliefs, and their views of their school management's expectations for their inclusive education goals. Using Hellmich's work, the authors were able to test Ajzen's 'Theory of Planned Behavior' (1991) to some extent (Hellmich et al., 2019). The findings of the study show how primary school teachers' attitudes toward inclusion and aims for inclusive teaching are reflected in their self-reported daily activities in heterogeneous classes. Our research, on the other hand, was unable to show that primary school teachers' collective self-efficacy attitudes on inclusive education have an impact on their practices in diverse classrooms.

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AN ASSESSMENT OF STUDENTS' PERCEPTION ON SCHOOL SERVICES IN NIGERIAN PRIVATE UNIVERSITIES: EVIDENCE FROM AL-HIKMAH UNIVERSITY

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Abstract: *As contained in the National Policy on Education, adequate provision of school services in the university system is meant to enhance the level of students' academic career, retention, academic progress and counselling towards attainment of educational goals. This study was conducted to evaluate students' perception on school services in Al-Hikmah University, Ilorin, Kwara State, Nigeria. The study adopted descriptive survey. Three hundred and eighty-one respondents were used for the study from seven faculties in Al-Hikmah University. Students' Perception on School Services Questionnaire (SPSSQ) was used for data collection. Two research questions were raised and answered to guide the conduct of the study. Descriptive statistics of frequency counts, percentages, mean and standard deviation was used to analyze the demographic information of the respondents and to answer the research questions raised. Findings showed that the level of students' perception on academic services, guidance and counselling services, admission services, health services, power supply services and library services in Al-Hikmah University, Ilorin was high and that of extra-curricular services and internet services was low. Based on the findings, it was recommended among others that the management of Al-Hikmah University should improve on the school services for students in the areas of extra-curricular services and internet*

services so that effective teaching and learning could be improved on students' academic achievement.

Keywords: *Perception; School Services; Private University; Descriptive.*

INTRODUCTION

Education in Nigeria is described an instrument per excellence for effecting national development so that the beneficiaries of the educational system could fit into the socio-economic, political and technological needs of the twenty first century (Bisi-Onyemaechi et al., 2021; Suleiman, 2021). In order to meet these expectations, Nigeria must consolidate her educational system and ensure productive, effective, socially and economically rewarding returns for beneficiaries of all the education systems. This could be the reasons why the Federal Government of Nigeria set the following aims of giving any secondary school student a very sound and qualitative education to be able to further his/her education and to function effectively in any environment in which he/she may find him/herself (Olasunkanmi & Mabel, 2012). School services provide eligible students with the additional support needed to complete tertiary institution of educational programmes. School services for students are more likely to be retained in school in order to facilitate effective teaching and learning process. The school services provided for students often result in improved student grades, greater numbers of credit hours earned, and greater students' retention in college (Abay, Amare, Tiberti & Andam, 2021).

School services are designed to provide academic, career, and personal counseling based on what the individual student lacks. These counselling services are important to student retention and success, specifically during the freshman year (Ibenne & Durodolu, 2021). Therefore, there is the need for necessary school services to be provided in the tertiary institutions such services as identified by Yusuf (2016) are students' welfare services, library services, accommodation services, counselling services, recreational services, and health services. However, the problems that are present in the educational system therefore called for the necessary school services so as to encourage joint responsibility of all and sundry in the society for education development. The need for school services in tertiary institutions is to reduce high rate of failure, truancy, improving lecturers' job performance and an aid to community services. It is therefore, imperative to note that effective provision and utilization of academic support services in order to improve students'

performance. Ogundele and Moronfoye (2017) highlighted the objectives of school services as to: Provide students with environment that is physically, intellectually and morally conducive to total development. Assist each student develops full potentials through the effective and efficient use of available resources. Enable student affairs officers motivate and stimulate students towards effective use of school facilities.

School services for students has gained significant influence as additional funds that have been provided by the federal government to expand the number of programmes operating in Nigerian tertiary institutions. However, a question remains as to whether the school services are effective at accomplishing its goal (Raji, 2016). Many challenges have been facing the school services such as lack of guidance and counselling services, poor admission services, lack of health services, interruption of power supply services, poor internet services among others (Suleiman, Hanafi & Thanslikan, 2019). To ensure continued student success while enrolled in tertiary education programs, school services of some schools ne to need to ide students with school services needed to complete a tertiary education. Since the school services use a substantial amount of funds at a time when school accountability and performance are being closely examined by both local and federal officials. It is imperative that the effectiveness of this programme be examined. In order to accomplish this goal, students attend tutoring sessions, personal and career counselling and participate in peer mentoring programs that are designed to increase their exposure and self-confidence while assisting them with their degree programs must have impact on the level of their performance in school (Kiveu, & Mayio, 2010).

The efforts of private universities in Nigeria are aimed at retaining students and improving the quality of their education and lives which rests on the provision of these school services. Provision of those school services specifically directed at student welfare. Such services include: student accommodation, feeding, water and electricity supply, provision of climate moderators (fan, air-conditioners), security, transportation, health, postal and banking services, computer services, parks, gardens and toilet facilities. These school services carefully observed border on the physiological and security needs (Abdul, 2015). Al-Hikmah University is the first Islamic private university in Nigeria. It was established in the year 2005 by the National Universities Commission (NUC). Since inception, the university has been providing various services to students so as to satisfy their needs. It is against this background that this study examined students' perception on school

services in Nigerian private universities with reference to Al-Hikmah University, Kwara State.

LITERATURE REVIEW

Theoretical Review

The theory for this study is Needs Theory which was propounded by Abraham Maslow theory. The most popular and universally accepted theory of motivation can be attributed to Abraham Maslow theory of needs. Within every human being, there are basically five needs that human being wants in life. Those needs are arranged according to its importance. The needs follow in sequence and when one need is satisfied, it decreases in strength and the higher need then dominates the behaviour. Therefore, a satisfied need is no longer a motivator. Specifically, there are five basic needs that motivate human being particularly school services for students. These services are psychological needs, safety needs, social needs, esteem and self-actualization need to promote effective teaching and learning process in the university system (Suleiman, 2017; Suleiman, Hanafi & Taslikhan, 2016).

Relating these needs of school services to the school system implies that, the hierarchy of needs as postulated by Maslow is in tandem with the school services which are needed in school for students to excel. For example, academic services, guidance and counseling services, library services, orientation services among others can be categorized under self-actualization. Recruitment, sports, evaluation and assessment falls under self-esteem, while student unionism, club and religious activities encompass social needs. Also, security guards, fire extinguishers and discipline are under security needs, while health, accommodation, food and water are under psychological needs. The following are hierarchy of needs that are closely related to the school services provided for students in the tertiary institutions; self-actualization: guidance and counselling and library services, esteem needs: academic services, sports and admission services, social needs: student union, club, internet services and religious activities, security needs: security guards and fire extinguishers and psychological needs: accommodation, transportation services, health, power supply services, food and water (Oparinde, 2012; Suleiman, Hanafi & Taslikhan, 2018; Suleiman, Hanafi & Thanslikan, 2019).

Conceptual Review

School services are regarded as those essential services and activities which are undertaken in the school system that make the students and staff to be convenient in the school. It is the duty of all and sundry to make furniture, equipment, books and expendable materials available in the schools to enhance students' performance. The inadequacy of these institutional school services in the school constitutes another source of frustration which may lead to truancy and poor academic performance of students. Institutional support services as facilities provided in the school system which can contribute towards effective realization of the goals of education (Dada, 2003). Adegboyeje (2016) gave the definition of physical facilities as the essential materials that must be put in place and into consideration for the objectives of the school system to be accomplished. He stressed further that, the availability of these school services determine the quality of instruction and performance of students in the school. Further on the provision of academic support services Suleiman, Hanafi and Muhajir (2019) reported that schools with polluted environment whereby students are deprived of good health services adequately affects school effectiveness and subsequently affects students' performance. The common academic support services in schools are counselling services, library services, welfare service, recreational service, health services and accommodation services.

Ogundele and Moronfoye (2012) identified infrastructural facilities, availability and utilization as an effective way of enhancing academic goals achievement of tertiary education, among the school services which provide visible services are welfare service, recreation facilities, accommodation facilities, library services and laboratory equipment. These school services utilization in the school encourage effective participation and involvement by both the staff and the students thereby reducing absenteeism, dropout, repetition, wastage, and make the school environment to be conducive for teaching/learning process. The dilapidated buildings, poor accommodation and poor services as factors that are responsible for poor academic performance and truancy among students. A greater number of students uprising in the world are as a result of deficiencies on students' welfare services such as inadequate provision of health services, student accommodation and incendivity to students' essential services (Abisoye, 2016). Hallak (2015) identified the school services as the major factor contributing to academic achievement in the school system. These include the school buildings, libraries, laboratories, recreational equipment and other instructional aids. In order to measure the efficiency of any education system,

the inputs and the process, have to be related to the effects, which are based upon the outputs and the outcomes.

Empirical Review on School Services

Academic Services

Past studies indicate that academic services encompass institutional activities that make use of the available facilities in the schools for the benefits of the students in the tertiary institutions. They supplement regular classroom instructions and assist lecturers in understanding and helping students. It could equally be regarded as a package of programme which is designed not only to increase students' feeling of satisfaction, belongingness, identification and achievement but also to contribute to developing an environment which will enhance and extend the learning experience of students beyond classroom structure (Bisi-Onyemaechi et al., 2021). Abay, Amare, Tiberti and Andam (2021) noted that academic services would then be summed up as those facilities provided in the school system which can contribute towards effective realization of the goals of education. In other words, it is the production of "complete man" an individual who is useful not only to himself but also to the society in which he lives. Ahmed (2017) was of the view that academic services have passed through four main phases which are those of the disciplinarian, the custodian, the educator and the integrator. He explained further that for any educational system to be able to cater for the overall development of the child, students should be able to come out of the system and be able to adjust to the needs and aspiration of the society and as well meeting up with the global challenges. From the above, one can say that institutional support services include all school activities provided for the well-being of the students which could be both academic and non-academic activities. These academic services provided can make the school environment become conducive for teaching learning processes in the university.

Guidance and Counselling Services

The study conducted by Hameed (2016) found that guidance and counselling services is designed to bring about positive changes in students, in such a way that students' behaviours are more efficiently achieved because of the operation of high-quality counselling services. It is evident from various studies that guidance and counselling services are the heart of students' development strategy. Thus, university management must adopt an enlightened guidance and counselling services that would allow greater students' attitude adequate reinforcement, career development and effective

participation in teaching and learning process. Adesina (2005) concluded that poor attitude of students in the tertiary university system must be resolved through the use of appropriate guidance and counselling services. Establishment of students' guidance and counselling services unit in the schools contributes greatly to students' academic achievement. The counselling unit is to be manned by trained and experienced counsellors who can relate with students, help find solution to their psychological problems. Guidance and counselling services generally involves the provision of information to the students on various aspects of life. These are designed to make students more self-directive not only during their stay in the school but throughout life. For a school guidance and counselling services to be effective, it must properly accommodates trained staff who work full time and whose professional orientation must be understood by the school community.

Extra-curricular Services

The study of Edem (2017) concluded that socialization is one concept that emphasizes education as a means of transmitting social norms, rules and regulations, traditions, expectations and needs. A recent trend in curriculum revision has been in the recognition by educator of the important role of outdoor activities in contributing to the social, emotional, physical and intellectual development of students in the past, they were labeled 'extra-curricular' and regarded as 'extras' of less significant value than indoor academic work. It was observed that outside activities reinforce indoor learning. For example, students' involvement in sports and games are useful for character, social and physical development as well as for health and mental growth. Ogundele (2012) identified the extra-curricular services which school should provide for the students which include games sports, gymnastics, music, dancing, art and dramatic activities. Also, students are expected to be involved in journalistic and creative writings, and other social activities that improve their socialization. These activities include social club, religious societies, state/ethnic associations, sporting activities and student community interactions. Extra-curricular services provided in the school will improve students' social interactions which will in turn aid effective students' academic performance in the schools. Nholi (2016) concluded that extra-curricular services move students away from their home community into an alien culture. Students' cultural associations thus serve as a conscious appreciation that help the students to remain attached to their social roots in the school environment.

Health Services

The curative and protective measures taken against diseases in the school system for the welfare of students is another essential support service which a school requires in order to enhance students' learning within the school system (Suleiman, 2017). Olaitan (2003) noted that apart from providing for the medical care of the students, the school should have a health policy which measures against the outbreak and spread of diseases. Good health is very paramount to students' learning. He however pointed out that, a student who is always absent from school on account of ill health will not be able to learn efficiently and effectively even with the best of feeding materials. It is therefore, important that the school should have a clinic within the school, head by a physician, assisted by registered nurses and attendants. These personnel will be able to educate students on preventive health and also attend to students' health needs and these will forestall unruly behaviour within the school system.

Power Supply and Internet Services

According to Edem (2010), the major benefit of power supply services particularly in African schools particularly tertiary institutions is that, power supply services promote the meeting points for students from diverse cultural and ethnic background to learn how to live and study together. Raji (2016) concluded the need to provide power supply is paramount for the hostel, laboratories, workshops, classrooms and even for security at night. This equally necessitates the need for the extinguishers in case of fire outbreak. The internet is a global collection of computer networks that are linked together by devices called routers and use a common set of protocols for data transmission known as TCP/IP (transmission control protocol / Internet protocol). The primary purpose of the internet services is to facilitate the sharing of information. The World Wide Web is a way of exchanging information between computers on the Internet, tying them together into a vast collection of interactive multimedia resources. It is a hypertext interface to internet information resources. Internet and Web is not the same thing: Web uses internet to pass over the information.

The internet services are most often used for three main purposes: Communication, Buying and selling (e-commerce), Searching for information, a connection method, an Internet Service Provider (ISP), a web browser, enter the URL of a website you want to visit and use a Search Engine. The Internet is a global network of networks connecting millions of users worldwide via many computer networks using a simple standard common addressing system and basic communications protocol called TCP/IP

(Transmission Control Protocol/Internet Protocol). This allows messages sent over the Internet to be broken into small pieces, called packets, which travel over many different routes between source and destination computers. Internet resources -- information and services -- are provided through host computers, known as servers. The server is the computer system that contains information such as electronic mail, database information, or text files. As a customer, or client, you access those resources via client programs (applications) which use TCP/IP to deliver the information to your screen in the appropriate format for your computer (Ibenne & Durodolu, 2021).

Library Services

Library services could really be very vital, because they tend to have direct bearing on academic excellence (Suleiman, 2017). According to Suleeiman (2021), the school educates the students by offering verbal classroom teachings, the library complements the school by encouraging private study. Olaitan (2017) described the library services as a collection of books and other forms of records, housed, organized and interpreted to meet broad and varying needs of students for information, recreation and aesthetic enjoyment. School library services found in tertiary institutions are established for the development of teaching and learning. They are expected to offer supplementary reading materials in the educational pursuits of the child but contrary to this, most of the present school libraries lack current reading materials. Library contributes to education in a number of way, some of these contributions include encouraging reading, expanding learning and critical thinking skills. Libraries also help in developing appreciation, values and also assist in developing mental task. Raji (2016) noted that the establishment of school libraries is as essential as the establishment of schools themselves.

Research Questions

1. What are the school services provided for students in Al-hikmah University?
2. What is the students' perception on school services in Al-Hikmah University, Ilorin, Nigeria?

METHODOLOGY

Research Design

The appropriate research design adopted for this study was descriptive survey. This is because the study tried to explain the characteristics of large population of the respondents.

Population/Sampling Techniques

The population of this study comprised 4,262 undergraduate students in Al-Hikmah University based on the data obtained from the registry, Al-hikmah University. The table below shows the population of the students in Al-hikmah University according to the faculties

S/N	Faculties	Population
1	Agricultural Sciences	439
2	Education	521
3	Health Sciences	608
4	Natural and Applied Sciences	1020
5	Humanities and Social Sciences	940
6	Law	335
7	Management Sciences	399
	Total	**4,262**

Source: ICT Unit, Al-Hikmah University

In order to draw the sample size that was needed for the study from the population, Krejcie and Morgan (1970) sampling table was used to determine the sample size of the 4,262 which was 381 students were used and suitable for the study from the seven faculties selected respectively. Furthermore, two sampling techniques were adopted to select the respondents. These include stratified and random sampling techniques. Firstly, stratified technique was used to group students according to their gender, level and faculties. The respondents were randomly selected.

Instrumentation

The instrument used for the study titled: School Services Questionnaire (SSQ) which was used to collect data for this study from the respondents. The instrument was designed based on the indicators of the variable in order to determine the students' perception on school services. The validity of the instrument was done by the supervisor in order to determine its content, face and construct validity. Pilot study was conducted with 50 students using students of another university in Kwara State. The coefficient of 0.75 was obtained showing that the instrument was reliable for data collection.

Procedure for Data Collection

Students' Perception on School Services Questionnaire (SPSSQ) was administered to students in the five faculties selected for this study. The respondents were assured that information accessed and secured in the course of this study was protected from unauthorized persons and that information obtained was used for the sole purpose of the study.

Method of Data Analysis

The data collected for this study was subjected to descriptive statistics of frequency counts, percentages, mean and standard deviation. The descriptive was used to analyze the demographic data of the respondents and it was also used to answer the research questions raised for the study. The scoring of the item in the instrument was High-3, Moderate-2 and Low-1. Any item in the questionnaire within the mean range between 2.00 and 3.00 was considered high or regular (which is accepted) while any item with a mean score below 2.00 was considered low or irregular (which is rejected).

ANALYSIS

The result of the demographic data of the respondents was presented as follows:

Table 1: Demographic Characteristics of the Respondents

N	Variables		Frequency	Percentage %
1.	**Gender**	Male	199	52.2
		Female	182	47.8
		Total	**381**	**100.0**
2.	**Level**	200	57	14.9
		300	89	23.4
		400	211	55.4
		500	24	6.3
		Total	**381**	**100.0**

Table 1 presents the respondents' demographic characteristics. The table shows that out of the 381 students of Al-Hikmah University who participated in the study, 199 (52.2%) were male, 182 (47.8%) were female. On the basis of the level of students, 57 (14.9%) were 200 level students, 89 (23.4%) were

300 level students, 211 (55.4%) were 400 level students while the remaining 24 (6.3%) were 500 level students. Male students and 400 level students constituted the majority who participated in this study. The pie-chart below shows the level of participation of students.

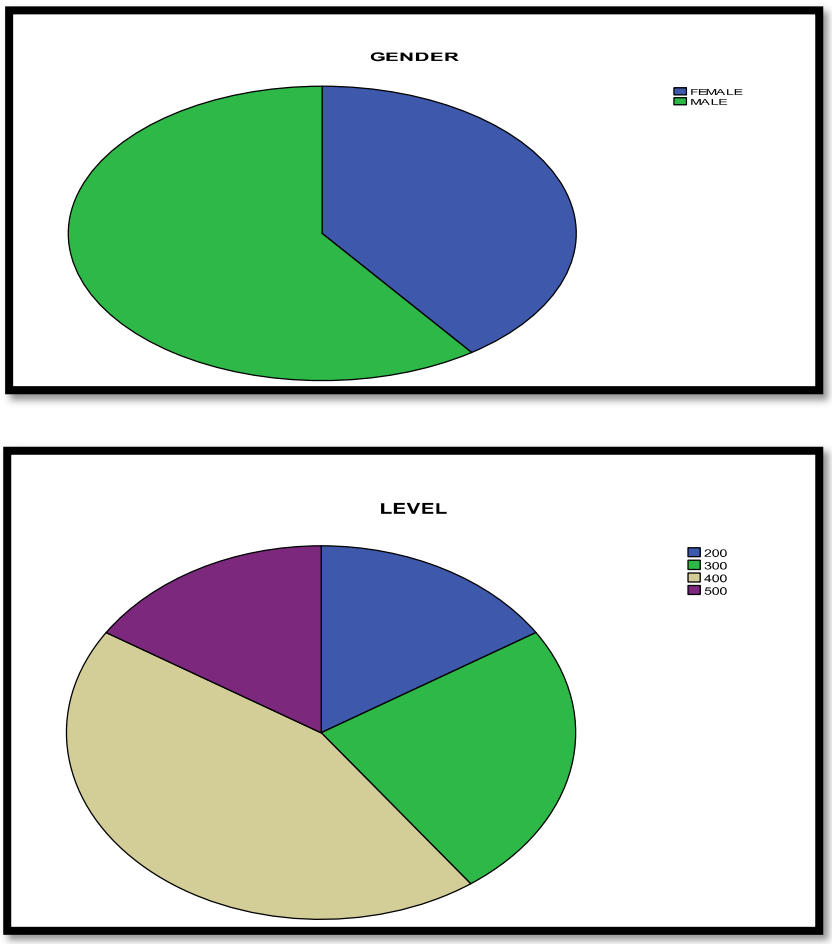

Figure 1: Demographic characteristics of the respondents

Research Question 1: What are the school services provided for students in Al-Hikmah University?

S/N	School Services	Mean	SD	Decision	Ranking
1	Academic Services	16.86	2.99	Accepted	5th

2	Guidance and Counselling Services	17.06	3.28	Accepted	3rd
3	Admission Services	16.44	2.99	Accepted	6th
4	Extracurricular Services	8.56	3.89	Accepted	8th
5	Health Services	18.74	3.39	Accepted	2nd
6	Power Supply Services	19.52	3.62	Accepted	1st
7	Internet Services	8.72	3.57	Accepted	7th
8	Library Services	17.0	3.13	Accepted	4th

Table 2: Mean Ratings and Standard Deviations of School Services Provided for Students in Al-Hikmah University

Table 2 shows the mean ratings on the school services provided for students in Al-hikmah University. The items had mean ratings of 16.86, 17.06, 16.44, 8.56, 18.74, 19.52, 8.72 and 17.0 respectively. The standard deviations of 2.99, 3.28, 2.99, 3.89, 3.39, 3.39, 3.62, 3.57 and 3.13 respectively. The analysis implies that the mean ratings of these items are greater than mean range between 2.00 and 3.00 bench mark which were all accepted. Power supply services was ranked 1st with the mean of 19.52 and health services was ranked 2nd with the mean of 18.74 respectively. This by implication shows that, those school services were put in place for students in Al-hikmah University.

Research Question 2: What is the students' perception on school services in Al-Hikmah University, Ilorin, Nigeria?

Table 3: **Students' Perception on Academic Services**

S/N	Items	Mean	SD	Decision
1	Keeping of students' records	3.32	.587	Accepted
2	Accessibility to results	3.30	.614	Accepted
3	Attitude of lecturers to lecture delivery	3.32	.513	Accepted
4	Recruitment of qualified and competent lecturers	3.36	.631	Accepted
5	Punctuality by lecturers	3.56	.644	Accepted

Average Mean	**3.37**	**.597**	Accepted

Table 3 shows the mean ratings of the analysis on the responses of students' perception on the provision of academic services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.32, 3.30, 3.32, 3.36 and 3.56 with the standard deviation of .587, .614, .513, .631 and .644 respectively. The table shows that the average mean of the respondents was 3.37 with the standard deviation of 0.597 which is higher than the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on academic services provided in Al-Hikmah University, was high.

Table 4: Students' Perception on Guidance and Counselling Services

S/N	Items	Mean	SD	Decision
1	Provision for standard guidance and counselling services	3.12	.689	Accepted
2	The level of career counsellors provided for the students'	3.90	.544	Accepted
3	The level that enables students to understand themselves better through guidance and counselling services in Al-Hikmah University is	3.04	.669	Accepted
4	Making the right career choices of students through counselling services.	3.88	.689	Accepted
5	Accessibility of guidance and counselling services.	3.12	.689	Accepted
	Average Mean	**3.41**	**.656**	**Accepted**

Table 4 shows the mean ratings of the analysis on the responses of students' perception on the provision of guidance and counselling services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.12, 3.90, 3.04, 3.88 and 3.12 with the standard deviation of .689, .544, .669, .689 and .689

respectively. The table shows that the average mean of the respondents was 3.41 with the standard deviation of .656 which is higher than the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on guidance and counselling services provided in Al-Hikmah University, was high.

Table 5: **Students' Perception on Admission Services**

S/N	Items	Mean	SD	Decision
1	Admission criteria for admitting students.	3.42	.673	Accepted
2	The online process for application.	3.24	.625	Accepted
3	The rate of admitting students.	3.28	.573	Accepted
4	Requirements for admission.	3.28	.536	Accepted
5	Provision for admission services.	3.22	.582	Accepted
	Average Mean	**3.29**	**.598**	**Accepted**

Table 5 shows the mean ratings of the analysis on the responses of students' perception on the provision of admission services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.42, 3.24, 3.28, 3.28 and 3.22 with the standard deviation of .673, .625, .573, .536 and .582 respectively. The table shows that the average mean of the respondents was 3.29 with the standard deviation of .598 which is higher than the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on admission services provided in Al-Hikmah University, Ilorin was high.

Table 6: **Students' Perception on Extracurricular Services**

S/N	Items	Mean	SD	Decision
1	Provision of indoor games for students	1.64	.722	Rejected
2	Regular inter and intra school sport competition	1.90	.839	Rejected
3	Standard sport field	1.84	.842	Rejected
4	Adequacy of sport equipment	1.62	.780	Rejected

5	Sport participation in the state or local sport activities	1.56	.705	Rejected
	Average Mean	**1.71**	**.778**	**Rejected**

Table 6 shows the mean ratings of the analysis on the responses of students' perception on the provision of extra-curricular services in Al-Hikmah University, Ilorin. The items had mean ratings of 1.64, 1.90, 1.84, 1.62 and 1.56 with the standard deviation of .722, .839, .842, .780 and .705 respectively. The table shows that the average mean of the respondents was 1.71 with the standard deviation of .778 which does not fall within the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on extra-curricular services provided in Al-Hikmah University, was low.

Table 7: Students' Perception on Health Services

S/N	Items	Mean	SD	Decision
1	Employment of qualified nurses/medical doctors	3.16	.584	Accepted
2	Adequacy of drugs	3.94	.586	Accepted
3	The level of clinic equipment	3.84	.738	Accepted
4	The level of security services in the school clinic	3.82	.800	Accepted
5	The healthcare delivery	3.98	.685	Accepted
	Average Mean	**3.75**	**.678**	**Accepted**

Table 7 shows the mean ratings of the analysis on the responses of students' perception on the provision of health services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.16, 3.94, 3.84, 3.82 and 3.98 with the standard deviation of .584, .586, .738, .800, and .685 respectively. The table shows that the average mean of the respondents was 3.75 with the standard deviation of .678 which is higher than criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on health services provided in Al-Hikmah University, Ilorin was high.

Table 8: Students' Perception on Power Supply Services

S/N	Items	Mean	SD	Decision
1	The level of power supply	3.98	.769	Accepted
2	Backup power supply for students	3.82	.720	Accepted
3	Accessibility of electricity	3.86	.783	Accepted
4	The level of power interruption	3.88	.689	Accepted
5	Students' mobility at night on campus with electricity	3.98	.654	Accepted
	Average Mean	**3.90**	**.724**	**Accepted**

Table 8 shows the mean ratings of the analysis on the responses of students' perception on the provision of power supply services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.98, 3.82, 3.86, 3.88 and 3.98 with the standard deviation of .769, .720, .783, .689, and .654 respectively. The table shows that the average mean of the respondents was 3.90 with the standard deviation of .724 which is higher than the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on power supply services provided in Al-Hikmah University, was high.

Table 9: Students' Perception on Internet Services

S/N	Items	Mean	SD	Decision
1	Accessibility to internet services	1.54	.762	Rejected
2	The level of lecture delivery with the aid of internet services	1.54	.706	Rejected
3	Fluctuation of the network services	2.24	.847	Accepted
4	Use of virtual teaching	1.66	.626	Rejected
5	Use of Computer-based test	1.74	.633	Rejected
	Average Mean	**1.74**	**.714**	**Rejected**

Table 9 shows the mean ratings of the analysis on the responses of students' perception on the provision of internet services in Al-Hikmah University,

Ilorin. The items had mean ratings of 1.54, 1.54, 2.24, 1.66 and 1.74 with the standard deviation of .762, .706, .847, .626, and .633 respectively. The table shows that the average mean of the respondents was 1.74 with the standard deviation of .714 which does not fall within the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on internet services provided in Al-Hikmah University, was low.

Table 10: Students' Perception on Library Services

S/N	Items	Mean	SD	Decision
1	The state of libraries (physical and e-libraries).	3.10	.505	Accepted
2	Libraries equipped with facilities.	3.14	.606	Accepted
3	Provision of Internally Generated Revenue for the maintenance of school library services.	3.86	.700	Accepted
4	Internet services provided for students in libraries.	3.90	.678	Accepted
5	Supply of dailies/newspaper and modern textbooks to the school libraries	3.00	.645	Accepted
	Average Mean	**3.40**	**.626**	**Accepted**

Table 10 shows the mean ratings of the analysis on the responses of students' perception on the provision of library services in Al-Hikmah University, Ilorin. The items had mean ratings of 3.10, 3.14, 3.86, 3.90 and 3.00 with the standard deviation of .505, .606, .700, .678, and .645 respectively. The table shows that the average mean of the respondents was 3.40 with the standard deviation of .626 which is higher than the criterion limit of 2.00 and 3.00 for interpretation. Thus, this implies that the level of students' perception on library services provided in Al-Hikmah University, Ilorin was high.

DISCUSSION

The analysis on the level of students' perception on academic services, guidance and counselling services, admission services, health services, power supply services and library services implies that the average means of these items are 3.37, 3.41, 3.29, 3.75, 3.90 and 3.40 respectively were greater than criterion limit of 2.00 and they were all accepted. This shows that the

level of students' perception on the provision of academic services, guidance and counselling services, admission services, health services, power supply services and library services in Al-Hikmah University, was high. The findings of the result was supported by the findings of Bisi-Onyemaechi et al. (2021) who stated that academic services encompass institutional activities that make use of the available facilities in the schools for the benefits of the students in the tertiary institutions to increase students' feeling of satisfaction, belongingness, identification and achievement. Hameed (2016) agrees with the findings that, university management must adopt an enlightened guidance and counselling services that would allow greater students' attitude adequate reinforcement, career development and effective participation in teaching and learning process. Edem (2010) concluded that the major benefit of power supply services particularly in African schools particularly tertiary institutions is that, power supply services promote the meeting points for students from diverse cultural and ethnic background to learn how to live and study together. The need to provide power supply is paramount for the hostel, laboratories, workshops, classrooms and even for security at night. This equally necessitates the need for the extinguishers in case of fire outbreak Olaitan (2003) noted that apart from providing for the medical care of the students, the school should have a health policy which measures against the outbreak and spread of diseases. Good health is very paramount to students' learning. The findings of the result was supported by the findings of Suleiman (2017) who concluded that library services is a collection of books and other forms of records, housed, organized and interpreted to meet broad and varying needs of students for information, recreation and aesthetic enjoyment.

The analysis on the level of students' perception on extra-curricular services and internet services indicates that the average means of these items are 1.71 and 1.74 respectively were less than criterion limit of 2.00 and they were all rejected. This shows that the level of students' perception on extra-curricular services and internet services provided in Al-Hikmah University, Ilorin was low. The result of this finding was against by the findings of Edem (2017) who concluded students' involvement in sports and games are useful for character, social and physical development as well as for health and mental growth. Ogundele (2012) agreed that the extra-curricular services which school should provide for the students which include games sports, gymnastics, music, dancing, art and dramatic activities. Suleiman, Hanafi and Muhajir (2019) stated that the internet service is a global network of networks connecting millions of users worldwide via many computer networks using a simple

standard common addressing system and basic communications protocol called TCP/IP (Transmission Control Protocol/Internet Protocol).

CONCLUSION AND RECOMMENDATIONS

It was concluded from the findings of this study that the level of students' perception on academic services, guidance and counselling services, admission services, health services, power supply services and library services in Al-Hikmah University, was high and that of extra-curricular services and internet services was low. This implies that school services are very germane in the running of university system towards the attainment of its goals. Based on these findings, the following suggestions were put forward that;

1. The management of Al-Hikmah University should improve on the school services for students in the areas of extra-curricular services and internet services so that effective teaching and learning could be improved on students' academic achievement.
2. The management of Al-Hikmah University should ensure that priority and ultimate attention is given to guidance and counselling services so that students could be assisted and guided in the career choice.
3. The management of Al-Hikmah University should not relent on the adequate provision of academic services, admission services, health services and library services for the students. By doing this, it will improve the level of students' enrolment as well as reduce students' drop-out rate.
4. Government agencies (e.g. Tertiary Education Trust Fund (TETFUND), Petroleum Technology Development Fund (PTDF)) should assist Al-Hikmah university in the provision of social amenities.
5. Philanthropists should offer assistance to the university on the provision of school services, such as library, classroom, accommodation, internet among others.

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THE PERSPECTIVE OF FREE TIME MOVEMENT IN PERSONS WITH MOTOR DISABILITY

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Abstract: *This research aimed at investigating the ways of spending leisure time in terms of gender and age, for people with motor disabilities (N - 93 subjects). It has been noticed that both men and women prefer to practice hobby activities at leisure, read, listen to music or collect stamps or watch television. Activities that do not appeal to both men and women are the same: to practice a hobby, such as walking, going for excursions, practicing a sport. For women there is added activity that does not please them: going out with friends with the city. For those with motor disabilities, younger ages (under 40) are associated with active leisure activities (going out in town with friends, going to recovery activities and practicing a hobby: walking, excursions, practicing a sport etc.), while older (over 40 years) are associated with passive activities (sleeping, watching TV, I have a hobby like: reading, listening to music, collecting stamps, etc.).*

Keywords: *motor deficiencies; free time; perspectives of: gender; graduate studies.*

Introduction

Free time can be seen as "rest, recreation" (*Collins Australian Pocket English Dictionary*) or "time at your own command" (*Webster's Third New International Dictionary).* The literature cites several ways in which leisure time is defined: as activity, as play, as recreation (Godbey, 1994), as a state of mind, quality of life (Harper, 1997; Isao-Ahola, Mannell, 2004; Roberts, 2006). Free time is described in several functions: rest, fun, personality development (Dumazedier, 1974), educative - to learn about an active, healthy lifestyle, learn about values moral (Veal, 1992; Siegenthaler, Gonzalez, 1997; Henderson, Bialeschki, 2007; Shaw, Dawson, 2010). Americans spend less than 50% of their lives in self-care activities, while more than half of their lives are engaged in productive and recreational activities, 19% and 35%, respectively (Reed, Sanderson, 1992). This equilibrium of occupations is an

important concept in assessing the quality of time consumption, quality of life and health (Hammell, 1995).

The free time feeling, from an ontogenetic perspective, has different valuations. During childhood, playing, the main activity during childhood, can be regarded as a social activity. Analysis of the impact of disability on the use of objects and gaming activities is essential in childhood. What the environment provides to the child influences the way they behave in relation to the environment. The analysis discusses how different deficiencies have an impact on the development of the child's self-esteem and social identity through the interaction with their colleagues. Often, it will be necessary to create activities to support the development of the child, active social participation, in which the deficient child can explore itself as an agent that contributes uniquely to social life. The emphasis will be on supporting the child in exploring the physical and social properties of the world (Bøttcher, Dammeyer, 2016). The motor experience gained through prehension and locomotion plays a very important role in the cognitive development of children. Children with motor disabilities cannot independently explore the environment and cannot manipulate objects, so their motor deficiencies limit their possibilities to develop adequate cognitive and social skills. Assistive technologies can provide means for children with disabilities to interact independently with the physical and social environment (Alvarez, 2013). For the kid, toys are not just to play. Toys are types of gameplay that help children develop social consciousness, imagination, motor, visual, and thought processes. Since many toys are important learning tools, children should have easy access to the right toys to explore and choose those who care about it. Parents need a place where they can consult with someone about what toys are suitable for their child's development. Toy shops and toy libraries offer this service (Stone, 1983). Children need activities in which to take various risks appropriate to their age in different environments, so also in the open air. Exploring the surrounding world begins from childhood and is an important part of a childhood that includes experiences rich in nature. In this context, adults often enable children's risk-playing opportunities, or, as well, restricting such experiences. Even if there are dangers inherent in exploring nature, it is natural for children to be attracted to these experiences, regardless of the parents' safety concerns modern (McFarland, Gull Laird, 2018; Carver, Timperio, Crawford, 2008; Lancioni et al., 2020).

Adolescents with low functioning motor skills have reduced the perception of their physical self and tend to avoid physical activity. Social media tools are vital to the lives of teenagers today. According to the Kaiser Family Foundation study, in 2010, American children aged 8-18 use these tools (Rideout, Foehr, Roberts, 2010) on average 7.5 hours a day, 7 days per day week. It is important that this media fascination for adolescents should be

understood and used to determine the best way to use these tools to engage students in education by parents and educators (Zhao, Qiu, 2011). In the last decades, technology has been seen as an essential tool for ensuring equal access and opportunities for students and adults with disabilities (Lee, HE, & Cho, J., 2018). As technology evolved, a new type of mobile device technology emerged in the late 2000s. iPads quickly gained attention and popularity in educational contexts. The potential benefits of using iPads as Assistive Technology (AT) to support people with disabilities has been demonstrated among professionals (Chuang, 2017; Contreras, Bauza, Santos, 2019).

When we talk about adults, we notice that postural and motor dysfunctions resulting from neurological disorders often cause secondary problems. In order to prevent these problems and to maximize functional capacity, people with these disorders need regular and consistent management, preferably embedded in daily routine activities (a management program that also includes the home environment) (Pope, 1997). Research has various ways of adapting to improve the quality of life, more specifically writing to people with motor disabilities. Here are some of these: the optical sensor, which together with a keyboard simulator allows motorized disabled users to click on the computer keys (Lancioni, 2007) and the mouse — (UFRGS) that is functional, useful and accessible to motorized persons (Wook, 2018).

The history of sport for people with disabilities cannot be fully understood without discussing the history of the rights of people with disabilities. A number of historical changes have taken place since the end of the 18th century, which has led to significant progress in recognizing and accepting the rights of people with disabilities. There was a coherent way that the movement evolved from recreation and childhood competition, to teamwork, and to elite completion to form the Special Paralympic Games (Scholz, 2017). Children and adolescents with physical disabilities have lower health levels than non-disabled children. The reduction in physical activity is associated with a high risk of developing cardiovascular disease and lower levels of cognitive and psychosocial functioning. In addition, these children participate less in recreational and competitive sports. In addition to problems related to the chronic condition itself, various personal and environmental factors play an important role in determining the extent to which they participate in sports or physical activities. Because of these barriers, sports participation in the immediate after-school hours seems to be a feasible solution for these children and adolescents to become more physically active. An after school sports program can improve the physicality levels (Zwinkels, 2015). An individually tailored exercise program in a supportive environment can lead to a lasting improvement in fitness performance for low-skilled teenagers (Chivers, Grace, McIntyre, 2017). Currently there are persons with motor disabilities

have athletic achievements in the field of sports. It is quite common for paraplegic athletes to complete marathons or practice tennis in the wheelchair. Mountaineering requires a repertoire of multiple movements, participants with all levels of expertise can be challenged functionally and cognitively. However, to date, only a few research projects have investigated the feasibility of climbing as a potential activity to enhance physical activity in children with motor disabilities. One piece of research tested the feasibility of an intensive three-week workout program for children with motor disabilities (cerebral palsy). The motor skills have been enhanced by training, increased synchronization between the cortex and the muscles, which has led to a more efficient activity of the motor unit (Christensen, 2017). Besides sports, music has been successful as a therapeutic intervention for people with physical disabilities. Movement and coordination can be enhanced by many musical experiences (Hatampour, Zadehmohammadi, Masoumzadeh, Sedighi, 2011). People with motor disabilities tend to be passive and isolated. One way to help them improve their social behavior involves using intervention packages that combine support technology with motivational strategies. Limited involvement in leisure activities has been recorded, especially for people with severe disabilities. But for people with less severe motor disabilities, things are changing. Despite the desire to explore, the possibilities of travel in hiking, the possibility of access to different areas is limited to people with motor disabilities. The physical difficulties and high costs of accessing these areas are real obstacles despite the great desire to visit the above mentioned areas (Lovelock, 2010). When there were people who offered leisure time in an indoor space, there was an increased commitment from motorized people to these activities (Wilson, Reid, Green, 2006). Frequency of participation in recreational activities for children and young people with physical disabilities is associated with a variety of variables: motor capacity, cognitive ability, communication skills, age, gender (Bult et al., 2011). Children with disabilities, and especially girls, have a more limited participation in recreational activities involving social interactions (Schreuer, Sachs, Rosenblum, 2014). Adults with physical disabilities often have limited opportunities to participate in leisure activities. Virtual reality technologies can serve to expand the repertoire of recreational activities, giving these activities accessibility to people with disabilities, all activities that have been perceived as pleasant and successful. They maintain a high level of interest and offer varied and motivating opportunities for timed activities (Yalon-Chamovitz, Weiss (Tamar), 2008).

Methodology

The ***research aimed to*** investigate the leisure time by people with motor disabilities from the point of view of gender, age and studies completed.

Research assumptions were: (1) we anticipate that people with motor-based disabilities engage in more outdoor leisure activities; (2) we anticipate that the age of subjects with motor disabilities influences how people choose to spend their free time.

The survey was ***the main method*** used in research. The research tool was built on the analysis of the results of a qualitative approach. There were two focus groups, one with experts in the medical, kinetotherapeutic and psychoeducational field, and the second one with people with motor disabilities and their dependents. The questionnaire is designed to have two dimensions: leisure and attitude towards the world and life. The questionnaire was developed and validated specifically for this research (Alpha Cronbach = 0.802). The first dimension, how time is spent was investigated for this research. It followed: frequency out countries in their city, ease of integration into new groups, those who support them. Varieties of leisure — watching television, sleeping and practicing a hobby, for example: reading, listening to music, collecting stamps, going to town with friends, going to recovery activities and practicing said hobbies: I walk, go on trips, basically a sport etc. The results of the second dimension, the attitude towards the world and life are the subject of another research. The data was collected from May to June 2020. Informed consent was made prior to the application of the instrument, the subjects were explained the purpose of the research, the research methods and tools, the associated risks, and the rights as a research subject. Participants were assured of data confidentiality. On average, completing the questionnaire lasted a maximum of 5 minutes for the participant.

The group of participants consisted of 93 subjects **of research** with motor disabilities: finger amputations (e) 5.5% (5 subjects), arthrogryposis artogripoză 4.4% (4 subjects), diplegia diplegie 14.3% (13 subjects), dislocation of the hip 2.2% (2 subjects), 2.2% (2 subjects), 23.1% hemiparesis (21 subjects), 12.1% hemiplegia (11 subjects), 2.2% muscle hypotension (2 subjects), myopathy 2.2% (2 subjects), 6.6% poliomyelitis polio norovirus (6 subjects), 2.2% (2 subjects), 4.4% (4 subjects), 5.5% paresis (2 subjects), 2.2% (2 subjects), 2.2% (2 subjects), 2.2% (2 subjects), 5.6% tetraparase (6 subjects), virosis which affect muscle muscular virosis 2.2% (2 subjects). Of the subjects participating in the research, 34.4% (32 subjects) stated that the deficiency was innate, the remaining 65.6% (61 subjects) that the deficiency was acquired tetraplegie, 5.5% (5 subjects), arthrogryposis 4.4% (4 subjects), dipleria 14.3% (13 subjects), hip dislocation 2.2% (2 subjects) dyspraxia 2.2% (2 subjects), hemiparesis 23.1% (21 subjects), hemiplegia 12.1% (11 subjects) 2.2% (2 subjects) 2.2% (2 subjects) 6.6% (6 subjects), chronic osteoporosis 2.2% (2 subjects), paraparase 4.4% (4 subjects), paresis 5.5% (5 subjects), lower amputee 2.2 (2 subjects), 2.2% (2 subjects), 2.2% (2 subjects), 6.2%

tetraparase (6 subjects), 2.2% (2.2%), and 2 (2 subjects) juvenile rheumatoid arthritis.
Of these, 60.2% (56 subjects) were male, the remaining 39.8% (37 subjects) being female. Depending on the country of origin, there were 73 subjects (78.5%) from an urban area, and the remaining 20 subjects (21.5%) living in rural areas. If we look at the age group, we have 14 subjects (15.05%) aged up to 20 years; 29 subjects (31.18%) aged 21-30 years; 17 subjects (18.27%) aged 31-40; 18 subjects (19.35%) aged 41-50 years; and 15 subjects (16.12%) aged over 50 years. Another criterion for differentiation was the level of education of the subjects: 16 subjects (17.2%) had graduated from the general school, 41 subjects (44.1%) graduated from the high school, 22 subjects (23.7%) graduated from the school post-secondary and 14 subjects (15.1%) who graduated from higher education (faculty). Engagement was another aspect of the batch characterization, so only 26 subjects (28%) were employed, the remaining 67 subjects (72%). If we look at the subjects from the point of view of the nature of the deficiency, we have 32 subjects (34.4%) with inherited deficiency and 61 subjects (65.6%) who have acquired the deficiency during their lifetime.

Results

For the first hypothesis of research we anticipate that of people with motor disabilities, males engage in more outdoor leisure activities. To test the validity of the hypothesis we calculated the average values for six of the questionnaire items, looking at from the gender perspective. Half of these items relate to passive ways of spending leisure time (watching television, sleeping and practicing a hobby: reading, listening to music, stamp collecting, etc.) and the other half of the items are about active ways of spending leisure time (out on town with friends, and moving to recovery activities and hobbies: walking, going on trips, sports, etc.). Males recorded an higher average value across all six items compared to females. If we look at the results for outdoor activities, we see how the item *going out with friends,* the average for men is 2.57 (with a standard deviation of 1.21), while for women it is only 1.86 (with a standard deviation of 0 , 92). Men say *I'm going to recovery* with the mean value of 3.00 (with a standard deviation of 1.35) to the underside of women who places all of the mean value C of less than 2.78 (with a standard deviation of 1.27). The same trend is maintained for the item *practicing a hobby: walking, practicing a sport,* etc. respectively, the average for men entering a value of 2.52 (with a standard deviation of 1.35), while the average value of the women is only 2.05 (with a standard deviation of 1.13). And on items considered as a passive *hobby: reading, listening to music, collecting stamps, etc.*), the average value for men was higher than that of women (3.46 with a standard deviation of 1.17 for men, versus 3.35 with a standard deviation of

1.25 for women, but for static activities, the values were found to be inversely correlated, that is, higher for women than for men, so the item women *watch TV* averaged 3.51 (with a standard deviation of 0.961), while the mean value for men is 3.45 (with a standard deviation of 1.06). Women also like *to sleep* more than men (mean value of 3.00 with a standard deviation of 0.88, compared to 2.84 the mean value for men with a standard deviation of 0.93). Following these results we can say that men prefer to be involved in outdoor activities in their spare time (Table 1).

Table 1. Values of the average scores for size breakthrough time

		Scores average	The standard deviation
How do you spend your free time? - I watch TV			
	Men	3.45	1.060
	Women	3.51	0.961
How do you spend your free time? - I'm sleeping			
	Men	2.84	0.930
	Women	3.00	0.882
How do you spend your free time? - I'm out in town and friends			
	Men	2.57	1.204
	Women	1.86	0.918
How do you spend your free time? - Participate in recovery activities .			
	Men	3.00	1.335
	Women	2.78	1.272
How do you spend your free time ? - I have a hobby (reading, listening to music , collecting stamps etc.)			
	Men	3.46	1.175
	Women	3.35	1.252

How do you spend your free time? I am a hobby: I walk, go on trips, basically a sport			
	Men	2.52	1.348
	Women	2.05	1.129

We can conclude, for the first hypothesis, that both men and women prefer to practice in their leisure time, hobby activities like, to read, listen to music or collect stamps or watch television. Activities that less liked are for both categories of people the same: to practice a hobby, such as walking, going on excursions, practicing a sport. Perhaps limiting the possibilities of movement makes them have this option. Interestingly, women dislike going out with friends with the city. The value of the independent t test was calculated. Statistical significance with a p - 0.03 was recorded for the item: *How do you spend your free time? - He's in town with friends.* The value of t is 3.033 (89.04) for a Levene test, F = 5.129. It is the item that confirms that men with motor disabilities are more active than women with the same type of disability when it comes to getting out of the city. The results are also confirmed when applying the one-way ANOVA test. The value of F is 9.198 (91) at a p - 0.03 between gender and item: *How do you spend your free time? - I'm out in town with my friends.*

Second hypothesis: we anticipate that the age of subjects with motor disabilities influences leisure options. In order to test the validity of the hypothesis, we calculated the average values for six of the questionnaire items, viewed from the terms of size, and the age of the subjects. We will work with the same types of activity: passive activities (watching TV, sleeping and practicing a hobby: reading, listening to music, collecting stamps, etc.), and active activities (going out with friends, going to recovery activities and practicing a hobby: I walk, go on trips, basically a sport etc.). The youngest (under 40) is more involved in active activities. Thus, in the case of *going out with friends*, the highest averages are recorded by people aged 31-40 (2.81), then 21-30 (2.63) and 41-50 years (2.22). If, for over 50 years, we can find explanations for the reduced environments, we are surprised by the under-20s, which we find only in the fourth position (2,14).Instead, under the age of 20, we find ourselves in the first position when we talk about *participating in recovery activities* (average - 3.86). Also active are those aged 31-40 years (average - 3.62), respectively those between 21-30 years (average - 2.90). With the aging, over 40 years, participation in recovery activities is gradually decreases, reaching an average of 1.75 in the elderly, between 61-70 years. Persons between 31-40 years, again, have the first position, averaging 3.06 *m* variant: *of a hobby: I walk, go on trips, practice a sport*: followed by the very young (average - 2 .71) and those aged 21-30 years (mean - 2.50). We can

conclude: the most active are those between 31-40 years of age, followed by those aged 21-30 and then those under the age of 20. Those aged over 40 are more involved in passive activities . Thus, in the variant: *sleeping* people aged 51-60 report the highest average value (3.29), followed by those between 41-50 years (3.11). I'm surprised by the very young, under 20's, who also place themselves in the first position (average - 3.29) in this static activity. For the variant: *I watch TV,* people over 50 are holders of the highest values of the media: 4.29 (those between 51-60 years), respect variant v 4.25 (those between 61-70 years) . Also, with large averages, we find those under the age of 20 (average - 3.86). In the: *I have a hobby (read, listening to music, collecting stamps etc)*, those aged between 31-40 years old have the highest average value, 3.88. The same people placed in the first position when it was an active hobby (walking, excursions, practicing sports). Returning to the passive hobby (reading, listening to music, collecting stamps, etc.), for those aged 31-40, we find it very close to the average of 51-60 years old (average 3.86), then those between 61-70 years (average - 3.50). We conclude by saying that older age is associated with passive activities (sleep, watch TV, have a type hobby: listening to music, collecting stamps etc.). It captures the positioning between the top three media values, static activities for young people under the age of 20. Perhaps sickness, impotence, comparing with covariates make young people more passive (Table 2).

Table 2. Values of spare time items for people with motor disabilities from the perspective of the age of the subjects

How do you spend your free time?	**under 20 years of age**	**21-30 years**	**31-40 years 1**	**41-50 years**	**51-60 years**	**61-70 years**
I am watching TV	3.86	3.20	3.06	3.33	4.29	4.25
	.663	.761	1.428	1.085	.448	.463
I'm sleeping	3.29	2.80	2.56	3.11	3.29	2.50
	.726	.961	1.094	.900	.488	.535
Get out in town with friends	2.14	2.63	2.81	2.22	1.00	1.50
	1.027	.999	1.377	1.060	.000	.926
Participate in recovery activities	3.86	2.90	3.62	2.33	2.29	1.75
	.663	1.494	1.025	1.188	.488	.886

I have a hobby (reading, listening to music, collecting stamps etc.)	3.00	3.30	3.88	3.33	3.86	3.50
	1.240	1.291	1.310	1.188	.900	.535
I have a hobby: I walk, go on trips, basically a sport	2.71	2.50	3.06	1.78	1.00	2.00
	1.541	1.253	1.181	.808	0.00	1.309

We wanted to see if the age levels of people with motor disabilities would give differences in leisure time for people with motor disabilities. We can see of Table no. 2 that all the variants analyzed had a significant significance threshold statistically ($p < 0.000$) with average correlations of the Phi coefficient ($\varphi = 0.55$, $\varphi = 0.64$, $\varphi = 0.66$), respectively ($\varphi = 0.79$, $\varphi = 0.75$, $\varphi = 0.74$). These results validate the second hypothesis, so variants of leisure time by people with motor disabilities are influenced by the age of the subjects (Table 3).

Table 3 . Chi Square Test between variants of free time and age of subjects

Crosstabs between subject age and: leisure options:	No. of valid answers	Value x^2	df	Asymp. Sig	Phi value
1. I watch the television	93	58.33	20	0,000	0.792
2 . I'm sleeping	93	28.17	15	0,020	0.550
3. I have a hobby (reading, listening to music, collecting stamps, etc.)	93	39.18	20	0,000	0.649
4 . Participate in recovery activities	93	53,00	20	0,000	0.755
5 . I have a hobby (I walk, go on trips, practice a sport)	93	41.56	20	0,000	0.668
6 . Go out in town with friends	93	51.62	20	0,000	0.745

The following Spearman correlations were recorded. Weak negative — between *I watch TV* and *I go out in town with friends* - .305 ** (p - 0.01), between *I go in town with friends* and *Sleeping*: - .304 ** (p - 0.01), between *Sleeping* and *I have a hobby (walk, go on trips, basically a sport*): - .331 ** (p - 0.01); weak positive — between *I watch TV* and *Sleeping*: .276 ** (p - 0.01); between *Participating in recovery activities* and *I have a hobby (I walk, go on trips, basically a sport)*: .222 * (p - 0.05); and, positive positives: between Ies in town with friends and A m a hobby (I walk, go on trips, basically a sport): .499 ** (p - 0.01) .

Conclusions

Both men and women prefer to practice in their leisure time, hobby activities such as: to read, listen to music, collect stamps or watch TV. Activities that do not like are for both categories of people the same: to practice a hobby, such as: walking, going on excursions, practicing a sport. Perhaps limiting the possibilities of movement makes them have this option. For women there is added a new activity that is declined: going out with friends with the city. For those with motor disabilities, younger ages (under 40) are associated with active leisure activities (going out in town with friends, going to recovery activities and practicing a hobby: walking, excursions, practicing a sport etc.), while older people (over 40 years of age) associated with passive activities (sleep, watching TV, I have a hobby like: reading, listening to music, collecting stamps, etc.). They capture positions for very young people under the age of 20, whom we find are pleased to sleep, to watch television, but also to take part in recovery or hobby: walking, excursions, practicing a sport. Perhaps illness, helplessness, comparison with covariates make the very young more passive. The most active are people with motor disabilities aged 31-40, followed by those aged 21-30 and then those under the age of 20. People with motor disabilities aged over 40 are more involved in passive activities. We conclude by saying that older age is associated with passive activities (sleep, watch TV, have a hobby like: reading, listening to music, collecting stamps, etc.).

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THEORETICAL APPROACH TO A RAPIDLY CHANGING SCHOOL - CRITICAL THEORIES

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Abstract: *In modern society, change is very fast and difficult to manage. Students should be prepared for present and future needs. Therefore, the school must change and adapt to modern needs, and the theoretical level of teachers should be raised to the level of critical analysis of possible and best solutions. The concept of school and work in it must be theoretically grounded. Which theory and which concept of teaching and school organization best suits modern needs? A well-didactically educated teacher will use several theories at the same time, depending on the nature of the material, set goals and tasks, so that there is no universal answer. In this paper, we will look at the importance of critical theories because they point out the importance of autonomy and self-determination of students, their emancipatory demands, critical attitude towards social reality, emphasizing solidarity draw attention to current problems in education. In practice, behavioral, cognitive, constructivist, humanistic theories of learning, etc. are also significantly blunted.*

Key words: *Learning theories; Critical-communicative theory; Constructivist theory.*

Introduction

In modern conditions, education is at the center of problems related to the development of both individuals and society. Such circumstances today require an answer to the question of what education should be in order to meet the challenges of the society in which we live. The ancient Latins had a saying - Tempora mutantur et nos mutantur in illis, ie. Times change and we change

in them. In this post-industrial time of accelerated changes in technology, technology, social relations, way of life, the speed of change is so great that it exceeds man's ability to assimilate them and get used to them. Today, a person has to master a large amount of information in a short time, but since there is too much information, he has to select that information, because his senses cannot accept all that. This means that we must not insist on the amount of information in schools, because the time has passed when it was required to acquire knowledge in school that will be sufficient for a lifetime.

The question is which theories and which conception of teaching and school organization best suits modern needs. There are many theories of learning, some of which different from each other in the principles they stand for and the goals they strive for. There are also very similar theories, so it is difficult to draw a difference between them. The question arises as to how the teacher decides when he is in front of the students, what theory to rely on in order for his teaching to be effective. There is no universal answer that would be valid in all situations. A well-didactically educated teacher will use several theories at the same time, depending on the nature of the material, set goals and tasks, the composition of students in the class, etc.

Critical-communicative theory

This theory arose in the first half of the last century from the Frankfurt philosophical circle, which was very critical of social reality and demanded that current values be re-evaluated and viewed from the perspective of an ideal, emancipated future. Klafki, Schulz and Winkel took the attribute critical (didactics) from the "Frankfurt". One of the most prominent representatives of this philosophical school, Jürgen Haber¬mas, assumes that interest is the key and highest source of knowledge, and there are three key interests; a) technical - the effort to dispose of objects, b) practical - the effort to maintain and strengthen communication between subjects and c) emancipatory - the desire to master the hermeneutic-spiritual knowledge, that the individual realizes himself as a person and that get rid of external determinism and move towards self-determination. He believes that there are three types of science: empirical-analytical, which start from technical interests and apply instrumental thinking for the purpose of social manipulation and control; historical and hermeneutic that popularize practical interests through values derived from communicative actions. In critical theory, the subject is a social being structured in a communication way so that it realizes its emancipatory attitudes through democratic debate (J. Habermas, 1988). The critical science of education (critical-communicative didactics) starts from Habermas' emancipatory interest and understands education as a communicative action and criticizes the existing reality in order to build a better future on that critique.

The main social problem, according to Habermas, is instrumental action that presses people with its powerful rationality. The agreement was pressured and suppressed by production, which turns the world of life into its raw material basis. In contrast to this instrumentalism, which has its roots in the world of work and for-profit business, stands communicativeness, which is the right way to communicate with great emancipatory potential. Thus, communicative activity should help to suppress the limitations of instrumentalism, to pull the subject out of that embrace, to gain freedom. Critical-communicative didactics relies on these ideas. Although R. Winkel is considered the founder of critical-communicative didactics, which is also called emancipatory, the initial idea comes from Klaus Molenhauer, who in his text Pedagogy and Rationality pointed out the situation and suggested that pedagogical action turn its back on dogmatism and focus on autonomy. The main goal of teaching and education should be self-determination and autonomy of students. Emancipation is necessary for that. He accepts Habermas's belief that these goals should be achieved through free communication, through discussion, and demands: that young people be educated for social change; to point out social weaknesses in education and to confront reality with possibilities; that pedagogy is based on rational criticism and does not yield to authorities and skeletal systems; to separate pedagogy by emancipation from metaphysics, relativistic systems and ruling political dictates (K. Molenhauer, 1966).

V. Schultz, who also accepted the critical-communicative theory, advocates intentional pedagogical interaction, criticizes society for unfair selection for leading positions, demands that the school problematize the existing restrictions on the free development of personality, to point out inequalities. Students, as members of society, should be agreed upon, not persuaded or coerced. He understands the interaction in the classroom as a dialogue between the actors, which should be ensured by a democratic approach of teachers. This is because all beings have the right to freedom and self-realization and that is why they should support each other. This would be possible if the ruling interest groups recognized the right of each individual to live in accordance with their views and enable free confrontation with the inhuman features of society. The emancipation of students is the liberation from the excessive power of teachers and their right to dispose of themselves. Schulz accepts the school's obligation to prepare students for social reproduction, but only with the obligation that they have the right to autonomy, self-determination and independent self-disposition. In addition, Schulz demands that autonomy be accompanied by solidarity, because autonomy without solidarity is in the service of particular interests. Competence, self-determination and solidarity are strongly connected in Schulz. The task of the

school is not only to mediate in the acquisition of knowledge, but also to help students to be autonomous and solidary personalities (V. Schultz, 1994)

In Germany, in the second half of the 20th century, theoretical didactic currents were very alive. There were several didactic directions within which sharp discussions and polemics were held about the goals, contents, organization of teaching, position of students, functions of teachers. We will concentrate in this section on critical-constructive didactics (founder V. Klafki) and critical-communicative didactics (founder R. Winkel). At the core of critical-constructive didactics is the principle of self-determination, solidarity and decision-making of students in accordance with their abilities. It is based on their maturity to represent their own views, to think critically, to communicate. The goal of teaching is to help students develop their abilities, to develop the potential for self-determination and solidarity, in which co-determination is important. Teaching and learning are understood as an interactional process, and learning is through discovery (with understanding). Students are participants in the planning of the teaching process, articulation of the lesson and synthesis of results. Teaching is an interactional process, and it is focused on the democratization of social relations, which is its most important goal (H. Blankerc, 1989).

The essence of critical-communicative didactics was explained by its founder, Rainer Winkel, who said that it was a theory of teaching and learning, that is. systematic, verifiable and useful analysis and planning of teaching and learning processes. It is a theory of school teaching and learning as a communication process, and its goal is to critically reflect on the existing reality and turn it into more demanding possibilities. Critical-communicative didactics is based on the critical science of education. It is critical because it does not accept the uncritically existing reality, but permanently strives to correct it, to translate it into given values. This didactics is also called communicative, which refers to two levels of meaning. Teaching is a communication process for which, as in any communication process, the following 11 axioms apply:

• permanence - we can't help but communicate,
• relationship - each communicated content establishes a certain relationship,
• specificity - in each communication the participants determine the roles in which they communicate at a given moment,
• economy - partners behave economically with regard to the risks and costs of communication,
• institution - communications tend to be established through official or semi-official institutionalization,
• expectations - in order to establish a social identity, expectations are included in all communications,

• rules and roles - communications are either more marked by the equality of partners or their diversity,
• contents and relations - every communication wants to communicate something in a certain way and it only emerges from the situational context whether the real "message" is a certain content or a certain relationship between communicators,
• control - all communications always contain (partially latent) instructions, advice, wishes, opinions, etc ..., by which the participants insure each other,
• interference - all human communication is in principle subject to interference that can go all the way to communicatively abnormal, sick behavior,
• means or own goal - communications have either a more instrumental or more consumptive character, and are ultimately more a means to an end (eg information, lessons) or are an end in themselves (say in entertaining storytelling) (V. Klafki et al., 1994).

According to R. Winkel (1994), critical-communicative didactics is the only didactic theory that firmly connects analysis and planning so that external norms become superfluous, because instead planning grows out of analysis, and this in turn enables better planning. This didactics is aimed at the student. The entire class community, both students and teachers, act as equal participants in the process of teaching communication. The instrumental-subjectivist evaluation is rejected in order to focus the achieved results in learning on the improvement of human conditions. This didactics relies on the critical theory of school and upbringing, and understands teaching and learning as solidary acts of human emancipation, ie. as liberation from ignorance and wrong knowledge, from inhuman life, bearing in mind as a goal the constant democratization and humanization of social practice (Klafki, Winkel, 1994).

Winkel does not accept that external demands are imposed on schools, so, in accordance with that, he adopts Schaler's assessment that student success is instrumentalized and that it serves qualification and selection, career needs and competition. Winkel further says that learning should not be left only to economic interests, that the school should focus not only on the contents but also on the relations in the classroom, the relations between society and students, on social behavior (Koenig and Zedler, 2001).

The structure of R. Winkel's critical-communicative didactics can be imagined in pyramidally placed levels. The first and broadest level is axiological. It is intended for the analysis of existing social norms, institutions, values that the school as a more important social institution is obliged to mediate. Operating with such notions as "fundamental values", "existing values of our society", "values that young people should strive for", "contradictory views and personal experience", R. Winkel determines the totality of worldviews, ideas that are at the base of the pyramid. At the same time, he emphasizes that in the

critical attitude of these institutions and the needs of the student's personality, the necessity of self-development can be seen starting from the existing and going towards what can be achieved in relation to others. The second level consists of processes arising from school activity. Within the framework of didactic projections that make up the basic content of that level, the question of how to concretize the goals and values from the first novelty in a specific school practice should be considered and resolved. He advocates the inculturation of every student. On the one hand, the student is focused on his interests and needs determined by socio-cultural, age and other factors that the school as a social institution does not respect enough but turns more to official programs, norms and standards. Such a position, according to Winkel, reduces the real goal of learning to addiction. On the contrary, at the same level, he points out that attention should be paid to the basic values that students should adopt, to democratization and humanization. The school is assessed as a shaping environment that enables the future citizen, not only on a reproductive level, to adopt the value system of a democratic society, but also to initiate motivational mechanisms for improving future life practice. That level is marked by the expression school - possibility.

At the third level in the structure of critical-communicative didactics, attention is focused on the problem of planning the learning process, which is subordinated to the goal of forming a democratic personality, which should be achieved in stages, step by step. Winkel points out that it is a complex process of didactic organization to achieve this goal and agrees to pay attention to the structural solution of planning proposed by V. Klafki and further developed by Lencen with a critical approach to their approach. From the critical analysis, the concept of stage planning can be developed, which, step by step, follows the real realization of emancipation through numerous educational goals.

The top of the pyramid comes as a consequence of the previous steps and should lead to the goal - adoption of a solution - careful participation - asymmetric reaction - symmetrical action. This is realized on the basis of the analysis of the sample, which starts from the content, the peculiarities of the relationship between students and teachers, the share of factors that make communication difficult, as well as the nature of switching (replacement). Starting from the hierarchical scheme of the relationship between the structural elements of critical-communicative didactics, Winkel gives a vector that determines the development of this theory.

The model of critical-communicative didactics was created on the logic of antinomies. At each level of the proposed model, they are consolidated and strengthened in the form of the author's term contradictions, inconsistencies, inharmoniousness in pedagogical theory and practice. The overall structure of Winkel's model reflects the strained relations in social

critique and the attempt to establish didactics in the context of the idea of emancipation.

Winkel criticized the theory of education and the theory of teaching that they neglect disturbed, contradictory and hidden teaching processes, and that they are far from everyday school life. He rebuked curriculum theory and cybernetic-information didactic theory for unscrupulously neglecting critical-emancipatory moments and for openly advocating manipulative techniques. Christina Meller, a supporter of behaviorism, emphasized that, unlike her concept, critical-communicative didactics is about such learning in which students themselves determine and co-decide (Klafki, Winkel et al., 1994).

But even his theory did not pass without criticism. T. Grames reproaches her for not becoming really stimulating for the development of the structural components of the communicative didactic conception. He advocates a variant that he calls the subject communicative didactics. He believes that Winkel's approach is too abstract, which was present even in the constructions of Schaefer and Schaler, who insufficiently and unsystematically tested their ideas in practice. Grames relies on data from B. Benikovski's research and focuses on the analysis of communicative acts observed in real pedagogical practice in school. Communication in the educational process does not flow linearly and one-way, students cannot focus their attention on a topic for a long time, the realization is accompanied by many obstacles, exchange of opinions and many unplanned aspects of the problem. In communicative didactics this is neglected. In class, the teacher is obliged to "on the go" situationally and alternatively plan in order to eliminate obstacles and direct students to productive adoption of the exhibited material. Grames also criticizes communicative didactics for the fact that in the thematization of "subject-object relations" it tendentiously bypasses the time factor that objectively exists in the learning process (T. Grames, 1998).

We believe that the components that exist in classical didactics are not sufficiently specified in communicative didactic theory. The corresponding structural components of the communicative act presented by the traditional sender - information - channel - receiver scheme are also not specified, although there is an indirect relationship between structural data. This suggests that theorists of communicative didactics have not yet fully fulfilled the problem field of their subject. Communicative didactics is connected with the requirements of specific attributes and the tendency to put them in the foundation of the theory, which is a characteristic of all branches of the German humanities.

Critical-communicative theory, by pointing out the importance of autonomy and self-determination of students, its emancipatory demands, critical attitude towards social reality, emphasizing solidarity, drew attention to current problems in education and thus made a significant contribution to

the humanization of educational work. However, teachers must keep in mind that one didactic theory, no matter how comprehensive, cannot solve all teaching problems. For effective teaching, it is necessary to apply elements of different theories, taking into account the goals, nature of the content and the possibilities of students.

Constructivist learning theory

Constructivism as a didactic direction originated within cognitive psychology, which starts from the fact that man is not a passive object and a mere recipient of environmental influences, but an actor, a subject who actively relates to the environment and himself, who receives, seeks and selects information, processes it and transforms into new semantic units, retains them and uses them as a basis in choosing and shaping one's own actions (Potkonjak and Šimleša, 1989). The authors generally agree that cognitive approaches to learning (dating from the first half of the 20th century) are based on the theory of the development of cognitive schemes or thought structures that represent certain external or internal phenomena or processes.

Constructivism in learning cannot be attributed to one author because constructivist theory is based on the postulates of several of them - John Dewey, Jean Piaget, Leo Vigostky, Jerome Bruner and others. Dewey demanded that children acquire knowledge through independent thought activity, and not that it be served to them in a ready-made form. The children's experience and self-help, which Dewey insisted on, play a big role in that. He advocated the application of constructivist procedures because he believed that students should construct knowledge. Learning is a mental activity in which the student constantly evaluates his experiences and based on that sets or changes his own goals. The social environment has a stimulating effect on education because an individual will learn if social conditions stimulate him to do so (J. Dewey, 1966).

Piege's initial position is that the most important participation of students is necessary in the learning process. Knowledge cannot be passed from mouth to mouth. It must be constructed by the student himself. In order to know the world, a student must act on an object because that action helps him to know objects. Piaget talks about the readiness to learn and emphasizes that a child cannot learn something new if he has not reached the required level of maturity, because children at a certain stage of development cannot master concepts that require a higher level of knowledge. According to Ž. Piaget, a consequence of acquiring new schemes or adapting existing schemes to new needs. Assimilation is the process of turning experience into internal representations and new schemes that are shaped to fit existing knowledge. Accommodation is the process of adapting and changing existing schemes in order to accept a new experience (J. Piaget, 1983). This double process of

accommodation allows the student to form a thought structure. Balance enables a person to find a balance between himself and the environment. After a new event, the student's cognitive balance is disturbed to the extent that he is not able to assimilate and adapt new information until he establishes the necessary balance. There are many types of balance between assimilation and accommodation, depending on the new development, depending on the problem to be solved. For Piaget, cognitive balance is a key factor in explaining why some children are clearer than others.

In the philosophy of education, Piaget attaches great importance to the curriculum in the center of which the student is located. Programmed learning does not agree with his ideas because he demanded that the main attention be paid to creating an environment suitable for learning in which to actively explore. Programmed learning with a strict procedure and repetitions is not a favorable environment for active research. Opinion is intensified by the application of assimilation and accommodation, but therefore pedagogical situations should be planned to have both assimilation and accommodation potential. Students should be enabled to research, manage, experiment, ask questions, and seek answers. This does not mean that students should be allowed to do what they want. The teacher is obliged to present the material to them, to create a situation and an opportunity for research. Piaget says that to understand this means to discover or reconstruct with the help of feedback, and these conditions must be considered if the formation of individuals capable of creativity is desired, and not simply repetition.

The constructivist theory of learning also incorporates the ideas of LS Vygotsky, one of the most important psychologists from the first decades of the 20th century. He started from the fact that man's mental activity is socio-historically determined and that there are two types of such activities - external (man physically acts on external objects) and internal (imaginary images that replace real objects), where external are dependent on because they were previously invented by man. The word is a mediator between the acting subject and the object on which he acts. It has a double role - for the subject to mark the object with it and to ascribe the appropriate meaning to the objects. Teaching is a psychological process of student transformation and is determined more by the mediated content than by the degree of student development and it can accelerate student development. Vygotsky distinguished everyday (spontaneous) from scientific concepts, with the latter coming after the former, when children are more mature. He disputed Piaget's claim that only spontaneous notions are a feature of children's thinking, because a child mentally processes not only spontaneous but also scientific notions that he acquired under the influence of the elders. In teaching, as an important factor in the progressive socialization of the child, scientific concepts are acquired which are also a feature of the child's opinion. It is

important that teachers know the process of children's thinking, because scientific concepts are created through thoughts. He did not accept Piaget's claim that a child's thinking goes through certain developmental stages, regardless of whether the child is trained or not, because he believed that a child's mental development should be evaluated not by what he knows but by what he thinks in an area unknown to him. . The most important zone for learning is the next development, the category that Vygotsky introduced into developmental psychology. He claims that the child's mental development should not be inferred from what has already matured in him, not only from the already formed mental functions, but also from those that are still in development. It is a zone of further development. That is why teachers should give students such tasks that provoke the zone of further development in order to accelerate their intellectual progress. In that mental effort, the student develops, and the teacher should guide him and help him minimally. Giving such tasks, which are only at the level of the student's already achieved development, does not encourage mental progress (L. Vygotsky, 1977).

A significant contribution to the constructivist theory of learning was made by J. Bruner who did not accept the position of Ž. Piaget said that mental development depends only on biological age, but, like Vygotsky, he believed that the influence of the social environment on the development of an individual is great and that it can accelerate but also slow it down. He developed a concept of three ways of presentation that each individual goes through: action (preschool child reduces his activity to actions and movements, a little story and a little imagination), iconic (thinking in pictures) and symbolic (hierarchical concepts). He believed that the structure of knowledge and the logical arrangement of information by thematic units is important in teaching. The teacher should not serve the students with ready-made knowledge, but instruct the students to master it independently, because the real learning is the construction of knowledge. It is best learned through interaction (Radulović et al., 2016; Radulović & Stojanović, 2019; Trivić et al., 2019). While learning, new ideas are born to the student, which he tries to fit into already existing knowledge and experiences, thus enriching them (Jovanović et al., 2017). He builds new ones on the already existing knowledge, creating logical connections between them. Thus he expands and reorganizes the existing thought structure (J. Bruner, 1976).

M. Mušanović states that J. G. Brooks and M. G. Brooks tabulated traditional and constructivist departments. There were differences in all elements of the teaching process in understanding the program and its implementation, sources of knowledge, teacher's approach and style of work, requirements for students, assessment and social relations.

Table 1. Constructivist teaching according to Mušanović, (2005).

Traditional departments	Constructivist departments
The program is a presented part of the unit with an emphasis on basic skills	The program is a whole part of the program, and the emphasis is on the most important concepts
Strict adherence to the prescribed program is highly valued	Asking questions is highly valued
Program activities rely heavily on existing textbooks and manuals	Program activities rely heavily on primary sources of knowledge and manipulative teaching aids
The student is perceived as an "unwritten board" on which the teacher imprints information	The student is seen as a person who thinks and creates his own concepts of the world
The teacher teaches by passing information to students	The teacher has an interactive work style and creates an environment conducive to work for students
The teacher requires the correct answer to assess the student's knowledge	The teacher asks the student to say what he thinks about the topic in the continuity of the student's current conceptions that he uses to process the lesson.
Checking and assessment is seen as a separate part of teaching and is always performed by testing	Checking the progress of students is built into the course of learning and is always achieved by observing the student's activities, exhibitions and works
The student usually works alone	Students primarily work in groups

The principle of significance of the topic. The teacher asks questions for reflection. Student responses provoke new questions and new considerations. Reasoning students actively adjust their knowledge and views to these logically constructed questions. In the process, they can make mistakes, go the wrong way, come back, and start over. They express the scientific determination of meaning in their personal terms. In a loud exchange of thoughts, they correct, regulate, enrich, and create a new structure of knowledge.

Comprehensive scheme of knowledge structure. The structure of knowledge in constructivist learning is presented in a complete scheme. Each studied knowledge structure contains the previous structure and affects the

new knowledge structure. For example, if a number is studied in a language, then the integrity scheme will be set so that the number is in the middle, with the previous knowledge on the left - adjectives, nouns, and the next on the right - pronouns, verbs and adverbs. The result will be: nouns, adjectives, numbers, pronouns, verbs, adverbs. In this complete scheme, number is studied in depth in connection with nouns, adjectives, pronouns and verbs in the system of language integrity. In order to properly structure knowledge in constructivist learning, the teacher is obliged to master a complete view of the content of his subject.

Logical structures of knowledge. Starting from Piaget's logic of wholeness, it is possible to determine the following logical connections, relations and interdependencies among the structures of knowledge.

Harmonization of the knowledge structure (two knowledge structures are harmonized by general relations, unite and form a new knowledge structure). Inverted structures (united by the general relations of the structure, knowledge is reversed and transformed). Associative structures (opinion always preserves the ability to eliminate and find other variants for the solution. The result obtained in different ways is always the same). Annulment structures (the structure of knowledge is annulled, disappears, changes if multiplied by zero). Identical structures (two identical structures can be combined into one complex structure). Logical structures of knowledge are indispensable parts of constructivist learning.

Logical thought operations. When analyzing tasks in the traditional way of learning, it can be seen that the largest part is included in the exercises, ie. in repeated activities for adoption. These tasks are fulfilled within one or two knowledge structures and are focused on a certain level of knowledge, skills and habits. In constructivist learning, in addition to these structures of knowledge, operations of logical thinking are realized. These operations allow students to group knowledge structures, to explain their reciprocity and relationships, to classify them, to enrich them, or to replace them with other structures. By thinking about the structures of knowledge, the student builds the structures of his opinion and the logical structures of his knowledge. Logical knowledge structures are built as a team or with the help of teachers. The classification operation enables students to acquire the intellectual habits of breaking the plural into subgroups according to certain characteristics. Teams and procedures in conducting this operation on knowledge structures can be as follows: classify according to characteristics, make a difference by characteristics and draw a conclusion, throw out the superfluous, checking.

Serial operation. By carrying out the logical operation of serialization in the structures of student knowledge, intellectual habits of grouping knowledge structures and uniting them according to certain characteristics or only one characteristic are formed.

Replacement operation. With this operation, one structure is replaced by another (for example, in mathematics, the number is replaced by the letters 6+7=a+b). It is the most basic logical operation in knowledge structures and an intellectually important habit by which knowledge is reshaped. It destroys the vertical structure of knowledge and helps students to mentally transfer them to a horizontal structure. By conducting this operation in knowledge structures, students enrich their existing knowledge with new knowledge structures and transform it into new knowledge. The request for this operation can be: when you perform an action, replace the numbers with the letter expression, what happened. Multiplicative operations. This operation is performed simultaneously on several knowledge structures that have general characteristics or connections (for example, in linguistic knowledge these are changes of some parts of words - by cases, by numbers. The tasks in this operation are: change suffixes; combine, compare, argue, set, write appropriate).

Conclusion

In our social reality, the issue of educational goals is becoming increasingly relevant due to rapid social change. This raises the question of how to define the concept of education in order to meet the new needs and requirements of the society in which we live. Studies show that each theory has certain positive features, but also corresponding shortcomings. Not all theories are equally in line with the demands and needs of society. Thus, it can be concluded that ideas for application cannot be sought in one theory alone.

The significance of critical theory in education is that it has led to positive trends in this area by insisting on new relations between society and school, between teachers and students, demands to approach the student as an autonomous person, proposals to focus more on development in school students' personalities, and less on the memory of the content. Also, these theories indicate the importance of students' self-determination, their emancipatory demands, critical attitude towards social reality, emphasizing solidarity, drew attention to current problems in education and thus made a significant contribution to the humanization of educational work.

By studying critical theories, we want to raise the level of education of students in order to come to the conclusion that: critical thinking, encourages the development of self-confidence, develops creativity, develops the ability to solve problems and lifelong learning, etc. In didactic practice, preference is given to heuristic methods, research in nature, problem situations and the like.

Acknowledgements

The work was created within the Teacher Education Faculty, University of Belgrade, project titled "The concept and strategy of providing quality basic

education" (179020), funded by the Ministry of Education and Science of the Republic of Serbia.

Statement
The authors have equally contributed to the paper.

Conflict of interest
We declare there is not conflict of interest between authors.

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BIOLOGY TEACHERS LEVEL OF UTILIZATION AND AWARENESS OF INNOVATIVE TEACHING STRATEGIES IN THE TEACHING AND LEARNING OF BIOLOGY IN SECONDARY SCHOOLS

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Abstract: *This study investigated biology teachers' level of awareness and utilization of innovative teaching strategies in the teaching and learning of biology in secondary schools in Anambra state, Nigeria. A descriptive survey research design was used. The sample for the study is 150 biology teachers from 75 co educational school. The instrument used was developed by the researchers known as Teacher's Awareness and Utilization of Innovative Teaching Strategy Scale (TAUITSS) which was scrutinized by three experts from Department of Science Education one from Nwafor Orizu College of Education Nsugbe, another from Federal College of Education (Technical) Umunze and Nnamdi Azikiwe University Awka. The questionnaires were distributed by the researchers. Mean were used to answer the research question while t-test was used to test the hypotheses involving two mean, ANOVA was used to test the hypotheses involving more than two mean. The findings shows that there is no significant difference between the mean ratings of teachers on the awareness of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on gender, there is a significant difference between the mean ratings of teachers on the awareness of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on academic qualification and there is no significant difference between the mean ratings of teachers on the extent of utilization of innovative teaching strategy that can be used in the teaching of Biology in secondary*

schools based on gender. The last hypothesis showed that there is no significant difference between the mean ratings of teachers on the extent of utilization of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on academic qualification. Base on the findings, these recommendations were made, in order to improve the performance of students in Biology, teachers should consider using the innovative teaching strategies and this should as well be implemented in other levels where Biology is taught if performance in biology exams is to be improved and school administrators should be encouraged to improve on management of academic programmes by providing necessary innovative tools required for instructional purposes.

Keywords: *Biology; Awareness; Utilization; Innovative and Teaching Strategies*

Introduction

Teachers are at the frontiers of any educational activity and they go a long way in acquiring the necessary knowledge needed to impart their students Aniekwu (2018). These teachers are the once being trained in various disciplines so as to enhance their teaching skills in their respective subjects which includes; Biology, Chemistry, Physics among others. In the course of this training, various measures are being put in place so as to reduce the burden associated with teaching and also enhance easy understanding of the subjects. Part of those measures is innovative teaching strategies which have emerged as a result of research and development, hence when utilized by teachers, may tends to give the desired educational result (Aniekwu, 2018).

This educational result contributes to the main aim of education which is not only to make students literate but to also improve their knowledge, build self-confidence and their ability to think rationally for the benefit of the society Saraki (2015). For a society to grow and make progress, education is the tool they need because it is not only to imparts knowledge, skill and right types of values but also builds human capital which begets, drives and sets technological innovation and economic goals in motion for a nation Obidume (2011). Okoye (2012) asserted that many advances in science and technology have helped nations to promote efficiency, self-reliance and the overall well-being of humanity through inventions/innovations in sectors such as health, agriculture, transportation, telecommunication, mining etc. That is one of the

reason education in Nigeria is one major sector the government always put in yearly budget (Obidume, 2011)

In Nigeria the National policy on Education (FRN, 2004) clearly spells out the objectives of science teaching from pre-primary to tertiary levels. Laying more emphasis on the secondary level, it entails equipping students to live effectively in our modern age of science and technology. Since science is a process that aids development of the society, the global change in science curriculum arising from knowledge explosion in science and technology development demands a qualitative teaching.

There is no gainsaying that education today faces several gaps, which only can be addressed through a relevant and befitting teaching strategy; some of the gaps created in our educational system as a result of technology include: The world that young people experience outside the classroom and the world within, the skills students learn in school and those they will need later in life, those who have access to high quality education and tools and those who do not. All are geared towards teaching strategy (Saraki, 2015).

Teaching strategy according to Nwokoye (2012) is a designed interaction carried out in the classroom which could be carefully and systematically followed to teach a concept, topic or an idea. There are many strategies which when utilized by teachers may improve student's understanding, thus creates an innovative teaching and learning in secondary schools. An innovative strategy is referred to as a design that is full of new or purposively reconstructed existing ideas, methods and equipment or to combine various teaching strategies to develop a new one (Gbadamosi, 2013).In science education, innovation is greatly needed in order to foster greater scientific literacy. Innovation is a deliberate, systematic, novel, specific and persistent change in the system of a particular society which is aimed at improving the system or creating a new one for a more effective and efficient means of attending to the educational needs of the social group in their social environment (David, 2018).

The innovative strategies are as follows: Inquiry-Based learning (IBL), Quick Response Codes(QRC), Project-Based Learning (PBL),Wisely Managed Classroom Technology (WMCT), Jigsaws Strategy (JS), Computer Assisted Instruction (CAI), Ethno-Science Instruction (EI), Computer Supported Collaboration (CSC), Multimedia Integrated Instruction (MII) and Projected Video Packaged Instruction (PVPI) among others. Many of these strategies take students to levels of learning they never thought possible when properly used by the teacher. Sometimes it appears impossible to fully utilize these innovative strategies due to poor orientation on the side of teachers, lack of facilities in schools, government policies. But generally the benefits are quirt

enormous which has been a good one for development of any nation if well managed in a classroom setting may bring about the best out of the knowledge with the use of technology (Davis, 2017).

Wisely Managed Classroom Technology has to do with looking in to the use of various technology gadgets owned by the students. Many schools have become one-to-one schools where each student has his or her own technology item (tablet or computer) to work with each day. There is a delicate balance with technology use in the classroom. For this reason, teachers must use technology in a wisely managed way and with a variety of activities (Owen, 2013). Several activities that lead to student engagement are Google Docs, YouTube, videos, among others. These innovative apps and websites can help teachers engage their students, remind them about upcoming assignments and homework, provide visual learning through videos, organize student learning, provide group collaboration and provide check-ups on learning through games and online quizzes especially when it has to do with multimedia integrated instruction (Owen 2013).

Multimedia integrated Instruction is the use of multimedia applications which is any application that uses a collection of multiple media sources e.g. text, graphics, images, sound/audio, animation and/or video in the process of teaching and learning (Nweke, 2010). It involves delivering lesson contents with planned instructions that involve exposing students to multimedia information. In this type of instruction, the teacher uses a combination of text, graphics, simulations, animations, and videos, projected on a slide or board in the teaching process. In this study, multimedia integrated instructions involved the teacher projecting graphics, animated text of lesson contents, pictures, and simulation videos explaining the contents on a slide or board in the course instruction especially in teaching of subject like Biology.

It is the duty of the Biology teacher to gain mastery of these instructional strategies so as to be able to use it in teaching and learning process. Therefore a teacher who is not aware of the variety of such instruction innovational strategies can neither attempt nor utilized them accurately (Udeani & Okafor 2012). According to Okpala, Amobi and Uche (2022) utilization of an innovation in education means to take up or accept an innovation and make use of it in the educational sector. It simply means having new creative ideas implemented. This is necessary because a healthy system should tend towards inventing new procedures, move towards new goals, produce new kind of products, diversify itself and become more rather than less differentiated over a period of time. In Biology, like any other science subject, innovation can be in using new teaching methods addition of new ideas in the curriculum

content, learning experience, and introducing new/modern instructional material as well as adopting a new change in evaluating the outcomes of Biology teaching (David, 2018). Using Innovative strategies in teaching Biology may be the introduction of new ideas and methods accompanied by an equally new change in the style of evaluating the outcomes of biology learning (James 2011).

Innovative strategies in Biology were borne as a result of the fact that different situations, topics to be taught, learners' cognitive readiness, concept being taught, skills intended to be developed in learners, demand a different approach. Researches have shown some factors that hinder effective utilization of innovative teaching strategies. They include; insufficiency of intellectual efforts in finding ways to improve educational activity efficiency, predominance of the desire to use the products of someone else's innovation over developing their own abilities and creating original educational products, lack of initiative (Iwegne, 2014). The author further asserted that in teaching ecology in senior secondary one the factors that hinders teaching included inadequate professional development and lack of computer facilities. According to Eze (2017) state that staying up to date, widespread access equipment had a strong degree of mitigating on the problem that he encounted during a study on the factors that affect the utilization of inquiry base strategy on the academic achievement of Biology student on the concept of genetics. All these hindrances may lead to unawareness of educational policies especially in teaching and learning subject like Biology (Nadezhda, 2019).

Olumorin, (2010) asserted that awareness of educational policies usually forms the backbone of the utilization and productivity level of any educational programme. He further stated that it is when an individual is aware of the principles and content policy that such an individual can cultivate the right type of attitude that will result in improved productivity and performance through awareness. Therefore, teachers' awareness of the innovative strategies is a decision on the utilization of the innovative strategies which is based on the teacher's knowledge on the existence of the innovative strategies. Some researchers have suggested level of awareness and utilization of innovative teaching strategies in teaching some science subjects. According to Olagunju and Abiona (2013) male teachers‟ perception of utilization of instructional materials in teaching is higher than that of the female teachers. Jone and Dindia (2014) reveal male and female teachers have no significance differences in level of awareness and utilization of innovative teaching in Mathematics. Oludipe (2010) noted that students taught with innovative teaching strategy like inquiry base performed better than those without it at Ijebu Ode local government of Ogun state. Nwagbo and Obiekwe (2010)

reveal that experimental group which was exposed to wisely managed classroom Technology for a period of four weeks while the control group which was exposed to traditional teaching method that the result revealed that wisely managed classroom technology was more effective in facilitating students' achievement in ecological concept than traditional method. Also, Jone, Dinda and Oludipe (2010) reported that the students taught using jigsaw does not perform better than those taught using normal lecture method. Could these researchers point of view in innovative teaching strategies be the reason of declining nature of students' performance in Biology in WAEC following the report of Chief examiners' report?

According to WAEC Chief Examiner report 2009-2018, students performed poorly in Biology compare to other science subjects such as Chemistry and Physics. This may be likely connected to poor embracing of innovative teaching strategies in teaching the subject (Iwegne 2014). This is what prompted this study to investigate the Biology teachers' level of utilization and awareness of innovative teaching strategies in the teaching and learning of Biology in secondary schools in Anambra state.

Brain- Base Learning Theory is a learning strategy that is based on the structure and function of the human brain. Brain -Based Learning Strategy is a combination of several planned action designed to enhance students' and teachers ability to process and integrate information in meaningful ways through use of innovations, under a threat-free atmosphere. It emphasizes meaningful learning instead of memorization or rote learning and gives teachers that free hand in utilization and awareness of said innovative strategy. The findings of neuroscience and psychology provide us with many opportunities of brain compatible implications for classrooms (Achor & Gbadamosi 2020). BBLS involves learners acquiring knowledge and teachers acquired knowledge while applying a strategy that depends on how the brain functions. It involves a strategy that utilizes learners' cognitive endowments. Understanding how the brain learns and relating it to the educational field resulted in this concept known as brain-based learning. The strategy has to do with how the brain learns, assimilates, relate, thinks, associate and remember in a threat-free but in highly challenged environment like during the total lockdown in Nigeria during the first wave of COVID- 19 in which innovative teaching like use of e-learning to teach Chemistry, Biology and other related science subject to avoid physical contact of individual during the period (Obikezie, Abumchukwu & Eke , 2020) .

Purpose of the Study

The main purpose of the study is to ascertain the Biology teachers' level of utilization and awareness of innovative strategies in secondary schools. Specifically, the study sought to:

1. Determine the level of secondary school Biology teachers' awareness of the innovative teaching strategies;
2. Determine the level of secondary school Biology teachers' utilization of the innovative teaching strategies in their teaching;
3. Examine the factors that could hinder the effective utilization of the innovative teaching strategies in the teaching of Biology in secondary schools;
4. Proffer solution to the problems surrounding the effective utilization of the innovative teaching strategies;

Research questions

The following research question guided the study:

1. To what extent are Biology teachers aware of the innovative teaching strategies that can be used to teach biology in secondary schools?
2. To what extent do Biology teachers utilize the known innovative teaching strategies that can be used to teach Biology in secondary schools?
3. What are the factors that hinder the effective utilization of the innovative teaching strategies in the teaching of Biology in secondary schools?
4. What are solutions to the problems surrounding the effective utilization of the innovative teaching strategies in the teaching of Biology in secondary schools?

Research Method

The design adopted for the study was descriptive survey. It is one of the most reliable methods and the design that is appropriate for a large population. It is also a type that can be used to make selection of a relatively large sample of people from a pre-determined population for ease in data collection which serves as the basis on which the researcher makes inference about the wider population. The design is appropriate for the study because the findings of the study can be generalized using the sample which is representative of the entire population. The study was carried out in Anambra state which is made up of six education zones. The state has six education zones namely, Aguata, Awka, Nnewi, Onitsha, Ogidi and Otuocha with 256 public secondary schools. One hundred and fifty (150) Biology teachers were used in the study. Using purposive sampling method, 75 co educational schools were sampled. The rationale behind the sampling was to ensure greater coverage of all the education zones in Anambra state and because there are not too many Biology teachers. The instruments developed for the study was on Teacher's Awareness and utilization of Innovative Teaching Strategy Scale (TAUITSS) which was used to assess the level of teacher's awareness and use of innovative teaching strategies in secondary schools in Anambra state and was validated by three expects One from Nwafor Orizu College of Education Nsugbe, one from Faculty of education Nnnamdi Azikiwe University Awka and one from Federal college of Education (Technical) Umunze with reliabity of 0.78 using Cronbach Alpha. TAUITSS was composed four sections:

namely sections A, B, C, D and E. Section A were designed to generate demographic information while section B and C elicited information on Biology teachers' awareness and use of innovative teaching strategies respectively. Section B was designed on a four point scale of Very much Aware (VMA), Much Aware (MA), Aware (A), and Not Aware (NA) Section C was designed also on a four point scale of Very Often (VO), Often (O), Rarely (R) and Very Rarely (VR).Sections D and E determined the challenges surrounding the use of innovation teaching strategies and the solutions to the challenges respectively. Both sections D and E are designed on a four scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) all in grade point of 4, 3, 2 and 1. The data obtained from the respondents were analyzed using the mean and standard deviation for research questions. The decision of acceptance or rejection of the items in the questionnaire based on items means which are above the grand mean of 2.5.

Results

Research Question 1: To what extent are Biology teachers aware of the innovative teaching strategies that can be used to teach Biology in secondary schools?

Table 1Biology Teachers' Extent of Awareness of Innovative Teaching Strategies

S/N	**Innovative Strategies**	$\bar{x}$	**SD**	**Remarks**
1.	Inquiry-Based Learning (IBL)	3.40	1.86	Aware
2.	Quick Responses Codes (QRC)	1.84	1.01	Not Aware
3.	Project –Based Learning (PBL)	2.96	1.50	Aware
4.	Wisely Managed Classroom Technology(WMCT)	2.28	1.10	Not Aware
5.	Jigsaws Strategy (JS)	3.36	1.46	Aware
6.	Computer Assisted Instruction (CAI)	3.29	1.11	Aware
7.	Ethno-Science Instruction (EI)	2.06	0.94	Not Aware
8.	Computer Supported Collaboration (CSC)	2.41	0.88	Not Aware
9.	Multimedia Integrated Instruction (MII)	1.00	0.34	Not Aware
10.	Projected Video Packaged Instruction (PVPI)	2.81	1.22	Aware
Grand Mean		**2.54**		

Cut-Off mean = 2.50

Table 1 show that the mean of items 1, 3, 5, 6 and 10 are above the cut-off mean of 2.50. Thus, Biology teachers are aware of such innovative teaching

strategies as inquiry-based learning, project-based learning, jigsaw strategy; computer assisted instruction (CAI) and projected video packaged instruction. The grand mean of 2.54 shows that secondary school teachers of Biology are cognizant of innovative teaching strategies to a much aware extent.

Research Question 2: To what extent do Biology teachers utilize the known innovative teaching strategies that can be used to teach Biology in secondary schools?

Table 2: Biology Teachers Extent of Utilization of Innovative Teaching Strategies

S/N	**Innovative Strategies**	$\bar{\times}$	**SD**	**Remarks**
1.	Inquiry-Based Learning (IBL)	1.35	0.63	Very rare
2.	Project –Based Learning (PBL)	3.61	1.13	Often
3.	Jigsaws Strategy (JS)	2.55	1.33	Rare
4.	Computer Assisted Instruction (CAI)	1.05	1.18	Very rare
5.	Projected Video Packaged Instruction (PVPI)	1.21	1.39	Rare
Grand Mean		**1.95**		

Table 2 shows that Biology teachers utilize inquiry-based learning to a very rare extent, project-based learning often, jigsaw strategy rarely, computer assisted instruction to a very rare extent and projected video packaged instruction to a rare extent. The grand mean of 1.95 shows that secondary school Biology teachers utilize innovative teaching strategies to a very rare extent.

Research Question 3: What are the factors that hinder the effective utilization of the innovative teaching strategies in the teaching of Biology in secondary schools?

Table 3: Factors that Hinder the Effective Utilization of the Innovative Teaching Strategies

S/N	**Item**	$\bar{\times}$	**SD**	**Decision**
1.	Poor and inadequate computer accessibility	2.60	1.15	Accept
2.	Inadequate professional development and training	2.82	1.00	Accept
3.	Teachers attitudes and beliefs	1.80	1.53	Not Accepted
4	Duration of biology lesson	3.35	1.44	Accept
5	Lack of instructional resources	3.73	1.31	Accept

Cut-Off mean = 2.50

Table 3 reveals the responses of teachers on the factors that hinder the effective utilization of innovative teaching strategies. From the table it was discovered that the mean of items 1, 2, 4 and 5 are above the cut-off mean of 2.5. Thus, Biology teachers accept that the factors affecting the utilization of innovative teaching strategies include: poor and inadequate computer accessibility, inadequate professional development and training, duration of Biology lesson and lack of instructional resources.

Research Question 4: What are solutions to the problems surrounding the effective utilization of the innovative teaching strategies in the teaching of Biology in secondary schools?

Table 4: Solutions to the Problems Surrounding the Effective Utilization of the Innovative Teaching Strategies

S/N	Items	$\bar{x}$	SD	Decision
1.	Wide spread access to equipment	3.10	0.50	Accept
2.	Stay up-to-date Ability	3.45	1.31	Accept
3.	Teachers confidence in the skills	3.47	1.46	Accept
4.	Technical support	3.35	1.44	Accept
5.	Provision of instructional resources	3.73	1.31	Accept

Cut-Off mean = 2.50

Table 4 revealed responses of Biology teachers on the solutions to the problems surrounding the effective utilization of the innovative teaching strategies and it shows that the mean of items 1 to 5 are above the cut-off mean of 2.5. Thus, agree that the solutions to the problems surrounding the effective utilization of innovative teaching strategies include: wide spread access to equipment, staying up-to-date ability, teachers' confidence in the skills, technical support and provision of instructional resources.

Discussions

The findings of the study are discussed thematically under the following sub-headings:

Awareness Level of Innovative Teaching Strategies (ITS)

From the findings on table 1, it was revealed that secondary school Biology teachers are much aware of innovative teaching strategies. Biology teachers were aware of such innovative teaching strategies as inquiry-based learning, project-based learning, jigsaw strategy; computer assisted instruction (CAI) and projected video packaged instruction. This finding is inline with the work done by Obikezie, Abumchukwu and Eke (2020) reveal that 80.5% of the

teachers and students are fully knowledgeable during first wave of COVID - 19 in Nigeria and are ready to use the wisely managed classroom strategy due to its effectiveness and high productivity in the teaching and learning of Chemistry. The findings of the study also have a corresponding agreement on the work done by Udeani and Okafor (2012) in their findings show that there was a low level of science teachers on the implementation of jigsaw strategy due to lack of confidence on themselves to effectively control and manage their classroom during the lesson delivery.

Utilization of innovative Teaching strategies

From the findings on table 2, Biology teachers utilize known innovative instructional strategies to a very rare extent. It was observed Biology teachers utilize inquiry-based learning to a very rare extent, project-based learning often, jigsaw strategy rarely, computer assisted instruction to a very rare extent and projected video packaged instruction to a rare extent. This is at contrast with the work done by Jone, Dinda and Oludipe (2010) who reported that the students taught using Jigsaw does not performed better than those taught using normal lecture method of teaching. It also corresponds with Nwagbo & Obiekwe (2010) revealed that Jigsaw was not effective in facilitating students achievement in ecological concept. According to them the student had no knowledge of the topic been taught hence grouping the students in the jigsaw method proved abortive. Therefore the result statistically show that there was a low level of significant on the utilization of innovative teaching strategies used in the study considering the observed mean and SD gotten from the Biology Teacher's response on Research question Two above.

Factors that hinders the use of innovative teaching strategies

Table 3 reveals the factors that hinder the utilization of innovative teaching strategies include: poor and inadequate computer accessibility, inadequate professional development, training and duration of Biology lesson and lack of instructional resources. When there are no access to the concurrent computer technologies and its corresponding accessories, teachers may find it difficult to adopt innovative instructional strategies. Also, to adopt innovative instructional strategies, teachers need professional development programs. Where this is lacking, the adoption of innovative teaching strategies in teaching and learning is gravely hindered. Some of the innovative strategies require a lot of time both in planning and usage. Where the school timetable is overloaded with academic activities, teachers of Biology may find it difficult to use innovative teaching strategies, just as when the needed resources are lacking. The finding agrees with that Iwegne (2014) when he observed that some of the factors that hindered the effective use of project managed strategy as an instruction in teaching Ecology in senior secondary included inadequate professional development and lack of computer facilities.

Solutions to the factors that hinder the utilization of the innovative strategies

Table 4, reveals the possible solutions to the factor that hinder Innovative teaching strategies. It was obtained clearly that wide spread access to equipment, staying up-to-date ability, teachers' confidence in the skills, technical support and provision of instructional resources can help curb the challenges of utilization of innovative teaching strategies. This findings is in agreement with the work done by Ezeh (2017) where he asserted that staying-up-to-date, widespread access equipment had a strong degree of mitigation on the problem that he encountered during a study on the factors that affect the utilization of inquiry based strategy on the academic achievement of Biology student on the concept of genetics

Conclusion

The study revealed the following findings which have been presented as per the study hypothesis. The first hypothesis showed that there is no significant difference between the mean ratings of teachers on the awareness of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on gender. The second hypothesis indicated that there is a significant difference between the mean ratings of teachers on the awareness of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on academic qualification. The third hypothesis revealed that there is no significant difference between the mean ratings of teachers on the extent of utilization of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on gender. The last hypothesis showed that there is no significant difference between the mean ratings of teachers on the extent of utilization of innovative teaching strategy that can be used in the teaching of Biology in secondary schools based on academic qualification

Recommendations

1. In order to improve the performance of students in Biology, teachers should consider using the innovative teaching strategies and this should as well be implemented in other levels where Biology is taught if performance in biology exams is to be improved.
2. School administrators should be encouraged to improve on management of academic programmes by providing necessary innovative tools required for instructional purposes.

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BILDING HIGH QUALITY IN EARLY EDUCATION FOR SOCIAL WELL-INTEGRATION

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Abstract: *Early education experiences today a pedagogical approach which covers the period from birth to the age of 6/7. It is the period when the child begins school and also when significant changes occur in the child`s development. The concept of early education comprising the collocation "early child development" and including education, protection and health has widened. It has fallen under the age of 3 after the World Conference from Jomtien (Thailand) in 1990 when the concept of education for all expended and a new concept was introduced, namely "lifelong learning" and along with it the idea that education starts at birth. Thus, this situation led to new approaches in state policies on young children, bringing together the social, educational and sanitary (health and nutrition) environment. This new perspective on early childhood, influenced by the evolution of family and the role of women in society brought about changes in the orientation of specialists and of those who reconstruct socio-educational strategies and policies. They tried to develop new "out of family" child care and education opportunities by creating specialized services. The United Nations Convention on the Rights of Children states the principles of convergent approach of children, including health, education and child protection in terms of well-being and development. It tries to exclude aspects such as: social exclusion, any type of child discrimination, respect for the children`s rights, provision of a good start in life for all children, surcease of child exploitation, access to education for all children, the children`s and teenager`s right to an opinion, participation in decision making, child protection and investment in schools. Romania, by adhering to the United Europe (M. Korintus, 2000) has aligned to these demands by implementing educational policies favourable to the development and progress of children from birth throughout their lives. Our country has implemented*

educational reforms proper to education, child care and fostering according to its nature, interests and aspirations, so that even the children stay in rural or urban location, they have the same opportunities for proper development.

Key words: *curriculum; kindergarten; children; early education; strategy; urban; rural; results*

Introduction

"Early childhood care and education (ECCE) is more than preparation for primary school. It aims at the holistic development of a child's social, emotional, cognitive and physical needs in order to build a solid and broad foundation for lifelong learning and wellbeing. ECCE has the possibility to nurture caring, capable and responsible future citizens." When we refer to early education, we think of the ways in which the education of children between the ages of zero and eight can be achieved. Though a relatively new concept, early education has become of general interest, especially among theoreticians and practitioners in the field of education. We are convinced that investment in early education will bring about many benefits to the society. When you want to build a high quality education you need to consider some general principles as guidelines.

One of the principles would be to knowing the psycho-pedagogical characteristics of the child in different stages of his development: 0-3 years; 3-6 years; 6-8 years. This implies the teacher`s knowledge of psychological and personality traits of the child at different stages of his development;
Another principle that will lead to a quality education requires knowledge of pedagogy, the type of knowledge we can teach the child, what are their interests at this age. Basically, it is about going through the curriculum adapted for early education.

One of the most important pedagogical principles is the principle of respecting the individual particularities of a child. It is known that each person is unique. This has been shown by research conducted on twins (identical twins). The results revealed that although they seem identical, they are completely different and education and environmental factors influence their development differently.
A good teacher will ask him/herself a few questions before applying the curriculum for early education in the classroom: What will I do ?; What will I do with it? ; When will I do it ?; Where will I do it?

The curriculum for early education uses some key concepts: skills, standards, benchmarks, results, assessment. But at an early age it is very difficult to assess children. Therefore, the question of what to teach the little ones comes up? When we want to achieve education at an early age, we must take into account the child`s age and abilities. We should consider the child`s ability to understand and participate consciously, actively and motivated.

In terms of knowledge and understanding, education always starts from the child's development level, life experience to build and develop knowledge gradually, not randomly but according to his interests. The amount of a child`s knowledge develops by accumulating information from the near, familiar environment, gradually adding new information related to those already known, so that the understanding can be made starting from the known to the unknown and from the near to the distant. Learning starts from the child's natural desire to learn and discover. The child's curiosity is boundless and his need for information is materialized by the many questions, sometimes even confusing for adults and the permanent question: why?

For a true child development at an early age, a good teacher will consider the development of the children's skills. It is known that each child is different from the other, they have different preferences, different skills: verbal, social, physical, artistic, etc. Therefore, teachers must find ways to develop these innate inclinations. There is a distance between the existence of an aptitude and the child`s willingness to develop it. The teacher has the duty to develop these skills by stimulating and motivating the children to amplify them, but this approach involves some amendments. Although the skill exists, the child may not be willing to develop it. What do we do to develop these skills, because if not practiced they are lost. The point is that the educational intervention should not be invasive, activated too early, or be too pressing for the child.

One of the competencies covered by the curriculum and which has an important role in the development of the child's personality is social competence. Entering the community, the child will gradually learn his instinctive impulses, will adjust the behaviour according to the colleagues, out of a desire to belong to and be accepted by the group. The teacher will ensure that each child develops these socio-emotional skills. *Children who are enerally disliked, who are aggressive and disruptive, who are unable to sustain close relationships with other children, and who cannot establish a place for themselves in the peer culture are seriously "at risk*". (Hartup, 1992)

By entering the community, the child has many opportunities to interact with the elderly, when playing in pairs or small groups.

In the pre-operational period, when children do not need object-based learning, it is strictly necessary to respect the principle of intuition. By operating with objects, children learn their characteristics, use, value, etc. By

playing with different objects, children accumulate knowledge from different fields. Communicating with other children develops their language, which is more expressive, more nuanced, develops their thinking and some operations: analysis, synthesis, comparison, generalization, it also develops memory, imagination, attention, creativity. In order for a child to develop his intellectual skills, the child must be stimulated daily through a teaching program. Children should participate in learning activities that develop their intellectual skills, according to their age.

But the question is what kind of learning activities will we implement in their daily timetable so that the child develops the general and specific skills without feeling pressured and restricted to do something that may not please him. What is the specific activity of childhood? Game, of course. Therefore, the curriculum for early education is built so that the learning activities are based on games, but not any kind of games, didactic games. The child learns by playing. It learns about lots of objects by grouping toys according to certain characteristics: shape, colour, size, etc. It learns about pets by playing with the animal farm. It learns to practice oral language by reading pictures or books with pictures from fairy tales, learns to speak phonetically, lexically, grammatically correct by playing different didactic games, in which children have to identify objects that start with a certain sound, divide the word into syllables, construct a sentence with that word, etc. The child develops his practical skills by manipulating different toys, building different objects with the help of construction games, or materials from nature.

An analysis of data provided by the EURYDICE study entitled *Preschool education and child care in Europe:* tackling social and cultural inequalities (2009) makes us notice that all European countries have early education and care programmes that address to children 0-6 years of age, and the mission to educate is crystal clear inside institutions that provide such services. Moreover, the goal of these programmes is to stimulate the child`s cognitive, social and cultural development and to train them with learning, writing, reading and calculating activities. In Romania, the Curriculum for Early Education (www.curriculum pentru invatamant prescolar) has a unitary and coherent vision and is structured on the age levels (0 – 3 years of age and 3 – 6/7 years of age) and two sections for each level.

- The Curriculum for Early Education for children with ages from birth to 3 years of age, ante-preschool)
- The Curriculum for Early Education of children aged 3 and 6/7 (preschool)

The aim of this Curriculum is to train children as well as possible for school and for life. In early childhood it is extremely important to give special attention to the development of children under all possible aspects. The Curriculum for Early Education is structured on development areas, which are essential pedagogic tools for delimiting education and learning. They offer the possibility to identify each child`s

abilities and difficulties. The goal of early childhood education is the child`s overall development and provide a good start in life with priorities such as:

- Free, complete and harmonious development of the child`s personality according to its own pace and needs and by supporting its autonomous and creative development.
- The development of the ability to interact with other children, adults or the environment in order to acquire knowledge, skills, abilities and behaviours. Exploration, exercises, attempts and experimentation are encouraged in form of autonomous learning experiences;
- Each child should discover its own identity and autonomy and should develop a positive self-image;
- Supporting the child in acquiring knowledge, abilities, skills and attitudes required in school and throughout its life.

Children are the most valuable treasure of a nation, entities that evolve throughout their educational paths according to inborn giftedness but also to the educational offer of their socio-educational environment. The Curriculum for Early Education is the child`s first step on the pathway of learning and knowledge bounded to the time and society it belongs to.

Methods

In our study we will show that when the Curriculum is applied consistently and responsibly, there are no differences between rural and urban area children in terms of preparation for school and life. In order to validate our hypothesis, we carried out a study on 200 full-time educators with studies in the field, 100 from urban areas and 100 from rural areas located in Arad, Timiș and Caraș-Severin counties. They conducted an initial assessment of their groups at the beginning of the school year, in September 2021, and an evaluation after eight months, in April 2022, on a number of 2,000 pre-schoolers.

Design of the study

At the beginning of the school year, they applied initial tests, covering different areas of development, aiming to identify the children`s level of development.

I. COGNITIVE DEVELOPMENT AND KNOWLEDGE OF THE WORLD

- Ability to understand the relationships between objects, phenomena, events and people, the ability to think logically and solve problems.

Dimensions of development and targeted behaviours:

1. Logical relationships, operations and deductions in the immediate environment.

a. Identifies characteristic elements of some phenomena/relationships from the proximate environment.

b. Compares experiences, actions, events, phenomena/relationships in the proximate environment.

c. Builds new experiences, building on past experiences. Possible answers/solutions to questions, problem-situations.
d. Identifies possible answers/solutions to questions, problem-situations and challenges in one's personal life or in the life of the group.
e. Carries out guided, simple environmental investigation activities, using specific tools and methods.
2. Basic mathematical knowledge and skills for problem-solving and knowledge of the proximate environment.
a. Identify and name the shapes of objects in the environment.
b. Shows closeness to objects with information about size, shape, weight, height.
c. Performs operations of sorting, grouping, classifying, measuring objects.
d. Solves problem situations, starting from sorting and representing some data.
3. Structural and functional characteristics of the surrounding world.
a. Highlights the characteristics of objects located in the surrounding space.
b. Identifies and capitalizes on some features of the living world, Earth and Space.
c. Demonstrates knowledge of the position of man in the universe, as part of the living world and as a social being

II. LEARNING ABILITIES AND ATTITUDES
Objectives: Ability to engage in a learning activity, approaching learning tasks and contexts.
Dimensions of development and targeted behaviours:
1.Curiosity, interest and initiative in learning.
a. Tries, initiates new actions and starts taking risks.
b. Shows curiosity and interest in experimenting and learning in new situations.
c. Initiates learning activities and interactions with children or adults in the immediate environment.
2. Completion of tasks and actions (persistence in activities).
a. Completes simple projects
b. Performs work tasks consistently.
c. Integrates the help received for the accomplishment of the work tasks for which it encounters difficulties.
3. Activation and manifestation of creative potential.
a. Shows creativity in various activities.
b. Demonstrates the presence of rhythmic, harmonic musical sense through song, play with text and song, dance, etc.
c. Demonstrates creativity through artistic-plastic, musical and practical activities, in conversations and creative stories.
III. LANGUAGE AND COMMUNICATION DEVELOPMENT

Objectives: Language development (in terms of vocabulary and understanding of meaning) and communication (including oral, nonverbal and verbal listening skills)
Dimensions of development and targeted behaviours:
1. Oral messages in familiar communication contexts.
a. Practice, with support, the active listening of a message in order to understand and receive it (receptive communication).
b. Demonstrates understanding of an oral message, as a result of capitalizing on ideas, emotions, meanings (expressive communication)
2. Oral messages in various communication situations.
a. Demonstrates the ability to clearly communicate one's own ideas, needs, curiosities, actions, emotions.
b. Respects the rules of correct expression, in different communication contexts.
c. Demonstrates the progressive expansion of vocabulary.
3. Premises of reading and writing, in familiar communication contexts.
a. Participates in work experiences with the book, for the knowledge and appreciation of the book.
b. Phonetically discriminates / differentiates words, syllables, sounds and associates sounds with letters.
c. Identifies the presence of the written message, appreciates and capitalizes on the written message in current activities.
d. Assimilates some elements of writing and uses different ways of graphic and oral communication to convey a message.
IV. SOCIO-EMOTIONAL DEVELOPMENT
Objectives: The ability to establish and maintain interactions with adults and children, the ability to perceive and express emotions.
Dimensions of development and targeted behaviours:
1. Interactions with adults and children of similar age.
a. Demonstrates confidence in familiar adults by interacting with them.
b. Demonstrates ability to ask for and receive help in specific problem situations.
c. Initiates, participates in positive interactions with children of similar age.
2. Prosocial behaviours, acceptance and respect for diversity.
a. Expresses recognition and respect for similarities and differences between people.
b. Respects rules, understands their effects in terms of social relations, in familiar contexts.
c. Practices negotiation and decision-making skills with support.
d. Demonstrates acceptance and understanding of others in the surrounding environment.
3. The concept of self

a. Practices, with support, positive self-esteem in different educational situations.

b. Promotes its self-image, through manifestation as a unique person with specific characteristics.

4. Auto-rural and emotional expressiveness.

a. Recognizes and expresses basic emotions, products of musical pieces, literary texts, art objects.

b. Demonstrates emotional skills.

5. PSYCHO-MOTOR DEVELOPMENT

Objective: Motor skills and abilities, coordination, sensory development along with knowledge and skills of personal hygiene.

Dimensions of development and targeted behaviours:

1. Coarse motor skills and fine motor skills in familiar life contexts.

a. Participates in various physical activities, appropriate to their level of development.

b. Uses hands and fingers in proper handling of objects / tools.

c. Participates actively in games, dances, outdoor games.

2. Sensory-motor behaviour, to guide movement

a. Uses the senses in interaction with the immediate environment.

b. Oriented in space based on the senses.

c. Coordinates his movements according to rhythm, cadence, pause, beeps, songs.

3. Health (nutrition, care, personal hygiene) and personal safety practices

a. Practices with support, follows some basic principles specific to a healthy diet and demonstrates

self-protection skills.

b. Manifests personal hygiene skills.

c. Uses personal physical security rules.

Data collection instruments

Table 1. Comparisons of Pre-test Scores (Children from urban and rural preschool institution)

Preschools/Groups	*n*	*M*	*SD*	*df*	*t*	*p*
Cognitive development						
Urban	25	2.56	0.47	48	-1.118	0.269
Rural	25	3.04	0.56			
Attitude for learning						
Urban	25	2.89	0.44	48	-1.320	0.193
Rural	25	3.10	0.47			

Language and communication						
Urban	25	2.27	0.48	48	-1.683	.099
Rural	25	2.85	0.53			
Socio-affective development						
Urban	25	2.59	0.48	48	-1.464	0.15
Rural	25	2.90	0.55			
Psyche-motor development						
Urban	25	2.55	0.50	48	-1.679	0.10
Rural	25	2.99	0.59			

Analysis of the Data and results

Table 1 presents the relationships between the score means obtained by the urban and rural groups with regard to the sub- dimensions of the PARI scale.

In the "cognitive development" sub-dimension, the mean of the urban group (urban=2.56) is lower than that of the rural group (rural=3.04). However, according to the result of the t-test made for independent samples to determine whether there is a significant difference between the means, the difference is not significant [t(48)=- 1.118, p>.05].

In the "attitude for learning" sub-dimension, the mean of the urban group (urban=2.89) is lower than that of the rural group (rural=3.10), but again according to the result of the t-test, the difference between the means is not significant [t(48)=-1.320, p>.05].

In the "language and communication" capacity sub-dimension, the mean of (urban=2.27) is lower than that of the rural group (rural=2.85), but according to the result of the t-test, , there is no significant difference between the means [t(48)=-1.683, p>.05].

In the "socio-affective" sub-dimension, the mean of the urban group (urban=2.59) is lower than that of the rural group (rural=2.90). The results of the t-test again showed that there is not a significant difference between the means [t (48) =-1.464, p>.05].

In the "Psyche-motor development" sub-dimension, the mean of the urban group (urban=2.55) is lower than that of the rural group (rural=2.99). The results of the t-test again showed that there is not a significant difference between the means [t (48)=-1.464, p>.05].

When Table 1 was examined as a whole, no significant differences were found between the pre-test score means of the urban and rural groups in all the sub-dimensions of the PARI Attitude Scale. Accordingly, it can be stated that the urban and rural groups were at equal levels in terms of child-raising attitudes at the beginning of the study.

In Table 2 presents the relationship between the post-test score means obtained by the urban and the rural groups were examined according to the sub-

dimensions of the scale. In the "cognitive development" sub-dimension, the mean of the urban group (urban=2.99) is lower than that of the rural group (rural=3.29), but according to the result of the t-test made for independent samples to determine whether there is a significant difference between the means, there is not a significant difference between the means [t(48)=-1.817, p>.05].

In the "attitude for learning" sub-dimension, the mean of the urban group (urban=2.59) is lower than that of the rural group (rural=2.95), but results the t-test showed no significant differences [t(48)=-0.670, p>.05].

In the "language and communication" sub-dimension, the mean of the urban group (urban=2.60) is lower than that of the rural group (rural=2.96), but results the t-test showed no significant differences [t(48)=-0.670, p>.05].

In the "socio-emotional development" sub-dimension, the mean of the urban group (urban=2.29) is lower than that of the rural group (rural=2.59). The result of the t-test show the difference between the means to be significant [t(48)=-2.309, p<.05].

In the "psyche-motor development" sub-dimension, the mean of the urban group (urban=2.30) is lower than that of the rural group (rural=2.8). The result of the t-test show the difference between the means to be significant [t(48)=-2.309, p<.05].

Table 2. Comparisons of Post-test Scores (Scale Sub-Dimensions)

Preschools/Groups	*n*	*M*	*SD*	*df*	*t*	*p*
Cognitive development						
Urban	25	2.99	0.59	48	-1.817	.075
Rural	25	3.29	0.54			
Attitude for learning						
Urban	25	2.59	0.40	48	-0.67	0.506
Rural	25	3.95	0.45			
Language and communication						
Urban	25	2.60	.51	48	-2.309	.025*
Rural	25	2.96	.48			
Socio-affective						
Urban	25	2.29	0.60	48	-1.787	.080
Rural	25	2.59	0.75			
Psyche-motor skills						
Urban	25	2.30	0.50	48	-2.996	.004*
Rural	25	2.80	0.55			

When Table 2 was examined as a whole, no significant differences were found between the post-test score means of the urban kindergarten's children and the rural groups in the "cognitive attitude", "attitude for learning" "language and communication", "socio-emotional development" and

"psyche-motor skills" sub-dimensions of the Scale. However, no significant differences were observed between the development of the urban children and the rural ones according sub-dimensions of the scale. Accordingly, it can be stated that participation by the children to the educational process in the kindergarten, even urban or rural, for a year, created a significant effect in these different aspects of child-raising.

Conclusions

The strategies and programmes for Children`s Early Development should address the child`s multiple needs by taking into account its health, nutrition, early education, psycho-social stimulation and at the same time the role of socio-cultural environment.

The human brain starts to develop a few weeks after conception; after birth the development pace of a child`s cognitive abilities is the fastest in the first three years of life. Therefore, it is vital to make sure that a child`s life starts in a fully affectionate environment, where it receives unconditioned love and attention but also proper stimulation by contact with other children and adults. Equally important is to benefit from proper nutrition which promotes attachment and trust. A good start in life and a protective environment are very important. One healthy, stimulated and well-integrated preschool child acquires abilities that would be helpful during its education years but also on the labour market. It has been proven that early education programmes bring benefits in various fields, such as school achievement and results, progress of educational performance, reduction of delinquency and crime, and access on the labour market (Heckman, 2010). According to the European Commission, all Union countries should take actions which aim „Investment in education and professional training is essential to boost productivity and economic growth;" "emphasis should be laid on increasing efficient investments on all educational levels "(E.C., 2012).

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STRATEGY AND TACTICS IN FORMAL EDUCATIONAL PROCESS

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Abstract: *The paper is in line with the author's preoccupations for substantiating some theoretical aspects without which the practical activity in the educational field cannot reach real qualitative odds. This time, the approached concepts represent the milestones of the journey from the desire (planed educational process) to the realization (the real results of the educational process). In the first part, a definition of fundamental concepts related to planning/organization and monitoring on different levels of the educational system and process (the strategy with its different connotations, tactics, strategic plan, and implementation) is attempted. The role and importance of the strategic level in the educational reform and curriculum reform are briefly presented in the second part. The relationship between the strategic plan, the tactical/operational one, and the actual implementation is dealt with in the third part, with the emphasis of some considerations with the nuances of conclusions of long-lasting observations on the educational reality. The importance of knowing these theoretical aspects, so that practice does not pay a bitter price for not genuinely focusing on what it declares as a priority, is highlighted in the paper. In a world where the statements seem to be more important than the reality this kind of approach is seen as a necessity.*

Key words: *educational policy; strategy and educational strategy; educational/ pedagogical strategy and didactic/ teaching strategy; strategic planning; implementation*

1. Defining the core concepts

The specialty literature in education reveals a significant number of concepts used with a wide range of meanings which determine a real difficulty of understanding especially at the level of practitioners of education without in-depth training in pedagogy as specific science. The unclarity, or better said,

the ambiguity of the pedagogical language has been topic approached in part of my previous papers each time with reference to the specific topic in the debate.

I want to highlight, once again that, in the areas where sets of official documents are produced, at a general level, and these documents with design purpose, are to be implemented in educational practice without a clear using of the terms and a genuine and unitary understanding of their meaning by all the actors involved can't have an effective result. But even if this idea appears to be very common and not complicated at all, the reality shows the contrary. This is the main reason for my insistence of clarifying some important aspects, not for theory sake, but especially for educational practice effectiveness.

This time the focus is put on some concepts with an important impact both on the level of educational policy and on the level of educational practice.

1.1. Educational policy

Each nation and nowadays groups of nations with more and more flexible borders design general principles and policies on governmental or regional levels aiming to give common directions in the formal education sphere. They are directly and mainly connected to formal education, and less directly but in enough important way with non-formal education. It is still essential to stress that both their establishment (acceptance as principles) and their implementation within geographical and national specific areas depends on informal education which has stronger roots within the local culture.

These general principles and the way of thinking at governmental levels generate laws and rules that govern the way of functioning of educational systems along different historical periods. They cover the core meaning of the concept of educational policy which consists of sets of statements, included in official documents, based on general principles that manage the life of the educational systems at the national or regional level.

1.2. Strategy and educational strategy

Strategy as a concept seems to have the roots in the military sphere. This concept highlights aspects connected to the planning, organization, and conduct of military operations in war and consists of a set of operations and maneuvers, at the level of design, conceived to achieve a victory.

Starting from the accepted meanings in the military field, from where the concept of strategy originates and translating the significance into the educational field, one can define the educational and didactic strategies by

appealing to the three pillars of the initial definition: planning, organization, and leadership by referring them to the educational and teaching/ didactic approach.

Both the pedagogical and didactic strategies involve all three aspects stressed by the core definition of the strategy:

- *planning* expressed by the pedagogical and didactic design on all the educational hierarchy levels:
  - ✓ educational laws and regulations (the highest hierarchic level)
  - ✓ the national curriculum with the educational plan and the connected syllabi
  - ✓ the teaching level- expressed by lesson plans
- *organizing* the context in which the strategy is to be implemented, meaning the structure of the educational system on the national/ provincial level
- *managing* this implementation in all of its sequences, as managing design, followed by the tactic level of the concrete implementation

Another concept constantly used in educational practice is that of *didactic or teaching strategies*, with the meaning of chosen teaching methods for different sequences of content within the lesson plans.

This concept (involving the term strategy at its plural form) generates often confusion, because it appears at the concrete level where the strategy is very close with the tactical level.

1.3. Educational/ pedagogical strategy and didactic/ teaching strategy

Probably this is the reason for a poor understanding of the complex meaning of the terms *educational/ pedagogical and finally didactic/ teaching strategy*. The long experience of contact with the practitioners of education showed me that the only meaning used and understood is this of the term the didactic/ teaching strategies. The value of a wider strategy, of the educational and pedagogical strategy at higher hierarchic levels in education, does not exist for the usual pedagogical language.

1.4.Strategic planning

Strategic planning defined as ” the process of setting goals, deciding on actions to achieve those goals and mobilizing the resources needed to take those actions” (…) ” describes how goals will be achieved through the use of available resources” . (Billingham J.,2012)

An analysis of this definition reveals that it can be applied to all the hierarchical levels of the educational process. Thus,

- Each law of education stets principles and general goals, deciding the general frame of actions aiming to achieve the designed goals and establishing the general resources (human and connected resources) and their way to be used in order to initiate, monitor, finalize and assess the real results vs the expected general results designed as goals.

  No matter how these laws are structure (as a single common law for the entire educational system with all its levels, or different connected laws for each level) they essentially direct the planning, the organization and the managing activity of what is designed to happen within the formal education area (sometimes involving implicitly the non-formal education, as well)

  As an example: In USA (6), as the federal-state, exists general laws containing directions of action according to established goals for all the involved states, stating general principals. Thus in 2001, the general principle was” No child left behind” was reiterated in specific terms by the state educational laws built often on each level of education as distinctive acts.

  Other countries (e.g.Sweeden, UK., Romania, etc.,4,5) has one single law of education structured on educational levels, establishing the framework for compulsory education and the other levels. Also, aspects connected to the educational system, curriculum, human resources, regulations for financial aspects involved are to be found in these general directional acts for the education field.

  The educational acts in fact plan the framework; organize the institutions and the hierarchy of monitoring and managing of what is to be happening for a defined period of time within an educational system. The law creates the framework of the entire strategy.

- Each National Curriculum with all its connected documents is another planning document, involving aspects of organizing and monitoring the process of curriculum implementation, but, also, it belongs to the strategic level.

- Each regional inspectorate of schools, each school have their specific strategic plan, more concrete and adapted to the specifics of the context they are conceived for.

  The established goals are connected to what it is settled to be achieved on the superior hierarchic level; the decided actions are connected to the goals on one hand but to the local context on the other hand, as well. These actions take into account the affordable resources existing within the concrete context.

The design of a strategic plan is a very important step.

Sometimes, these documents put in words everything that it is considered to be well assessed by the person in charge with the assessment process of a school activity, without a real connection to the specificity of the defined school.

This formalism in designing has a huge destructive potential acting in two directions:

- ✓ for the committed teachers, staff, and students an" unrealistic strategic plan" could be a source of frustration because they cannot achieve the written goals in the given conditions of a concrete school. Their decrease in motivation will be an inevitable effect.

- ✓ for the less motivated people (teachers, staff, students, etc.) a "pretending" strategic plan means something lack of interest, a frame to refer to when they are asked to produce for themselves, also " pretending" reports. This situation is a strong factor of superficiality and lack of genuine positive results. BILLINGHAM J. (2012)

2. Role and importance of strategic level in curriculum reform implementation

A legitimate question could be: why is so important to separate these two plans: that of strategy and that of tactics?

An old saying says that the"*the home accounting does not match that of the fair*" translated with the meaning that the design does not entirely mach with the concrete implementation. The *probable* factors of influence are taken into account when the design is done, but the *real* factors of influence act in the reality of the action. That is why a chance to adapt the plan to the real-life must be considered, even during the design process The higher the level of design is (example: educational policy, pedagogical strategy) the more flexible the pattern must be considered, with a wide palette of possibilities to adapt the future action to the concrete and specific contexts of implementation.

What is crystal clear appears to be the idea that it is difficult to obtain the expected results without a genuine understanding of these hierarchic levels of design and their connection with the tactic/ operational level strongly connected to the action represented by the implementation process.

Usually, concepts like strategy and tactics are used from the managerial point of view. The literature presents long debates and representative examples of the way they are expressed in managerial activity generally speaking and in the educational field, particularly. But in education, two plans of management are strongly connected:

- ✓ The management of the institutions of education involving the inside organizations (classes of students, teams of teachers on levels or subjects, leading committees, etc); this plan involves principals/ directors, middle managers as chiefs of commissions or committees, etc.

- ✓ The management of the educational/ didactic process where the manager is the teacher.

The second plan is of interest in the context of this paper. The topic approached is focused on educational management (as management of the educational process). The school management as an institutional issue can approach other specific facets of these concepts: strategy and tactics.

Each actor working within the formal educational field should be aware of the importance of knowing to design a strategy and adequate tactics followed by effective actions aiming to achieve at a high level of quality the established goals. A school principal is responsible for the goals at the level of the entire school, a middle manager is responsible for the goals of the structure/ organization managed, a teacher is responsible for the ultimate and the most important goals to be achieved, the quality of the competencies developed in the students' level.

All these levels of action and people involved are connected by strong, systemic and intimate inter-determinations.

3. Strategic and tactics levels- connection, functionality, and reality

An assessment of the documents settled for each the mentioned strategic and tactical plans already mentioned can reveal a lack of continuity and contiguity as a source of further dysfunctions.

This is not an issue only of the present but it had long term roots in the history in our educational system. Therefore, the focus on writing and presenting ”perfect” designing documents seems to be is manifested as much as a central concern simultaneously with the lack of real interest in concrete qualitative results. This”pretending” attitude, a fake of quality when it is about the real results became a worrying situation. More worrying seems to be the lack of interest for the ”pretending” risk itself.

Some selective examples could be useful.

Focuses on fashion issues like ” total quality management” for instance is not negative in itself. The concept, even if still ambiguous, can reveal and help for great results.

TQM as a concept coming from business, defined in different ways by authors like Chase and Aquilano, Oakland J.S, or Miller W.J. (Miller W.S.,1996) entered in education as well, together with the omnipresent claim for QUALITY itself. Committees, many persons responsible, tons of files and documents, a multitude of decision as paper signed and carefully put in files, are to be found in schools. They should show how the concern for ” Quality, as High Majesty” is considered and achieved. In theory (as intention and design) it is supposed to find in the educational institutions a well organized, flexible and extremely well-managed system based on clear principles aiming to demonstrate that every staff member (in education in our case) must be committed to maintaining high standards of work in every aspect of an institutional operations.

Each student has (must have) a personal file/ portfolio where his or her progress is registred and exhibit. Each teacher has also a portfolio as fat as possible, with a lot of diplomas, certificates, awards as proofs of the involvement in different and on fashion activities. Yes, these papers exist, especially when the institution or the person is in an assessment situation.

The Department of Quality has also an impressive number of bookshelves, tons of files, papers presenting proofs about how high quality the school work

is, how long term the teachers are trained (initially and inside of the in-service training system), in diversified ways. But an accurate and in-depth assessment can find much less than the files shows. The huge and constant demand for so many proofs on paper, or on electronic supports had an extremely negative perverse effect. Both the staff of the school and the students as followers of models became strongly preoccupied with appearances. Thus, the students are focused on having private tutors (as all the other kids have), on being involved in a great number of off-school activities (because all the colleagues or family friends are). The teens and the young adults are preoccupied on having diplomas, as many as possible, to obtain many master degrees, certificates of in-service training as much as possible, all put into fat portfolios. The concern for produced proofs became much more important than what the effect of learning process genuinely means. This is the most disastrous possible result. And the reasonable question arises: where the genuine quality is lost?

It seems that the quality was lost somewhere in the gap between strategy/ tactics, operational PLANS (strategic aspects on different levels) and the actual actions of implementation. This gap has the roots in the excessive focus on planning (only to be planned) and on the assessment focused on what the planning is, not what the real results represent in fact. The loud statement that the concern for quality is the priority should be connected to the proper and well-done assessment of the expected outcomes, highlighting their genuine quality. And when these are not at the designed level, the attention must be focused on the assessment of the appropriateness of the design itself.

The importance of knowing these theoretical aspects, so that practice does not pay a bitter price for not genuinely focusing on what it declares as a priority, is highlighted in the paper.

In a world where the statements seem to be more important than the reality this kind of approach is seen as a necessity.

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BOREDOM - PRACTICAL SOLUTIONS TO THE CHALLENGES OF BOREDOM

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Abstract: *Boredom is a real problem in the lives of schoolchildren and contemporary people. Although important steps have been taken in the theoretical understanding of this phenomenon, we are still witnessing a struggle that many people/students are losing because they do not know how / have not been taught how to relate to it. This article comes up with some concrete proposals to address boredom, in the light of recent scientific research, so that we can emerge victorious from the confrontation with boredom.*

Keywords: *boredom; academic boredom; types of boredom; boredom coping strategies: corrective measures; educational interventions.*

Boredom and academic boredom

It is easy to describe the experience of boredom that we have experienced in different contexts of life, in the family, at school or in the professional environment. We can distinguish between being bored and not being bored, between being bored in general and bored in certain situations or never bored (Martin et al., 2006).

The experience of boredom (Martin et al., 2006, pp. 203-204) can be described as the feeling of being trapped and restless (like a lion in a cage), but still lethargic (tired), most often associated with guilt (unproductive use of time) and depression (I can't see anything good for me in the future). Boredom is the experience of being disengaged and stuck in an endlessly unsatisfactory present (Eastwood et al., 2012).

Regarding the detection of boredom, we can observe whether the other person is bored or not, referring to observable behaviours specific to boredom (communication monotony, passivity, lack of involvement, collateral activities, low performance) or those opposed to it (interest, enthusiasm, involvement, efficiency).

In general, we blame an external source for our boredom, and we don't think it has anything to do with us. Sometimes we say that we are bored to mask our lack of concentration, commitment, motivation. In other situations, we shy away from supposedly boring activities or give up certain activities that we don't like, citing boredom.

Academic boredom (Pekrun et al., 2010) can be defined as a negative deactivating emotion, with several components (being a multidimensional construct): *the affective component* (unpleasant feelings, aversive), *the cognitive component* (lack of stimulation, altered perceptions of time, mental absence, mental scattering), *the physiological component* (reduced arousal), *the expressive component* (low, monotonous facial, vocal and postural expression) and *the motivational component* (motivation to change or leave the situation).

Without a doubt, academic boredom affects students, it is a challenge for teachers who interact with them in the classroom, it raises problems for parents interested in blocking their children from boredom, but also for education specialists who have perhaps too little data on the complexity and magnitude of this phenomenon.

A few landmarks in the fight against boredom

The proposals formulated here in the form of concrete applicable actions are based on theoretical foundations, i.e. the results of recent research, and have the role of guiding the person concerned, aware that they are facing this phenomenon, but also people who have the role of education, being interacting with bored children (in class and beyond).

(1) Boredom can be defined as an unfulfilled desire for a satisfying activity (Gerritsen et al., 2014, p. 27) - that is, the person experiences boredom as a feeling of deficiency, as an unpleasant state (Pekrun et al., 2010). Acee et al. (2010) identify self-centred boredom, i.e. the situation in which the focus is on the negative feelings associated with boredom (dissatisfaction and frustration).

Proposal: Recognition of boredom or silent enemy.

Unlike other emotional states that have a noisy or obvious manifestation, boredom has good manifestations, not disturbing for others. Only the person in question can decipher the intensity of the unpleasant feelings. Boredom is not a neutral state but involves a negative disabling state. The personal emotional barometer tells us exactly when we are experiencing boredom, and in addition, some manifestations betray this: states of fatigue (physical and emotional exhaustion), decreased performance, feeling inefficiency and uselessness.

Boredom should be differentiated, not to be confused with hopelessness, lack of interest, lack of motivation and depression.

(2) Boredom is a negative and disabling (disengaging) emotion that occurs when we face a lack of control over the activity (too hard or too light) and/or when we do not see the value of the task to be performed (Pekrun et al., 2006, 2010) - that is, compared to the control-value theory, boredom occurs when the person negatively evaluates the value of the *activity and perceives a low control. Acee et al. (2010) talk about task-focused boredom,* which refers to the lack of meaning of task or the fact that we focus on the boring features of task. The same study shows that people distinguish between self-centred boredom and task-focused boredom only in the case of overly challenging tasks.

Proposal: Reassessment of boring activities. What we think we can do is different from what we can do. What we think is worthless at the moment, however, has value in itself.

Boredom is related to the lack of control (which is perceived as a causal influence of an agent on actions) and the lack of value (perceived valences of actions and results) that are associated with the task/activity (Pekrun et. al., 2010).

Boredom can also occur when there is a lack of control over the activity because the requirements exceed the individual's abilities (person's abilities), but also in the case of gifted children when the requirements are below the level of abilities (Acee et al., 2010). Factors that contribute to boredom are variations in control and value assessment, such as lack of control, choice, challenge, and significance (Acee et al., 2010).

The practical solution would be to help children perceive the positive values of an activity/task and to make sure that they have this perception of control.

Another solution would be to pay special attention to potential environmental triggers or precursors in the occurrence of boredom (quality, difficulty, attractiveness, usefulness of tasks).

(3) Boredom involves a state of high or low arousal, with the inability to experience the optimal level needed to achieve satisfaction in an activity (Leary et al., 1986) - that is, the inability to have sustained attention, to which we focus optimally and may be related to environmental characteristics that favour both under stimulation and overstimulation. The person is unable to identify with the offer of the environment, to get involved in the current activity and wants to do something else.

Bored people have impaired attention skills (Hunter & Eastwood, 2016) or have difficulty sustaining attention in monotonous tasks or require increased vigilance.

Goetz et al. (2006), considering the level of arousal (low/high) and valence (positive/negative) identify the following situations of boredom:

- *indifferent boredom* (low excitement / slightly positive valence) manifested as indifference and withdrawal from the outside world.
- *calibrating boredom* (higher arousal, but still relatively low / slightly negative valence) manifested as a wandering of thoughts, not knowing what to do and a general openness to unrelated behaviours, receptivity to options to reduce boredom.
- *searching boredom* (greater excitement / more negative valence) manifested as restlessness and an active search for alternative actions.
- *reactant boredom* (increased arousal / negative valence) manifested as the need to get rid of the situation, to avoid those responsible.
- *apathetic boredom* (very low excitation / very high negative valence combined), manifested as helplessness similar to despair, lack of reaction.

These observable manifestations show us the areas of difficulty and can suggest concrete measures to get out of the trap of boredom quickly, here and now, the common element being: *immediate action*.

Proposal: Confrontation with boredom. Attention and effort are important weapons in the face of the desire to escape the situation.

(4) Westgate (2020, p. 34) in the Meaning-and-attentional-components model of boredom (MAC) shows that boredom is an affective indicator of failed attentional involvement in congruent-purpose activities. Attention deficit (attention component) and attention deficit disorder (significance component) cause equally boring. The effects are different (Westgate & Wilson, 2018): inattention, lost mind, poor concentration (*attentional boredom*); high arousal, feeling of sadness and loneliness, distorted perception of time, desireless disengagement (*meaningless boredom*) and to these, other characteristics are added such as agitation and frustration or apathy, depending on the challenge of task (*mixed boredom*).

The lack of value or meaning can lead to this inattention, but there are situations in which boredom also occurs in significant activities, translating into an *inability to cognitive engagement* when tasks are either underchallenging or overchallenging (Westgate et al., 2017).

Proposal: Small changes with big effects. Actions with a positive effect on getting out of the boredom zone.

Westgate (2020) proposes several ways to alleviate attention deficit boredom (given attention and significance deficits):

- Adjusting cognitive demands (adjusting tasks, neither too hard nor too easy, splitting tasks, alternating tasks)
- Adjusting of cognitive resources (rest, caffeine, skill development)
- Adjusting the value of the goal (setting long-term goals, introducing significant new goals for the person)

- Changing activities (choosing new activities that involve interest or pleasure depends on what the person is looking for). Novelty and complexity increase interest and reduce pleasure, while certainty increases pleasure and decreases interest (Silvia, 2006).

(5) Eastwood et al. (2012) show that boredom theories are inclusive of a psychodynamic aspect (repressing the desire to do something meaningful) and existential (existential emptiness or lack of purpose in life, paralysis of the will).

Yeager et al. (2014) show that the existence of a learning goal that has a self-transcendent component (to serve the other, to support an idea, a social cause, in a broad sense to help the other and society), that is, it goes beyond self-interest, has a particular impact on: self-control, persistence in tedious tasks, increased resistance to distractors or tempting alternatives, increased academic performance over time, deep learning in the event of a tiring task, increased self-discipline even if the task is unrelated of the future, increasing resistance to temptation even when boredom increases.

Proposal: Formulation of transcendent learning goals (I learn to be useful to people by practising profession X)

Introducing transcendent learning goals can be a very effective alternative, much more effective than trying to do interesting tasks.

Causes and consequences of boredom

Fisher (1993), Goetz et al. (2014) note that there can be multiple causes of boredom:

- External causes: a perception that freedom is restricted (excessive authority, over-control); poor environmental stimulation (monotonous, simple, repetitive, uninteresting and unstimulating tasks by their nature); lack of communication between the persons involved (unclear objectives, poor feedback, ambiguous messages); social contagion (bored colleagues or boring colleagues) and self-belief that the environment is boring, etc.
- Internal causes related to individual characteristics: extraversion, predisposition to boredom, impulsivity, type A behaviour, neuroticism (Watt & Vodanovich, 1999)
- Inadequate environment - a person: an incompatibility of needs-demands, lack of meaning of work, incompatibility of role, high or too low skills about the activity, wrong school / professional options, etc.

From our point of view, these are factors (not causes) that support boredom, because the cause depends on the person, on how they relate to these predisposing factors.

Proposal: Discovering novelty and challenge regardless of the context. Avoid alternative counterproductive activities.

Of course, changing the characteristics of the environment could bring improvements in terms of alleviating boredom, in the same line the adequacy of stimulation to the characteristics of the person would be desirable, but these things are difficult to achieve because people are in a permanent dynamic and it would be difficult to obtain this match all the time.

Pekrun et al. (2010) highlight some of the consequences of boredom in the context of school activities/tasks:

- Cognitively, boredom leads to reduced attention span, increased distractibility, and irrelevant thoughts about task, thoughts focused on alternative content.
- Motivationally, boredom reduces the effort invested in the activity and induces the motivation to avoid the activity, the motivation to get involved in activities irrelevant to the task.
- In terms of learning strategies and self-regulation, boredom leads to superficial information processing, reduces the use of cognitive and metacognitive strategies in solving tasks.
- Boredom harms overall performance.

Daschmann et al. (2011), Pekrun et al. (2010) draw attention to some extremely unpleasant consequences of boredom: deviant behaviours, poor grades, absenteeism and dropping out of school. To which are added other social problems such as addiction to various substances, gambling and screens, depression, eating disorders and hostility.

Some studies show that there are aspects that negatively correlate with boredom, so they can be a kind of allies in the fight against boredom: intrinsic motivation, internal place of control, self-concept, the existence of reasons for achievement, the existence of learning objectives, valorisation of academic results, educational involvement and the existence of a career plan (Goetz et al., 2006), attention and effort invested in learning, self-regulation of learning (Pekrun et al., 2010).

Proposal: Managing the level of boredom by being aware of the advantages and disadvantages arising from resistance, respectively giving in to boredom.

Proposal: Develop a plan to increase resistance to boredom.

Strategies to combat boredom

Nett et al. (2010) identify three types of coping strategies used by students/individuals to get rid of a boring situation:

- *The evaders* or those who do other things to get rid of the boring situation, use cognitive and behavioural avoidance strategies (I think of something else /I talk to my bank colleague).

- *Criticizers* or those who disapprove and blame the other / situation/ teacher for the boring situation, use behavioural approach strategies (I ask the teacher for more interesting tasks).
- *Reappraisers* or those who realize that boredom is a state that derives from within and make an effort to re-engage in the activity, use priority strategies of cognitive approach (I pay more attention to the teacher's explanations).

Daschmann et al. (2011) identified eight factors that contribute to boredom (precursors of boredom): being over-challenged, being under-challenged, being bored by an unchanging routine, not finding meaning in learning, having more better to do than being in class, not liking the teacher, feeling uninvolved and bored in general.

Daniels et al. (2015) show that cognitive approach strategies correlated negatively with most precursors of boredom, while avoidance strategies (cognitive and behavioural) correlated positively with all precursors. Behavioural strategies have been positively correlated with over-challenge, teacher dislike, lack of involvement, and general boredom. The more precursors and the higher the intensity, the higher the risk come to light the profile of the evaders.

How can we re-evaluate our way of dealing with boredom?

We propose several solutions on the two axes: (a) boredom deriving from the outside, respectively (b) boredom deriving from the inside.

(a) Being trapped in an environment or in a situation you do not want (enemy from outside).

Proposal: Decision to get involved despite obstacles. Is there anything good in this situation? What I like to do in the moment helps me, develops me, is it related to my future goals?

Proposal: Testing resistance to a boring situation. What good did this boring experience that I took part in offered me?

Proposal: Reactions to boredom and humour. How do I react to boredom? What do others do when they get bored? Does humour help me in this situation?

Proposal: Natural consequences and complications of boredom. What are the effects of my boredom now? What problems might arise next? What are the risks of giving into boredom?

Proposal: Search for what was valuable in the boring situation. What important purchases have we made? What has changed as a result of my active participation?

(b) To be defeated by one's boredom (the invisible enemy within)

Proposal: Personal skills with which they can overcome boredom. What helps me overcome boredom?

Proposal: Manage your level of boredom. What can I do to avoid becoming a victim of boredom?
Proposal: Differentiate the enemy. Is it boredom or something else?

Conclusion

Research has shown that boredom and the tendency to experience boredom are associated with several psychological, social, and physical health problems (Eastwood et al., 2012).

First of all, we need to differentiate between chronic boredom and transient boredom, between boredom as a disposition or trait of the person or a temporary state generated by a certain transient context that is too unrelated to the person.

Secondly, we must identify which aspects of the environment are boring or what we can change about these external stimuli to be relevant or how we can change a person's attitude towards this perceived boring environment. At the same time, we need to assess whether there are certain dysfunctions related to the person who generates boredom (attention deficits, cognitive deficits, attributional deficits, deficits related to self-control, etc.).

Thirdly, we need to understand that even boredom that is not remedied by accumulation can have serious consequences for the person's further development and performance.

For this reason, it would be essential to increase the abilities of children/people to cope with boredom, in which case we would cancel their vulnerability to uncontrollable external influences.

In this study, based on recent research in the field, we have indicated some directions for action in situations where we face this silent enemy called boredom.

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LINGUISTIC INTELLIGENCE:PSYCHOLINGUISTIC, LINGUISTIC CREATIVITY & METACOMMUNICATION

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Abstract: *This Psychology article presents the theoretical-conceptual models that characterizes thekeys to understanding and to study mental capacity and communication skills, useful in being able to know and analyses Linguistic Intelligence. Studies on the development of Linguistic Intelligence have been conducted predominantlyby the following disciplines:*

- Neurolinguistics that led to the formulation of mental imaginative insights as the fundamental conception of the Linguistic Generative Intelligence model,

- Social Cognitive Psychology that led to the formulation of mental evolutionary adaptation as a fundamental principle of the Linguistic Constructive Intelligence model;

- Psychology of Communication that led to the formulation of continuous, dynamic and interactive relationship of the communication cycle as a fundamental axiom of the Communication Sciences.

Linguistic Intelligence is determined by typical forms of thinking and reasoning, whichadopt particular mental abilities and specific expressive competences with respect to other communication codes, such as the graphic-pictorial, the mimic-gestural, the musical, etc.

The structures, properties, and expressions of Linguistic Intelligence, that characterize theconception, construction and formalization of verbal or written communications between people, can be analysed on the basis of three different fields of studies:

A) PSYCHOLINGUISTIC: study the psychological characteristics and rules of codification and decoding of language, in the psycho-cognitive-pragmatic field of study of linguistic communication).

PsychoLinguistics is connoted by 4 models: Structuralist Cognitivism, Empirical Taxonomy, Generative Neurolinguistics, Linguistic Metacommunication;
B) LINGUISTIC CREATIVITY: acts in the psycho-ideative field of study of linguisticcommunication.
The Creativity is determined by the mental processes of Constructive Intelligence and
Generative Intelligence.
The mental processes that characterize Creativity are: the Global Perception, the
Personalizing Insights, the Multifaceted Vision, the Cognitive Originality;
C) LINGUISTIC METACOMMUNICATION: study the types and modes people use to express thoughts and concepts that go beyond, beyond, what the cognitive and affective contents mean at the level of language and communicative message in the psycho-emotional and socio-cultural field of study of linguistic communication.
Linguistic Metacommunication is determined by mental symbols (cultural symbols andpsychic symbols) that the person processes and expresses during communication.

Key words: *Linguistic Intelligence; Psycholinguistics; Linguistic Creativity; Metacommunication; Development of Linguistic Intelligence; Neurolinguistic Communication Psychology; Communication Science.*

A. Studies on the evolution of linguistic intelligence:neurolinguistics and social cognitive psychology

Studies on the development of Linguistic Intelligence have been carried out mainly by Neurolinguistics and Social Cognitive Psychology.

Neurolinguistics considers the biological and neurological aspects of the processes and apparatuses involved in the acquisition and use of language.

Neurolinguistics is based on studies of *Genetic Psychology*, characterized by the comparison between the maturation of structures and physiological processes related to language and the expressive-communicative abilities of the same.Thus, Neurolinguistics is based on studies of genetic evolution of human language abilities and studies people's linguistic aptitudes and potentialities

Social Cognitive Psychology considers the conditioning of social reality and the educational environment in the development of Communication and

Linguistic Intelligence andtheir influence in the cultural context as a stimulus and tool to promote socialization and culturalprocesses.

Social Cognitive Psychology posits that language development is predominantly determined by environmental and social influence.

Behaviorist Psychology can be aggregated with the theory of Social Cognitive Psychology, whose theoretical model is characterized by the following principles:

1) the child learns to speak through a stimulus-response process, where the approval of parents and the family environment serves as constant social reinforcement;

2) through daily interaction and verbal communication, the social environment progressively shapes language acquisition, reinforcing the learning of language elements and rules that are used in the community. Child distinguishes the right words from the wrong ones basedon the association of rewards and punishments exchanged during social interaction.

In a manner diametrically opposed to Social Cognitive Psychology, Neurolinguistics highlights the evolution of language through innate predisposition and genetic programming ofthe maturation of the structures and physiological processes specific to language itself.

For Neurolinguistics, language is a means of communication particular to the human species; its development is determined by a biological matrix that through the continuous exchange between genetic heritage and environmental influence, allows the maturation of the biological functions and physiological mechanisms of language.

In the Neurolinguistic conception, language evolves into a system of rules and linguisticknowledge, , which is used as early as infancy to speak and to understand others who speak.

Noam Chomsky 1957, 1964, 1965a-b, 1968 a-b, 1969/70, 1975a-b-c-, 1977, 1980, 1981,
1987), one of the major exponents of Neurolinguistics, theorizes that each individual is endowed with m physiological apparatus of language acquisition (LAD), determined by geneticfactors typical of the human species.

Through activation of this language acquisition system, humans have the ability to process data related to language and can infer correct and socially understandable grammaticaland syntactic forms.

Chomsky hypothesizes, then, that the development of language is marked by a generationof language system, which is shaped by social experience.

Aleksander R. Lurija (1951, 1959, 1960, 1968, 1974, 1975 a-b, 1976) in his study of the neuropsychology of language, highlights the fact that language is a regulator of behavior that allows the child to learn about reality in a richer, more evolved way.

This study is characterized by the theoretical contributions of Lev Semenovic Vygotskij(1934, 1960, 1966, 1972) who points out that language ability contributes to the formation anddevelopment of thought.

According to this theoretical model, the development of thought and language converge,allowing for a more organic structuring of the experience.

The development of children's mental processes starts with dialogues made up of gesturesand words to arrive at communications that use autonomous thinking; these social relationships allow content and vocabulary to be internalized, resulting in complex, conceptualized personalresponses.

Since speech is a mental abstraction that can be used as a cognitive or reasoning element,allora il pensiero diventa espressione verbale e il linguaggio diventa contenuto razionale.

Therefore, intellectual development consists of reflection on experience and personal elaboration on the linguistic messages made between individuals.

Therefore, Vygotskij's theoretical model highlights that the convergence of thought and language allows for the formation of a superior synthesis of rational language.

This conception can be schematized as follows

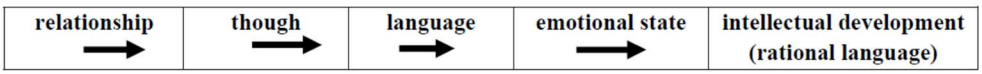


Figure 1: *Vygotskij's theoretical model*

To Vygotsky's model can be correlated Jean Piaget's model (1923, 1937 a-b, 1966, 1967)characterized by the theory that: the development of thinking allows the evolution of linguisticability.

According to Piaget, it is not accurate to say that intelligence depends on language, instead the conception that language depends on the intelligence developed by the individual isright. However, the processing and use of language is important in human logical-cognitivedevelopment in that:

a) allows you to recall facts and events, freeing them from perceptual limitations;

b) allows you to represent the elements of a context in an abstract conceptual and rational orderso that you can deepen your understanding of them;

c) is the most complex form of symbolization possessed by man.

For Piaget, language is not the only communicative medium that enables intellectualdevelopment.

Jerome Bruner's (1956, 1966, 1968, 1973, 1983, 1986, 1987) conceptual model is significantly grafted into Jean Piaget's theoretical conception.

Bruner views language as a tool of thought and a means of communication.

Language is the final symbolic stage by which the child represents and develops thought, since learning starts with concrete experiences and then arrives at abstract conceptualizations.

Moreover, according to Jerome Bruner, language has the fundamental property of being the means by which the child mentally processes reality and returns to reality through the socialcommunication of its reasoning.

A further development of Bruner's theory is given by Howard Gardner (1983, 1988, 1993, 1999, 2004, 2005, 2006, 2013), who considers the Linguistic Intelligence as a specific tool of auditory-vocal thinking, therefore promotes a particular form of mental processing andreasoning.

Language uses specific mental capacities and physiological structures such as to developa particular form of intelligence, which can be referred to as "*Linguistic Intelligence*".

Howard's theory is based on the conception that. The Linguistic Intelligence is developed through relationships and social experiences.

The meaningful exchange of messages between people on a cognitive and emotional level, allows to communicate contents and concepts expressed through cultural and psychic symbols that go beyond what has been communicated linguistically.

The study of this type of communication allows the researchers of the Palo Alto School to define the concept of Metacommunication. and in particular to Paul Watzlawick and collaborators (1967, 1974, 1976, 1977 a-b, 1983, 1984, 1986) allows us to define the fundamental axioms of human Communication. Linguistic Intelligence and Metacommunication are the main fields of study and application of Psychology of Communication and Communication Sciences. The connections of Neurolinguistics theories with Social Cognitive Psychology theories and with Communication Science theories are multiple and interdependent in a way that createsone complete and complex model, as depicted in the following conceptual representation.

Figure 2: STUDIES ON THE EVOLUTION OF LINGUISTIC INTELLIGENCE

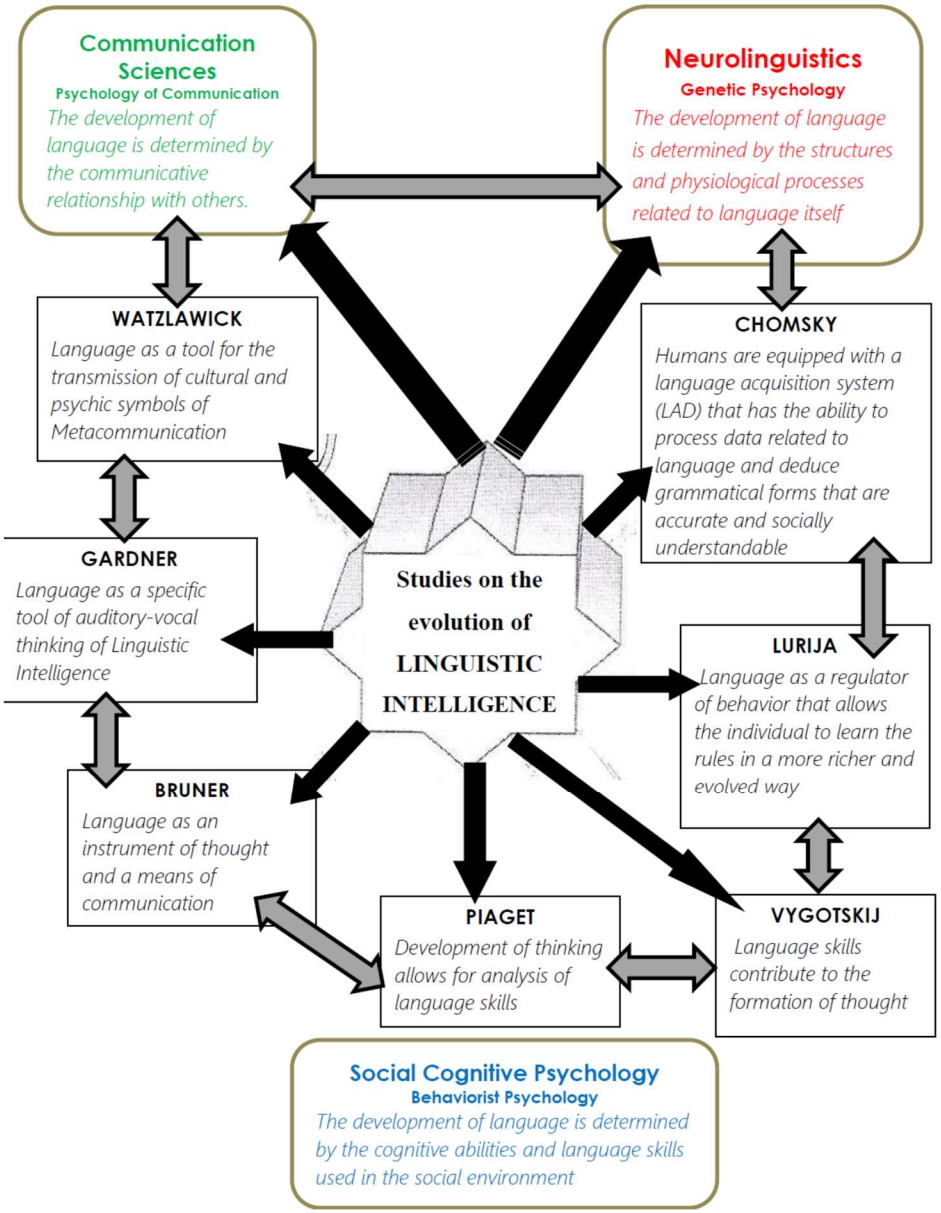
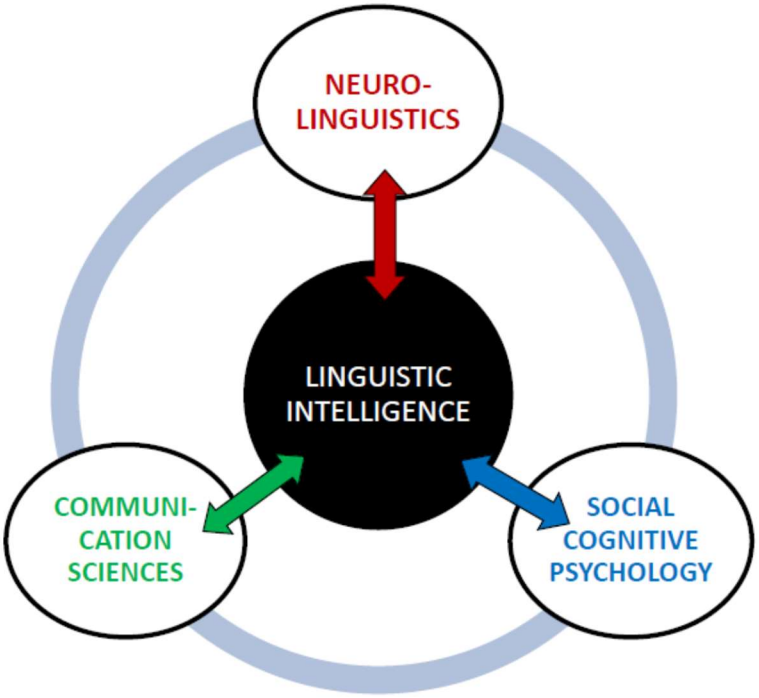


Figure 3: THE DISCIPLINES OF LINGUISTIC INTELLIGENCE



B. THE PSYCHOLOGICAL SCIENCES OF COMMUNICATION

Communication is defined as: the process that transmits messages from an issuer toa receiver, which in turn transmits a response to the issuer creating thus a continuous, dynamic and interacting communication cycle.

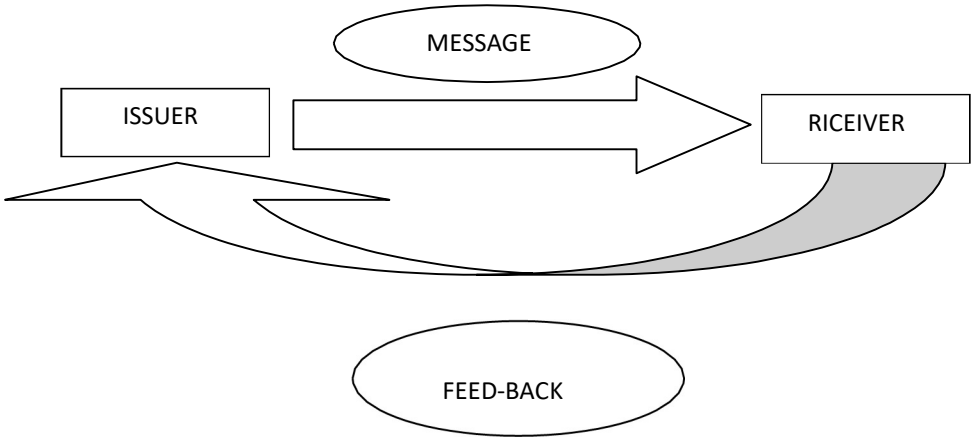


Figure 4: *The communication cycle*

The "communication cycle" is:

- The basic element on which dynamic interactive relationships between people are formed,
- The fundamental principle of the Communication Sciences.

Communication is the vital process for the psychic-mental-social development of people.

Communication is the process that involves the entire personality of each individual and the relationships it implements in the environmental-social-cultural-economic context.

Thus, communication is the *necessary and indispensable process of living socially*,which is carried out by people at every moment of the day.

In the first axiom of the Psychology of Communication, the theory of which was developed in the Palo Alto School (mainly by Paul Watzlawick along with Deavila Jackson and Janet Beavin in the book of 1967, "*Some Tentative Axioms of Communication.* In *Pragmatics ofHuman Communication - A Study of Interactional Patterns, Pathologies and Paradoxes*"), is stated "YOU CAN'T NOT COMMUNICATE", which concretely means: people always communicate-even when they remain silent.

Communication consists of messages composed of ideas, statements, directions, concepts, and mental representations, and is connoted by two different aspects (Watzlawick, Beavin, Jackson, 1967):

1. One aspect is characterized by the "information" of the cognitive contents that are transmitted/received
2. The other aspect is characterized by the emotionality of the transmitter and the receiver.

I would add a third aspect that determines the process of Communication, characterized by the flexibility and adaptability that each person possesses in the relational dynamic with theother.

The message that the issuing person transmits and the receiving person acquires acquiresis connoted by the *dynamic cognitive/emotional relationship* between people, as it depends:

a. from what he thinks, from what emotional state, from the modes and communication skillsthat individuals possess at that moment ("*here and now*"),

b. by what each person actually and concretely transmits and by his or her ability to listen toand receive the messages received;

c. from the social context, the goal, and the relationship that exists between the issuer and thereceiver.

Tuning between people is an indispensable characteristic in their dynamic relationship; often communication problems arise between two individuals, since there is no tuning betweenwhat the broadcaster thinks he has transmitted and what the receiver thinks has been expressed.

Numerous Communication Sciences studies state that to decrease and/or eliminate communication and relationship issues, is necessary for people to be able to convey messages having the following characteristics:

- The *clarity* and *simplicity* of what you communicate,
- The *coherence* and *logical organization* of concepts,
- The *effectiveness* and *meaningfulness* in conveying content,
- The *involvement* and *motivation* in the relationship between issuer and receiver.

Communication Sciences and Psychology of Communication study the *dynamic cognitive/emotional relationships* of people and the *ability to transmit/receive messages* expressed in communicative codes structured in symbols.

Symbols are the basic elements in the communication process, are processed mentally and then expressed socially to people capable of decoding and understanding the cognitive information contained and the psychic emotionality experienced.

C. LINGUISTIC INTELLIGENCE

Linguistic Intelligence is determined by typical forms of thinking and reasoning, which adopt particular mental abilities and specifics expressive competences with respect to other communication codes, such as the graphic-pictorial, the mimic-gestural, the musical, etc.

The structures, properties, and expressions of Linguistic Intelligence, that characterize theconception, construction and formalization of verbal or written communications betweenpeople, can be analysed on the basis of three different fields of studies:

A) PSYCHOLINGUISTIC: study the psychological characteristics and rules of codification and decoding of language.

The PsychoLinguistic allows to highlight the mental processes, cognitive abilities and linguistic procedures that individuals put in place during the conception-elaboration- description-definition of stories (*psycho-cognitive-pragmatic field of study of linguistic communication*).

PsychoLinguistics is connoted by 4 models: *Structuralist Cognitivism*, *Empirical Taxonomy*, *Generative Neurolinguistics*, *Linguistic Metacommunication*;

B) LINGUISTIC CREATIVITY: study the kind of original, personalizing, contextualized, and multifaceted solutions that people live and represent themselves on a mental level according to their Psychic World and Mental Universe (*psycho-ideative field of study of linguistic communication*).

The Creativity is determined by the mental processes of *Constructive Intelligence* and

Generative Intelligence.

The mental processes that characterize Creativity are: the *Global Perception*, the

Personalizing Insights, the Multifaceted Vision, the Cognitive Originality;

C) LINGUISTIC METACOMMUNICATION: study the types and modes people use to express thoughts and concepts that go beyond, beyond, what the cognitive and affective contents mean at the level of language and communicative message.

Metacomunicative Analysis enables us to understand and reflect on the personal beliefs, emotional processes, and social relationships of each person (*psycho-emotional and socio- cultural field of study of linguistic communication*).

Linguistic Metacommunication is determined by mental symbols (cultural symbols andpsychic symbols) that the person processes and expresses during communication.

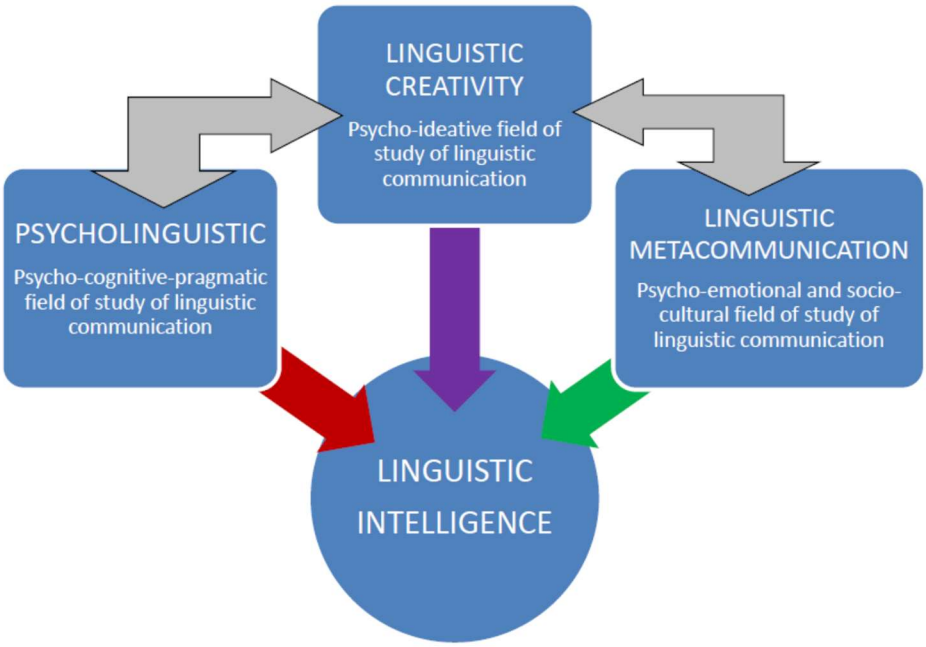


Figure 5: The fields of study of linguistic intelligence

D. PSYCHOLINGUISTIC

PsychoLinguistics is a discipline born to develop and to plan psychological research onlanguage, in particular the characteristics and rules of Communication Sciences during the perceptive learning processes, the cognitive processing processes and the social communicationprocesses.

PsychoLinguistics aims to study how the Mental Universe and the Psychic World of the individual are structured and expressed through language. (Presutti, 1980)

PsychoLinguistics studies and experiments how communication skills in the linguistic field are acquired and produced starting from the personal experience from the subjective experience and the specific abilities of an individual. It is a discipline that seeks to understand how words-phrases-stories are formed, how they are structured and how they are expressed while speaking and listening, writing and reading.

The main psycholinguistic studies can be classified in four different directions, which canbe classified in the following models:

1) the Structuralism Cognitive view of Ferdinand de Saussure (1916), exposed since theearly 1900s, which influenced the study of linguistic disciplines.

Saussure's theoretical model is characterized by a distinction between descriptive ("synchronic") language analysis and historical ("diachronic") language analysis.

Saussure highlights the importance of synchronic analysis of language and its components, since language is understood as an autonomous and timeless system.

Another fundamental reflection of Saussure is the distinction between "langue", that is the system of rules that govern the use of language in a particular social group, and "words", that is the concrete linguistic act that is carried out individually in a given context experiential.

While the "langue" is an abstract system based on social convention, the "word" is a specificact which is influenced by personal and cultural conditionings that form the individual and make it original, unrepeatable, a source of linguistic innovation. While the "langue" represents the social language of the entire community, the potential linguistic "treasure" towhich everyone can draw, the "words" is instead the individual creative potential that underlies the acquisition of language skills, which allow formulate sentences that are grammatically correct.

Jean Piaget (1923, 1947, 1968) takes up the theoretical model on the structuralism of Ferdinand de Saussure, inserting it within the psychogenetic evolution of children's mental abilities and the cognitive development of learning.

2) The Empirical Taxonomy view of Leonard Bloomfield (1933), whose

theoretical model is characterized by a taxonomy of language learning methods.
Bloomfleld founded Linguistics as an empirical and independent science from other disciplines, although it could not be studied separately from the influence of other disciplines.
Bloomfield has used in particular the principles of behavioural psychology applied to language, carrying out a taxonomic study of linguistic characteristics and rules, ignoring their deep and universal structures and eliminating any introspective reflection.
The linguistic units are considered regardless of their meaning, with the aim of systematically identifying the criteria for mutual connection and variation of the guiding elements. In this way the linguistic units and their combinations, in the formation of words- sentences-stories, are set within a defined and identifiable taxonomic level.
Giuseppe Francescato (1970) presents effectively the theoretical model on the conception ofBloomfield Linguistics

3) The Generative Neurolinguistic vision of Noam Chomsky (1957, 1966/68, 1975d), whosetheoretical model is characterized by the conception that language is structured in a formal way through the use of a "generative grammar" that allows:

- the possible expressions of a language, with consequent enrichment of the vocabulary andthe meaning of the words;
- the construction of a system of linguistic production rules, with the consequent acquisitionof the correct syntactic formalization;
- the explicit description of the linguistic structure of these expressions, with the consequentdevelopment of communication skills (speaking you learn to speak).

According to Chomsky's model, what is spontaneously generated by an individual's grammatical system must be able to be compared with the expressions of the reference linguistic group, which will judge which words and which sentences are acceptable.

4) the vision of Linguistic Metacommunication by Umberto Eco (1968. 1994), whose theoretical model is characterized by the identification of the point of view in which the "I narrating" is posed, which conceives and constructs the stories. (Eco, 1994 p. 19).
Eco highlights the psychological involvement of cognitive understanding of both the speaker-writer and the reader and the various dynamics that it causes to arise in theconception and construction of a story.
The "I narrating" of a communication can speak or write in the first person or describe usingreal or invented characters or tell a story that was told by a real or invented character, whichin turn can refer to a story exposed by a real or

invented character ... and so on, in a series ofmirrors that one is reflected in the other without being able to understand who the narrator is.
In fact, the narrator has a listener or an Ideal Reader (also called Implicit Reader, Virtual Reader, Metal lector) to whom he addresses himself and to whom he thinks of communicating his linguistic messages.
Correspondingly, even the listener or law constructs an Ideal or Implicit or Virtual Author who infers the type of "I narrating" of those who transmit linguistic communications.
In this way a Linguistic Metacommunication occurs between the narrator and the listener- reader that allows them to put themselves in the perspective of who communicates.

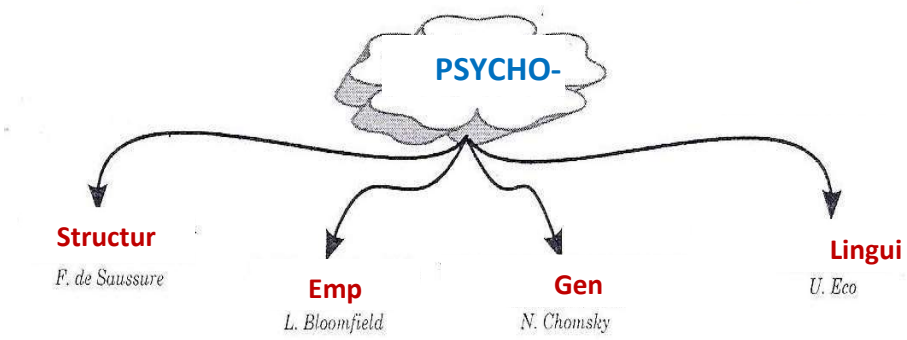


Figure 6: *The models of psicholinguistic*

E. LINGUISTIC CREATIVITY

Linguistic Creativity is determined by the psycho-cognitive-creative processes that useeither mental processing and different expressive strategies, for example, to visual creativity, musical creativity or motor creativity.

Language, having a communicative code different from that of images, sounds or body movement, necessarily implies that specific mental skills and processes are used. The difference in the code of communication and in the expressive potentials determinesthat the logical structuring of the reasoning is also different, even if the same mental processesand capacities are used.

To identify and develop Linguistic Creativity it is necessary to start from the language (code and expression) to be able to grasp the specific psycho-cognitive-ideational processes of *fantasy* and *mental imagination* that are determined both as constraints and as potentialities of expression. For example, the verbal linguistic fantasy is more magical and animistic than the writtenone because the spoken word is based on an auditory listening that arouses different sensationsfrom the visual listening of the written words ("verba volant, scripta manent"). Furthermore, linguistic fantasy is more abstract and conceptual than motor fantasy, which, instead, is more rhythmic and direct in the expression of messages.

Once highlighted and definite the field of linguistic creativity, its limits and its potential,it is necessary to enucleate the structures and mental processes that determine it.

First of all, Linguistic Creativity is characterized by the use of mental activities of

Linguistic Intelligence.

These mental activities follow two main structures: Constructive Intelligence andGenerative Intelligence.

The *Constructive Intelligence* is based on a progressive rationalization and extension ofthe initially conceived communication.

The *Constructive Intelligence* forms the basis for subsequent elaborations through a logical structuring of concepts that tends to build a complete, coherent and effective message.

The *Constructive Linguistic Intelligence* is characterized by a continuous abstraction andmental generalization of the expressed contents.

The structuring of mental activities of constructive intelligence is organized according tothe rules and characteristics of the *Logic of Knowledge* (left hemisphere of the cerebral cortex).(Presutti, 1980)

The *Generative Intelligence* is based on original intuitions characterized by fluidity of thought and global imaginations that often allow the creation of creative and multiformcommunications.

The *Generative Linguistic Intelligence* allows complex and dynamic ideas that allow thecreation of personalized concepts and express messages.

The structuring of the mental activities of generative intelligence are organized accordingto the rules and characteristics of the *Imagination Logic* (right hemisphere of the cerebral cortex). (Presutti, 1980)

It should be noted that the term *Irrationality* does not correspond to *Creativity*.

Irrationality is the intellectual process that is opposed to the rational ones, characterizedby the use of logical rules of reasoning in a manner opposite to that conventionally accepted.

Thus, *Irrationality* arises from the use of the rules of *Logic of Knowledge* with the functional characteristics of *Imagination Logic.*

Linguistic Irrationality arises from the autonomy of ideations, from spontaneous associations that express concepts and meanings without respecting the constraints of the linguistic code, but which play freely with logical rules, so as to grasp the eccentricity(absurdity, paradoxes, nonsense, hyperboles, etc.,).

Examples of irrational concepts can be:

- "human" = man-shaped hand,
- "kite" = large eagle kept on a leash,
- "vitamin" = an explosive life.

The mental processes (psycho-cognitive-ideational) that characterize Linguistic Creativity are:

1.the ***Global Perception***: mental process that tends to give a single linguistic definition of the "whole" without analysis and distinction of the parts that compose it, characterized by a subjective vision or by a heuristic and syncretic imagination based on an immediate mental word / image;

2.the ***Personalized Insights***: mental process based on an extemporaneous linguistic communication, characterized by a fluid and engaging ideation of the subject's experience based on the social stimulation and the interests of the individual;

3. the ***Multiform Vision:*** mental process of processing multiple messages starting from the same content, with different possible communications and different linguistic paths, based on the flexibility and independence of association of properties and concepts expressed;

4. the ***Cognitive Originality***: mental process of ideation based on the innovative transformation of knowledge already acquired, on a new organization and structuring of knowledge and / or information or on new knowledge placed in unusual areas.

Figure 7: PROCESSES AND STRUCTURES OF LINGUISTIC CREATIVITY

To achieve results and/ or obtain solutions characterized by Linguistic Creativity it is necessary and indispensable that all four processes are used or at least two of the four mental- cognitive-ideational mental processes (Cognitive Originality, Global Perception, Personalized Insights, Multiform Vision).

The 4 psycho-cognitive-ideational processes described above are the basic foundations ofany expression of Creative Intelligence (Linguistic Intelligence, Visual Intelligence, Motor Intelligence, Mathematical Intelligence).

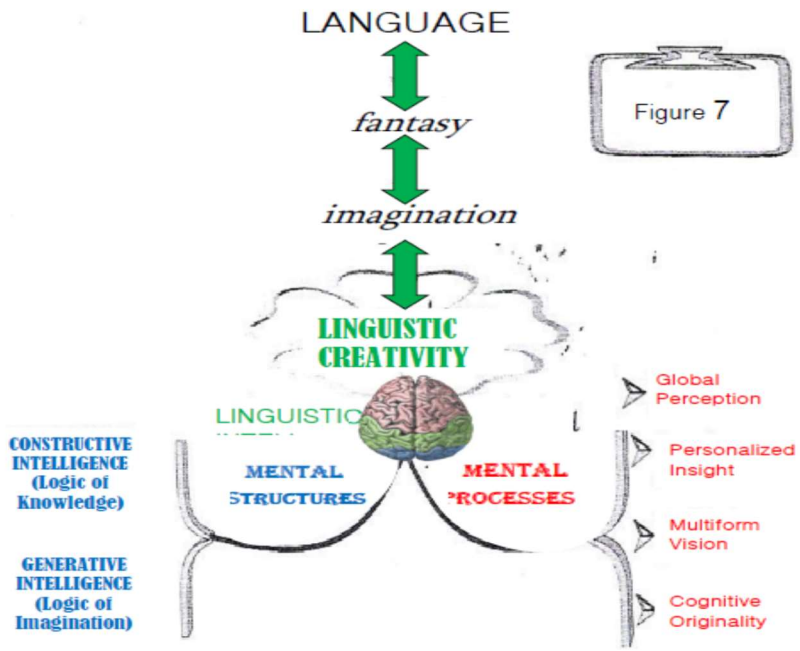


Figure 7: *Processes and structures of linguistic creativity*

F. LINGUISTIC METACOMMUNICATION

The mental activities of Linguistic Metacommunication are determined by communicative forms of thought and reasoning specific to Linguistic Intelligence.

In fact, the mental activities of Linguistic Metacommunication differ from the mental activities of other human communication codes, such as Visual Metacommunication and Mimic-Gestural Body Metacommunication, because language has specific neuromental rules and characteristics for its activation and use.

The basic elements of Metacommunication are mental symbols structured into *communication codes*, that can be understood by surrounding people and and that characterizethe values of the socio-cultural community to which one belongs.

The symbols that are formed and used in language take on different forms and characteristics than, for example, visual symbols (ideograms) and body symbols.

In addition, the different communicative characteristics and rules between verbal and written language must be considered, that determine the differentiation of linguistic symbols into two categories: the *orally expressed symbols* and the *written symbols*.

The rnetacommunicative processes (= *symbolic mental activities*) and metacommunicative analysis (= *reflection on symbolic communication*) are characterized by introspection and feedback (= *retroactive verification*) on the contents and messages of the Psychic World and the Mental Universe expressed by the individual. (Presutti, 1980).

Reflection on communicative messages transmitted allows us to develop new ways of using memory and imagination, to build new possibilities for thinking and actingto hypothesizenew strategies of reasoning and operating procedures.

Both verbal and written language have a fundamental importance in making the meta- communicative processes mature and evolve as it allows identifying and defining the conceptsdeveloped and the messages produced.

Studies on the formation of the symbol, that is on the development of the "semiotic function" during early childhood (Piaget, 1923, 1947) have been taken up by authors of the Piagetian School (Inhelder, Lezine, Sinclair, Stambak, 1972) who have tried to specify the evolutionary stages of the first symbolic behaviours in the child.

The appearance of symbolic behaviours can be identified:

- already starting from the second year of life of children observing the spontaneous manipulation of objects
- from the third year observing the spontaneous structuring of the symbolic games that childrencreate with their companions.

As described in the preceding paragraph, the human brain is structured on two cerebralhemispheres, in which the Metacommunication is processed and expressed through:

- the *content information*: regulated (encoded and decoded) by the Logic of Knowledge, that structures mental processes characterized by Constructive Intelligence, that elaborates andexpresses *cultural symbols*;
- the *subjective emotionality*: encoded and decoded by the Logic of Imagination, that structures mental processes characterized by Generative Intelligence, that processing andexpressing psychic symbols. (Presutti, 1980)

Metacommunicative processes are characterized by the conception and use of mentalsymbols, and in particular of psychic symbols and cultural symbols.

The acquisition, formation, development, and expression of *mental symbols* (*psychicsymbols* and *cultural symbols*) are determined by:

1. the rules and characteristics of Communication processes,
2. how brain structures and the mental strategies function, that determine and use mentalsymbols during metacommunicative relationships.

The definition and description of the properties and functions of *mental symbols*, composed of *psychic symbols* and *cultural symbols*, is the topic covered in a subsequent Psychology article.

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THE SIGNIFICANCE AND INTERPRETATIONS OF DIDACTIC COMMUNICATION IN AN ONLINE ENVIRONMENT

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Abstract: *The educational process, as a communication relationship, involves the teacher-student interaction as well as the transmission of messages between them. The success of the pedagogical act is largely conditioned by the success of the communication act. The conduct of teaching activities in the past two years in which, globally, humanity has been facing the coronavirus pandemic, has undergone changes imposed by the need to replace or supplement the classic educational action of face-to-face teaching through online teaching activities.*

The problem we submit for analysis is the effectiveness of didactic communication carried out in the conditions of instructive-educational activities in the online environment, reflected in aspects such as: teacher-student interaction, feedback, and educational message. Following a semi-structured interview applied to groups of first- and second-year students, we devised the items of a questionnaire through which we aimed to identify the students' perception of the effectiveness of didactic communication in the context of online instructive-educational activities. The aim of the investigation was to identify the extent to which the elements that ensure the premises of effective didactic communication are also found at the level of instructive-educational activities carried out in the online environment. The students' answers highlight their observation that, in the online teaching activities, the didactic communication between teachers and students takes place within certain limits: the nonverbal communication cannot be present or visible most of the

time; the transmission of messages from teacher to student predominates to the detriment of teacher-student and student-student communication, interactions. The changes that occur in didactic communication within the context of teaching activities conducted online are natural consequences of the specificity of this manner of carrying out instructive-educational activities.

Keywords: *didactic communication; instructive-educational process; online environment; online teaching activities; the nonverbal communication; feedback.*

Introduction

Didactic communication is seen today as one of the main resources of the instructive-educational process. It represents a part of the latent contents of the formative process, having the power to either diminish or potentiate the formal contents. A good teacher must have not only a thorough knowledge of the subject but also the ability to transmit knowledge logically and convincingly, in order to ensure the development of the students' intellect and their interest in knowledge.

The educational process, as a communication relationship, involves the teacher-student interaction as well as the transmission of messages between them. The success of the pedagogical act is largely conditioned by the success of the communication act.

Characteristics and significance of the didactic communication

Didactic communication is an instrumental type of communication achieved through verbal, nonverbal, and paraverbal means, and it is directly involved in supporting a systematic learning process. It is a distinct form, required in conveying certain contents, specific to a systematic and assisted learning act. (Agabrian, 2008). From the perspective of formal education, didactic communication is the basis of the teaching-learning process within

the institutionalized framework of the school and between partners with determined status roles: teachers, pupils/students, etc.

Didactic communication is a specific form of communication that differs from other types of communication, a fact which confers a certain specificity to it (Postelnicu, 2000; Cosmovici, Iacob, 1998; Enache, 2019; Șoitu, 2002):

- It is a type of classroom communication, taking place in certain school circumstances, i.e., it is subordinated to the requirements and rules within the educational process;
- It aims at achieving precise instructive-educational objectives by assimilating the informational content and respecting the didactic principles (communication is permanently subordinated to the pursued didactic objective);
- It has a bilateral character - that is, each of the two poles (transmitter and receiver) can transmit and receive information, knowledge; however, the transmission and reception have different meanings and roles from one pole to the other;
- It takes place multimodally: frontally, in groups, or individually.

Furthermore, didactic communication is a relationship of intentions with a dual purpose: its goal is the correct transmission and reception of the content, but it also aims at ensuring that the message reverberates within the receiver, forming or triggering intellectual operations or certain emotional states at the level of the receiver, thus having an educational effect. The didactic message has a semantic component (knowledge) and an ecto-semantic one (affective states, attitudes, ways of appreciation, etc.). The semantic side is expressed mainly through linguistic means (words, sentences, phrases) but also through certain conventional signs; meanwhile, the ecto-semantic side is expressed through nonverbal means (mime, pantomime) and paraverbal means (accent, intonation, tone).

At the same time, a learning, educational, and developmental effect can be observed through the active involvement of the student. Didactic communication is complex, involving different forms and types of communication: verbal, nonverbal, and paraverbal. It is organized and spontaneous at the same time. However, due to the socio-professional difference between the partners, it is also asymmetrical. This is where the danger of transferring the authority of status (which is normal at the level of the educator's relationship with the class) over the contents, in the form of the authority's argument. Thus, there is a risk, especially for young students, of

considering something as true or false simply because it comes from a source with "authority" (Pânișoară, 2003, 2008; Abric, 2022).

The message is carefully selected and structured following the pedagogical logic and the logic of the corresponding science. Respecting the pedagogical logic intends to facilitate the understanding of a truth and not just its simple statement. In this regard, the teacher must make considerable efforts for the truths in their field of specialty to be understood and accepted by the children as "personal symbolic goods". In the structuring of the contents of the school curricula and the presentation of the information in the communication act, priority is given to the pedagogical logic (which aims for understanding), over the scientific one (aims for the truth), or the historical one (aims for the chronology of the scientific truths' discovery). The message is conveyed to the students through teaching methods appropriate to their level of intellectual development and level of training (Bougnoux, 2000 ; De Peretti, A., Legrand, J.A., Boniface, J., 2001).

Didactic discourse has a pronounced explanatory character, targeting primarily the comprehension of what is transmitted. The premise of effective learning is the understanding of the proposed content, this being the obligatory condition for the continuation of the learning process. Regarding the scientific contents that they will convey, teachers have an active role, because they act as a filter that selects, organizes, and personalizes the contents. We also note the personalization of the didactic communication itself, which refers to the fact that the same institutional framework, the same formal content, and the same human resources will be exploited differently and with distinct results by different teachers. Thus, the teacher will choose to emphasize one or another of the dimensions of communication: informative, relational, pragmatic, etc.

There is a permanent blend of vertical and horizontal communication, in organized or spontaneous forms, as well as a certain level of quantitative and qualitative redundancy imposed by the need for a complete comprehension of the message.

Didactic communication requires an adaptation to the context and the partner through an effort that involves evaluation, self-evaluation, regulation, and self-regulation. The process of didactic communication is regulated and controlled with the help of retrospective actions such as: feedback and feed-forward.

Methodology

The conduct of teaching activities in the past two years in which, globally, humanity has been facing the coronavirus pandemic, has undergone changes imposed by the need to replace or supplement the classic educational action of face-to-face teaching through online teaching activities.

The problem we submit for analysis is the effectiveness of didactic communication carried out in the conditions of instructive-educational activities in the online environment, reflected in aspects such as: teacher-student interaction, feedback, and educational message.

Following a semi-structured interview applied to groups of first- and second-year students, we devised the items of a questionnaire through which we aimed to identify the students' perception of the effectiveness of didactic communication in the context of online instructive-educational activities.

The items in the questionnaire through which we investigated these issues are:

- *I believe that, in online teaching activities, the didactic communication between teachers and students is carried out with certain limitations (such as: nonverbal communication cannot be present; unilateral communication from teacher to student predominates to the detriment of teacher-student or student-student interactions, etc).*
- *In traditional teaching activities, we would receive constant feedback from teachers to confirm or correct the information being discussed, while this is more difficult to do in online activities.*
- *I find that the explanations in the face-to-face teaching-learning activities are more effective because they are adapted to the needs of the students as a direct result of the interaction with them, while in the case of online activities the explanations are not as frequent.*
- *Traditional face-to-face didactic activities have a higher effectiveness due to: the presence of teacher-student interactions and student-student interactions; prompt and frequent feedback; additional explanations from the teacher.*

The aim of the investigation was to identify the extent to which the elements that ensure the premises of effective didactic communication are also found at the level of instructive-educational activities carried out in the online environment.

Research objectives:

- Identifying the characteristics of didactic communication carried out in an online context;
- Identifying the difficulties in achieving an effective didactic communication in an online environment;
- Identifying possible ways of optimizing didactic communication in an online environment.

Research hypothesis: we assume that, in the context of conducting teaching activities in an online environment, didactic communication – as the main resource of the instructive-educational process – acquires different characteristics which can influence the effectiveness of the teaching-learning activities.

Target group: the questionnaire was applied to a sample of 100 students in the first and second year of their studies at several faculties from a university in Cluj-Napoca.

Results and discussions

From the application of the items of the questionnaire intended to evaluate the students' perception regarding the effectiveness of didactic communication in the context of online instructive-educational activities, we recorded the following results:

Table no. 1: I believe that, in online teaching activities, the didactic communication between teachers and students is carried out with certain limitations

	Frequency	**%**
I agree	**63**	**63**
I partially agree	**15**	**15**
I do not agree	**18**	**18**
I do not know/No answer	**4**	**5**
Total	**100**	**100,0**

Table no. 2: In traditional teaching activities we would receive constant feedback from teachers to confirm or correct the information being discussed, while in online activities this is more difficult.

	Frequency	**%**
I agree	**59**	**59**
I partially agree	**28**	**28**
I do not agree	**10**	**10**
I do not know/No answer	**3**	**3**
Total	**100**	**100,0**

Table no. 3: I find that the explanations in the face-to-face teaching-learning activities are more effective because they are adapted to the needs of the students as a direct result of the interaction with them, while in the case of online activities the explanations are not as frequent.

	Frequency	**%**
I agree	**73**	**73**
I partially agree	**9**	**9**
I do not agree	**12**	**12**
I do not know/No answer	**6**	**6**
Total	**100**	**100,0**

Table no. 4: Traditional didactic activities that take place face-to-face have a higher effectiveness due to: the presence of the teacher-student interactions and student-student interactions; prompt and frequent feedback; additional explanations from the teacher.

	Frequency	**%**
I agree	**68**	**68**
I partially agree	**12**	**12**

I do not agree	**16**	**16**
I do not know/No answer	**4**	**4**
Total	**100**	**100,0**

The students' answers highlight their observation that, in the online teaching activities, the didactic communication between teachers and students takes place within certain limits: the nonverbal communication cannot be present or visible most of the time; the transmission of messages from teacher to student predominates to the detriment of teacher-student and student-student communication, interactions, etc. The impossibility to perceive nonverbal messages weakens the significance of the didactic communication, with direct effects on the understanding of the transmitted message, the motivation of the educated ones, and the ability to focus their attention during the educational activity. Nonverbal communication is a component of didactic communication and a condition for its effectiveness. The information is coded and transmitted through means represented by posture, movement, gestures, facial expressions, and appearance of the partners. Their reception is done visually. Eye contact is the strongest nonverbal element, considering that subjects look at each other 60-70% of the time during a conversation. Eye contact regulates the flow of the conversation, providing feedback to the subjects, expressing emotions, and providing information about the nature of their relationship. The nonverbal components of communication reinforce and refine the message conveyed through verbal utterances. These means are used especially when trying to convey emotional states or attitudes, thus contributing to the development of the relational dimension of the communication act.

Didactic communication encompasses the phenomenon of *retrospective actions* that designates recurrent actions propagated in the opposite direction – from effects to causes, from results to initial plans. These are the main ways that allow the participants to adapt to each other, to the situation, and to the intended aim. The role of feedback is to balance, streamline, and adapt structures. Among the forms of retrospective actions

present in didactic communication, two are worth mentioning: feedback and feedforward.

The inverse connection, or feedback, expresses the reciprocal conditions that are established between the behavioural manifestations of the educator and the learner's behaviour, providing the educator with information about how the transmitted messages were assimilated in order to regulate the strategy that they will adopt in the future. The information and the communication relationship is reversed - from the receiver (student) to the sender (educator). Feedback consists of the transmission of information verbally and non-verbally from students to the educator intending to regulate and self-regulate the educational process. It is the means through which aims become causalities again. Depending on the information obtained regarding the quality of the teaching-learning results, the educator adopts the appropriate measures necessary to remove the distortions, difficulties, or gaps found by: using other teaching methods and procedures; changing teaching style; presenting new explanations and examples; reiterating the explanation of the elements that have not been understood yet.

From the perspective of didactic communication, feedback can be considered as communication about communication and learning. This is explained by the fact that the didactic act requires the existence of two feedbacks:

- Feedback I: brings information from receiver to transmitter and regulates the activity of transmitting information (this can be found in any type of human communication);
- Feedback II: it is provided by the sender to the receiver in order to regulate the activity of the latter (this is particular to a communication aiming at systematic learning).

The importance and functions of the two feedbacks derive from the dual status of the sender and the receiver in didactic situations. Thus, the sender is not only a source of information but also an educator concerned with transforming the receiver based on the information provided. In turn, the student is not only a receiver of information but also a person available for transformation and educable, following a learning process that incorporates the information received as well. This is where feedback II intervenes and acts as a means of directing the learning act.

If the communication situation allows an optimal presence of each of the two feedbacks, we find:

- An increase in the effectiveness of the message/learning act;
- The establishment of a secure climate, both for the teacher (who knows how their message is received) and for the students (they can self-regulate their learning act based on the guidelines offered by the teacher);
- An improvement in the interpersonal relationship between those involved in the didactic act.

Feedforward, or anticipated feedback, occurs when the actions to solve learning tasks precede the communication of information. In this case, the students are encouraged to take the appropriate steps to obtain the necessary information: to search, research, experiment, select and retain the essential information, to formulate and verify hypotheses, to ask questions of the educator, and to ask for help.

In the context of conducting the teaching activity in an online environment, the significance of feedback is limited due to the lower frequency of teacher-student interactions. Corrections, completions, approval, or disapproval of answers may no longer be activities that permanently accompany the conduct of teaching-learning activities. The results of the students' work are visible only after longer periods of time, materializing in completed applications, elaborated works, etc., which will be evaluated by the teacher, but the results of the evaluations do not reach the student as promptly as in the case of face-to-face didactic activities. The timely identification of learning obstacles and the degree of adequacy of learning aimed at regulating the activity of the teacher, but also of the student, leads to effects such as: increasing the effectiveness of the message/act of learning; establishing a secure climate, both for the teacher (knows how their message is being received) and for the students (they can self-regulate their learning act based on the indications offered by the teacher); improving the interpersonal relationship between those involved in the didactic act.

Conclusions

The changes that occur in didactic communication within the context of teaching activities conducted online are natural consequences of the specificity of this manner of carrying out instructive-educational activities. Finding specific ways of conducting online activities that would streamline communication through fostering two-way interactions (teacher-student, student-teacher), through the permanent presence of feedback as a way to

regulate the teaching and learning activity, and through knowledge of the specific learning needs of the students and adaptation of the elements of didactic communication to them should be the desideratum of each teacher in such situations. We consider that the conduct of online teaching activities should remain as only an alternative imposed by an imperative situation for a limited period of time or a complementary way of conducting instructive-educational activities.

Biographical note

The teaching and research activities carried out currently as a Associate professor, on the major field of education sciences, materialized in teaching / evaluation educational actions (for the initial training of the future teachers), preparation of training materials (courses, guides, etc.), but also in designing and implementing research / development / training projects (especially sighting the continuous training, the primary and secondary education teachers' improvement), and in carrying out researches on topics directly related to certain issues of school education, and also in a scientific contribution materialized in a series of articles, studies published in famous national and international journals, are especially focused on the following areas of interest: General Pedagogy, Curriculum Theory, Classroom Management, Educational Communication, Educational Policies, Theory and Practice of Evaluation.

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DIFFERENCES IN THE ASSERTIVENESS LEVEL OF FIRST YEAR PRE-SERVICE TEACHERS FROM A ROMANIAN UNIVERSITY OF LIFE SCIENCES

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Abstract: *Higher education represents a stage when undergraduates are required to communicate in an assertive manner. By being assertive, they are able to cope with stress in their relationships with teachers, colleagues and administrative staff. Teacher assertiveness represents a desirable interpersonal skill having positive influence on both students and teachers. The objective of the current study was to examine assertiveness levels in university students enrolled in the teacher training program (N = 284) who completed the Rathus Assertiveness Schedule (RAS). Urban respondents reported higher levels of assertiveness than rural respondents did. Male respondents reported higher levels of assertiveness than female participants in the study. Pre-service teachers from the Faculty of Agriculture reported the highest level of assertiveness and pre-service teachers from the Faculty of Food Engineering reported the lowest level. From the perspective of distribution on study programs, respondents from Horticulture reported the highest levels of assertiveness, while respondents from Animal Husbandry reported the lowest levels. Implications of the identified distribution patterns are also discussed, as well as their impact on academic curricula.*

Keywords: *assertiveness; pre-service teachers; interpersonal skills; higher education.*

1. Introduction

Teaching is considered by education researchers among the top most stressful professions (Carroll et al., 2021; Bermejo-Toro et al., 2016). Typically, this type of stress has very different consequences: teachers' exhaustion (Harmsen et al., 2018; Skaalvik & Skaalvik, 2015), fatigue, overload, decreasing ability to engage effectively (Roeser et al., 2012), teachers' absenteeism (Woods & Montagno, 1997), and more recently, teacher victimization (Sorrentino & Farrington, 2019). However, there are still teachers who refuse to admit they feel stressed or that they attend courses/workshops for stress management, for fear of stigmatization (M. Brown et al., 2002).

To help teachers manage the stress related to the teaching profession, it could be useful to help them, as pre-service teachers, to identify and, if necessary, to increase their level of assertiveness, because the fact that high assertiveness reduces stress levels in teachers has been well established (Bowers, 1995; M. Brown et al., 2002; Austin et al., 2005; Gelberg & Gelberg, 2005). It is known that undergraduate education could be a very stressful period for pre-service teachers (García-Martínez et al., 2021), and also for other educational categories (Quincho et al., 2021).

In view of these findings, teacher assertiveness represents a desirable interpersonal skill, as well as an important element of extraversion (Costa & McCrae, 1992). Therefore, as a highly relevant social skill, assertiveness plays a significant role in establishing and maintaining functional relationships (Carstensen & Klusmann, 2021), including teacher-student interactions. At the same time, assertiveness is considered a dominant value in a successful career across a large variety of professional domains (Ghosh, 2004). However, in a study conducted by Moultrie & De la Rey (2003) with women from higher education institutions, authors concluded that assertiveness does not represent an important skill in their career development.

Assertiveness in educational settings

Assertiveness has been defined as the ability of an individual to communicate personal opinions, beliefs, wishes and requirements, while taking into consideration and respecting the same aspects in others (Alberti & Emmons, 2017). Along a potential spectrum of assertiveness, timidity and aggression represent the extremes, with audacity positioned in the mid-range of the spectrum. Audacity represents a pattern of relationships ensuring that individuals defend their rights without denying the others' rights (Voltan-Acar, 2003 as cited in Dinçyürek et al., 2012). On the positive side, assertiveness may be learned at any age, because it is not an innate trait (Galinha & São-João, 2021). An assertive person displays specific behaviours – such individuals having the tendency to be direct, decisive, forceful, and outspoken (Hu et al., 2019).

In the classroom environment, assertive teachers show confidence when speaking, presenting, or teaching the lesson, are involved in effective classroom management, display a positive and authoritative image (Thomas-Maddox, 2008), and are less perceived as misbehaving teachers (Wanzer & McCroskey, 1998). Furthermore, it is highlighted that assertive teachers generate more positive outcomes than the less assertive ones, assertiveness being positively correlated with teachers' effectiveness and competence, in a research conducted by Carstensen & Klusmann (2021).

Moreover, assertiveness helps teachers protect themselves against students' manipulations (Sheinov, 2019). Teachers' assertiveness also has a positive influence on *developing social competence,* which leads to increased cohesion in the classroom, especially in manipulative students with a sense of superiority (Martínez et al., 2016). Regardless of students' inappropriate behaviours, teachers are required to act in an assertive manner and to explicitly establish a "guide" for behavioural expectations for the students (Brown, 2004). Also, Wooten and McCroskey (1996) have found strong correlations between increased teacher assertiveness and students' increased trust in their teachers. It is equally important to highlight that this correlation is mediated by the learners' assertiveness score. In the case of students with low levels of assertiveness, there appears to be no correlation. This aspect implies the need to increase the assertiveness in students as well, which would lead to many positive consequences (Eskin, 2003).

In addition, Sucan et al. (2016), in their research regarding a possible relationship between assertiveness and Leadership Styles, concluded that there is indeed a significant correlation between assertiveness and the leadership style (Laissez-Faire leadership and Transformational leadership of individualized consideration). The sample provided for the study consisted in physical education teachers.

Teacher assertiveness is part of the personal characteristics of a "good teacher", along with humour and empathy, as concluded by Raufelder et al. (2016). Their research also highlights the students' slight preference for interpersonal qualities regarding academic aspects (motivation, comprehensible teaching, and variety during lesson). However, assertive communication is not as easily attainable as it may seem upon superficial consideration. It can be really challenging for teachers, because it involves approaching students as equal human beings and treating them with respect, even if the students will not display respect in their turn on every occasion (Oana & Ona, 2019).

Teachers' assertiveness is important in relationships with the students' parents, too. The role of assertiveness is very well noticed when the negative emotions appear as a result of discussions with parents, related to students' behavioural or academic difficulties (Adams & Christenson, 2000). Even

though most individuals try to avoid them, negative emotions are important because they actually signal a violation of our needs (Hart & Hodson, 2004 as cited in Porter, 2008). An essential aspect of the teachers' assertiveness in their relationships with parents is just accepting the *responsibility for their own needs and feelings*; not blaming the parents for their own negative feelings (Porter, 2008). In developing assertiveness in teachers and students, an essential aspect is represented by the principals and their intentions to create an adequate environment for learning, which leads to the development of assertiveness in teachers and their students (Blackwell, 2003).

Given that it represents such an important trait for teachers, a larger number of recent studies would have been expected to address in-service teachers' assertiveness. But, the larger number of papers approaching this topic date back to the 70's-90's. This paper aims at covering this identified gap in the current research and to contribute an improvement to this situation. Next, we identified articles related to pre-service teachers' assertiveness, because it is an essential stage in helping them become more assertive.

Another purpose of teaching departments should be to help students *feel prepared* for the teaching career (Kantrovich, 2007, as cited in McIntosh, 2017). As shown in a research conducted by Dinçyürek et al. (2012) on a sample consisting of language pre-service teachers, there is no significant correlation between pre-service teachers' level of assertiveness and academic success. Another research conducted by Oana and Ona (2019) based on a sample of pre-service teachers at the Faculty of Music and the Faculty of Visual Arts and Design emphasizes that assertive didactic communication has a strong influence on the development of the democratic didactic style. The researchers concluded that the ability to establish boundaries or to say "no" appears to be underdeveloped in pre-service teachers.

As many teachers in the Departments of Teacher Education have reported, a large number of undergraduates have had positive experiences in facing challenges, having developed such abilities in high-school, secondary education or within their family contexts. Nonetheless, there are quite a few students with no experience in this area, and they face a number of problematic issues (Exner, 2002). In this context, we highlight the crucial role of adults, including both parents and educators, in individual's lives, especially in assisting them to become more assertive by developing emotional intelligence (Evans, 1959; Kolb & Handley-Maxwell, 2003). In achieving this goal, teachers and counsellors should systematically provide assertive situations (communication and discipline) and training for children in elementary school (Avşar & Alkaya, 2017; Kashani & Bayat, 2010), secondary school (Vatankhah et al., 2013), high school (Keliat et al., 2015), and tertiary education (wa Bofelo et al., 2013) or to adapt the curricula for pre-service teachers (Milovanović, 2016).

As a result of analysing the data provided by scientific studies regarding assertiveness in pre-service teachers', we recognise the need to develop assertive communication skills by the end of the teaching preparation program. In addition, some gaps have been identified in assessing assertiveness in pre-service teachers from life science universities, except for one study in the field of Veterinary Medicine (Gelberg & Gelberg, 2005) and the study conducted by Peneva and Yordzhev (2014) in the engineering domain, respectively.

Study rationale

1. The first aim of the research was to measure the level of assertiveness in the first year students enrolled in the program for the teaching career. The students enrolled in this module will also be awarded a teaching diploma, besides the qualifications in engineering, as biologists or veterinary physicians. This study is a continuation of the research conducted by Samfira (2020), supporting the studies which have assessed the level of assertiveness in pre-service teachers (Milovanović et al., 2016; Karagözoğlu et al., 2008; Rodriquez et al., 2001). The researchers have used the same Rathus Asseertiveness Schedule and the students' ages ranged between 20-30 years old, very similar with our study.
2. The second aim is to identify differences in the mean assertiveness score from a socio-demographic perspective (gender, residence, age, faculty, study program).

Research questions

This paper seeks to address the following research questions:
(RQ1) What is the students' mean assertiveness score?
(RQ1a) Are there any differences between students, regarding gender?
(RQ1b) Are there any differences between students, regarding their places of residence?
(RQ1c) Are there any differences between the students, regarding age variability?
(RQ2) Is there a correlation between the students' mean assertiveness score and the type of faculty / study program?
(RQ2a) Which faculties have the highest and lowest mean assertiveness score?
(RQ2b) Which study programs have the highest and lowest mean assertiveness score?

2. Methodology

Participants

For this research, we recruited 284 first year students from an agronomic and veterinary medicine university, who are enrolled in pre-service teacher preparation programs. Demographic data shows that most participants are

female (66.5%), coming from the urban environment (60.6%), and from the Faculty of Food Engineering (22.5%). The students' average age was 19.78 years (SD = 1.65). Additional details regarding the study sample are presented in Table 1.

Table 1. *Sample demographics*

Variable	N	Mean	SD	Min/Max	%
Age (Total)	284	19.78	1.65	18/28	100
Male	95	19.82	1.59	18/28	33.5
Female	189	19.76	1.68	18/27	66.5
Residence (Total)	284				100
Urban	172				60.6
Rural	112				39.4
Age (Total)	284				100
Agriculture	59	20.01	1.68	18/25	21.0
Horticulture & Forestry	33	19.75	1.56	18/27	11.6
Veterinary Medicine	59	19.25	1.04	18/26	20.2
Animal Husbandry & Biotechnologies	32	19.81	1.46	18/24	11.3
Management and Rural Tourism	37	20.51	2.26	18/28	13.5
Food Processing	64	19.62	1.67	18/27	22.4

Instrument

The Rathus Assertiveness Scale (RAS) developed by Rathus (1973) was used to measure the students' assertiveness level. The questionnaire, consisting in 30 items, (e.g. "*I have hesitated to propose or accept dates because of "shyness""; "If a famed and respected lecturer makes a comment which I think is incorrect, I will have the audience hear my point of view as well")* is suited for university students (Thompson & Berenbaum, 2011). The items are scored from *very characteristic for me* to *very uncharacteristic.* There are 17 reverse items. The total score of the scale is obtained by summing up the numerical response given for each item. Scores on RAS can vary from +90 (most assertive) to -90 (least assertive). Test-retest reliability of RAS is .78 which indicate a high stability, but Gustafson (1992) has found that the original RAS was more reliable (r = .82). Split-half reliability is .77 suggesting that RAS has moderate to high homogeneity (Thompson & Berenbaum, 2011).

Procedure

Participation was based on the students' voluntary consent and they were assured that could give up the study without any negative consequences. The students filled in the questionnaire at the end of the Educational psychology course. The questionnaire was administered individually, in a paper-and-pencil format, between November 2019 – January 2020. The pre-service

teachers who participated in this study had the opportunity to choose between receiving a bonus point in their exam score or to receive a written report of their results, after completing the research. There was no time limit for completion.

Data Analysis

Data processing was employed in analysing the research questions by using SPSS 19 (Statistical Package for Social Science) for Windows. Descriptive statistics, independent samples t-test, and correlations were performed.

3. Results

What is the students' mean assertiveness score?

We first examined the students' general level of assertiveness, to be able to answer the first research questions (1, 1a, 1b, and 1c), which aim at existing differences between pre-service teachers' level of assertiveness, according to demographic data - gender, residence, and age. The results indicate that the mean assertiveness score in pre-service teachers was 3.32 (max. 64; min. -61).

Next, we examined the mean assertiveness score separately for male and female pre-service teachers. After analysing mean scores, it stands out that male pre-service teachers are much more assertive than female pre-service teachers (M male = 6.65; M female = 1.65). The correlational analysis shows that, from a gender perspective, there was a significant correlation between male and female pre-service teachers, the Pearson correlation coefficient – r (282) = -.09, p = .048, one-tailed test.

Regarding students' residence, we found that urban pre-service teachers are more assertive than rural pre-service teachers (M urban = 4.81; M rural = 1.04). The correlation analysis and t test indicate that there is no significant statistical difference between urban and rural pre-service teachers (t = 1.30) regarding the place of residence. As regards the age range, results suggest that there is a significant positive correlation between age and the assertiveness score in pre-service teachers –r (282) = .12, p = .02, two-tailed test.

After having established the gender, residence, and age differences between pre-service teachers, we examined the next three research questions (2, 2a, and 2b):

Is there a connection between the students' mean assertiveness score and the type of faculty / study program?

Regarding differences depending on the type of faculty students have chosen to attend, the results show that, indeed, there are differences between pre-service teachers (see Table 2 for details). According to the results, the pre-service teachers from the *Faculty of Agriculture* are the most assertive students, while the students from the *Faculty of Veterinary Medicine* and the *Faculty of Food Processing* are the least assertive students.

Table 2. *The students' level of assertiveness depending on the type of faculty*

Faculty	**Mean**	**N**	**SD**
Agriculture	9.10	59	19.33
Horticulture & Forestry	7.69	33	21.12
Animal Husbandry & Biotechnologies	2.18	32	22.62
Management and Rural Tourism	1.51	37	29.45
Veterinary Medicine	0.35	59	26.25
Food Processing	0.10	64	22.98
Total	3.32	284	23.79

From a comparative perspective of the programs of study, the highest assertiveness score was identified in the faculty of *Horticulture (M = 19.33)*, and the lowest assertiveness score was identified in the *Faculty of Engineering and Management in the Tourism Industry (M = -2).* The means for all programs of study are presented in Table 3.

Table 3. *The students' level of assertiveness depending on the study programs*

Study program*	Mean	N	SD
Horticulture	19.33	6	15.74
M.E.A	14.40	5	24.17
Agriculture	14.10	10	18.95
L.S.C.	12.22	9	13.46
Forestry	9.56	16	20.56
G.E.	8.20	5	16.43
E.E.P.A	8.00	7	28.32
Biology	7.04	23	18.05
Biotechnologies	6.42	7	22.40
E.E.A.	6.33	9	25.84
E.M.P.C.A.	1.23	17	36.10
Veterinary Medicine	0.35	59	26.25
F.P.T.	0.10	64	22.98
L.A.	- 0.60	5	13.39
Plant Protection	- 0.80	5	19.99
Animal Husbandry	- 1.07	26	24.89
E.M.T.I.	- 2.00	11	21.61
Total	3.32	284	23.79

***Note.** M.E.A. = Machinery and Equipment for Agriculture; L.S.C. = Land Survey and Cadastre; E.E.P.A. = Environmental Engineering and Protection in Agriculture; E.E.A. =

Economic Engineering in Agriculture; L.A. = Landscape Architecture; G.E. = Genetic Engineering; E.M.T.I. = Engineering and Management in the Tourism Industry.

4. Discussion

RQ1-What is the students' mean assertiveness score?

We calculated the students' mean assertiveness score to find out if an intervention is necessary to help them become more assertive. Our findings suggest that pre-service teachers displayed moderate level of assertiveness, as it was observed during the *Educational psychology* course. The mean of assertiveness score exceed the ratio of 35-45% of the students in the sample presented by Nevid and Rathus (1978). Analysing the score, it appears that assertiveness is a characteristic of western culture. Assertiveness reflects an individualistic style, which is valued and promoted in western culture more than in other cultural contexts (Eskin, 2003).

The same idea is supported by Chandrasekaran et al., (2010), who, after analysing the data of ten focus group participants, concludes that, indeed, there are cultural differences in accepting an authoritarian figure (e.g. teacher). Thus, in the USA, the cultural model encourages students to be challenging and to ask questions about what is presented in the classroom. In contrast, for students educated in the Latin cultural model, it is promoted to accept the point of view of an authoritarian person, without comments. In this case, being assertive, as a student, against an authoritarian figure such as the teacher, could be seen as a disrespectful attitude. This medium to low level of assertiveness for pre-service teachers is not only a national problem, but also an international problem, as was concluded by Althen (1991). We must take into consideration that the USA and Austria are highly assertive countries, whereas Sweden and New Zeeland are less assertive countries (Javidan et al., 2006).

Analysing the derivative consequences from a behavioural point of view, it may be conjectured that assertive students are competent at saying "no" and they are also able to adapt to real life situations, to cope with the challenges in the workplace and to maintain better relationships with significant others in their life (Alberti & Emmons, 2017). Assertive students are highly aware of the consequences of avoiding face to face contact and communication with their teachers (Haynes, 2000). Assertiveness helps students argue and fight for their rights, while respecting and protecting the rights of others (Parray & Kumar, 2016).

From a gender perspective, male pre-service teachers seem to be more assertive than female participants in our study, according to the means assertiveness scores. Our findings are consistent with other studies (Erbay & Akçay, 2013; Hijazi et al., 2011; Costa et al., 2001). The reason could be deeply rooted in the cultural model, because, as shown by Amanatullah and

Morris (2010), women with low assertiveness scores are liked / appreciated more than women with a high assertiveness score. As for female competence and leadership, the level of assertiveness is required to be sufficiently high but not too high, because a high level will violate expectations of female "niceness" (Van Miegroet, 2016). Nonetheless, other studies maintain that there is no significant difference between students, as regards their level of assertiveness (using the same Rathus Assertiveness Schedule) from a gender perspective (Parray & Kumar, 2016; Shafiq et al., 2015; Arigbabu et al., 2010). It may possibly be regarded as a gender issue, considering research which concluded that female engineers were typically less assertive than male engineers (McIlwee & Robinson, 1992).

Next, we analysed pre-service teachers' mean assertiveness score from the point of view of their residence. The results indicate that students from urban environments are more assertive than students from the rural area, probably due to higher diversity and complexity in social interactions. Findings contradict the results of other studies which have found that rural students are more assertive than urban students (Shafiq et al., 2015; Asokam & Muthumanickam, 2013) and other researchers which have found no significant differences between urban and rural students, as regards assertiveness levels (Parray & Kumar, 2016).

Next, we examined assertiveness scores in pre-service teachers from an age perspective. Research on how individuals' various age ranges may affect their respective level of assertiveness is quite restricted. The correlation analysis reflects that there is a significant positive correlation between assertiveness levels and age. Therefore, it may be hypothesised that the younger students are when they enrol in the teaching program, the lower their assertiveness scores will be. However, as the age of enrolment in the teaching program is higher, the level of assertiveness also tends to increase, as students become better prepared to build positive relationships with their colleagues and future students (in practicum and in-service). Our findings are consistent with results from other studies (Atan, 2016). In contrast to our results, many other studies purport that assertiveness may decrease with age (Larijani et al., 2017; Prakash & Devi, 2015; Güven, 2010). Other studies in this area concluded that there is no significant relationship between age and the level of assertiveness (Shafiq et al., 2015).

RQ2-Is there a connection between the students' mean assertiveness score and the type of faculty/study program?

Next, we analysed the mean assertiveness score, depending on the type of faculty students have chosen to attend, so as to see in which domains students display the highest and the lowest assertiveness scores. Our results show that the pre-service teachers from the Faculty of Agriculture are the most assertive

group from our university. However, this does not mean that pre-service teachers are really prepared for the teaching career, considering that high numbers of Agriculture graduates felt unprepared to teach in the first year, as concluded by Kantrovich (2007, as cited in McIntosh, 2017)

Research conducted in the fields of agriculture and animal science concluded that the more assertive the students were, the more confrontations they had with their teachers regarding grades, as compared to the less assertive ones (White & Broder, 1988). It would be interesting to compare whether the same behaviours occur in our students. The next level of assertiveness identified in pre-service teachers from the Faculty of Horticulture and Forestry could be explained by a strong relationship between the two branches: agriculture and horticulture. In sum, our results are consistent with other findings that students in the horticultural domain tend to be highly assertive and build positive relationships benefiting their career development (Sintim, 2016; Trip et al., 2004).

On the other hand, the low level of assertiveness in the veterinary medicine students within our sample is consistent with other studies, which focuses on the necessity to organise assertive training for tertiary level students from veterinary medicine (Gelberg & Gelberg, 2005). Moreover, communication skills with clients/pet owners represent a very important aspect noticed by many graduates, upon entering the labour market (Jaarsma et al., 2008). No research on assertiveness has been identified with respect to students in the field of Food Processing.

Next, we analysed the mean assertiveness scores according to study program, in order to identify which ones prepare pre-service teachers with the highest and lowest mean assertiveness scores. The highest level of assertiveness for pre-service teachers from the Horticulture study program does not surprise us, because people have been dependent on plants since the very beginning of time, which imparts an evolutionist aspect to this effect. Consequently, pre-service teachers in this area seem to be prepared for a new domain – HT – horticultural therapy (Jang et al., 2010; Simson & Straus, 1998). This new form of therapy represents a "treatment modality that uses plant products to improve the social, cognitive, physical, psychological, and general health and well-being of its participants" (Simson & Straus, 1998, p. xxxiii). Thus, HT may offer a chance for undergraduates and graduates to work in public schools, to teach job skills specifically designed for special education students by including gardening skill sets. People with disabilities or young people who are socially and/or economically challenged could be helped by HT programs (Cipriani et al., 2017; Sempik et al., 2014; Wu & Qiu, 2013; Kim, 2007; Fetherman, 2004; Ferrini, 2003; Haller, 1998; Smith, 1998), even autism spectrum disorders (Flick, 2012).

The students from the Agriculture study program have a high level of assertiveness (on the third place). This result could reflect that pre-service teachers are adapt at stress management. As McIntosh (2017) concluded, stress management and student discipline are the main issues Agriculture teachers face in their first year. A high level of assertiveness will help Agriculture teachers, as many of them anticipated high stress for their first year of teaching (Paulsen et al., 2015). Nonetheless, the main problem for Agricultural pre-service teachers is finding a job as an agricultural science teacher, given that there are only few Agricultural high-schools compared with other countries, which provide numerous job openings in this domain (Saucier et al., 2015).

The low level of assertiveness displayed by students enrolled in the Animal Husbandry study program reflects the necessity to improve some interpersonal skills to assist them in their future profession. Some studies in the area also include communication skills, time management, self-assertiveness, and interpersonal skills (Cavinder et al., 2011). Employers seek soft skills, but the top two ranked are communication and decision making/problem solving (Crawford et al., 2011). Also, employers in livestock/animal husbandry are looking for graduates with very strong critical thinking skills (Bolton et al., 2015). In sum, communication skills represent a very important competence in all areas of industry (Almeida et al., 2020; Lappalainen, 2009), not just in animal husbandry.

Limitations of the study

Certainly, a larger sample of university students would present a clearer image of pre-service teachers from the life science teaching career. The questionnaire was completed only by volunteers among the students enrolled in the teaching program (284 students from a total of 357). The number of participants is limited from the beginning.

Implications of the study

The paper presents, for the first time, the level and the differences in assertiveness in pre-service teachers in a life science university (for all study programs). The research promotes assertiveness assessment during the first year of study in pre-service teachers, in order to have enough time for organising interventions/workshops to increase the level of assertiveness for future teachers, given that teaching requires assertiveness, as Kim et al. (2019) have suggested. As argued by Brown (2004), one of the most relevant weaknesses of career-starting teachers is precisely the lack of assertiveness in relationships with students.

Assertiveness training is useful for pre-service teachers in order to help them manage anxiety, distress symptoms, work effectively with their

colleagues and pupils' parents, and to ask support when they need (Ee & Chang, 2010). Moreover, it is equally useful for first-year students because stress represents "a factor that is able to inhibit success, affecting academic performance and interfering with psychological wellness" (Exner, 2002, p. 204).

Secondly, this research carries implications for university management with the suggestion of including communication courses in the curricula, with a special focus on assertive communication (Barton & Beck, 2005). Also, assertive communication skills are necessary because in the three-year teacher preparation program, pre-service teachers could learn about the multiple roles associated with teaching (as a guide, friend, and confidante), so as to help undergraduates adapt to current social challenges they would face across professional fields (Wade & Anderson, 1996).

Moreover, the study also highlights the lack of research assessing assertiveness in the field of engineering or biology, except the research conducted by Peneva and Yordzhev (2014). Instead, there are a lot of studies on assertiveness in medical students or nurses (Azizi et al., 2020; Omura et al., 2019), but none in domains related to engineering and life sciences.

Finally, this research joins other studies, which analyse different issues concerning pre-service and in-service agriculture teachers and related fields: animal science, agricultural management, horticulture, agricultural engineering technology (Key, 2019; McIntosh, 2017).

5. Conclusion

Overall, the present study points to the conclusion that assertiveness in pre-service teachers represents an aspect deserving more consideration in Life Science universities. Our results highlight that there are differences in pre-service teachers' assertiveness level regarding gender, residence and age. Urban respondents showed higher level of assertiveness than rural students, and male respondents presented higher level of assertiveness than female participants in the study. Also, the results indicate that the level of assertiveness increases with age, being an important aspect for novice teachers. It has been concluded that there are also major differences in pre-service teachers' assertiveness level depending on the study programs they have opted for. Although the present correlational study has mainly identified correlations rather than causal relationships in our target samples, further research would certainly lead to a better understanding of the issue. The results of the present study fill the gap regarding the issue of assertiveness in pre-service teachers within Life Science universities. Given that assertiveness represents an important aspect of teacher education, generating multiple

benefits for both teachers and students, it is necessary to improve assertive communication skills during the teacher preparation program at tertiary level.

Acknowledgments
The authors of present papers want to thank the pre-service teachers who accepted to participate in the present research.

Declaration of interest
The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Data availability statement
The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

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PERCEPTION OF THE ACADEMIC ENVIRONMENT FROM THE PERSPECTIVE OF STUDENTS' PERSONALITY TRAITS

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Abstract: *The present study sought to investigate the relationship between students' personality traits and how they perceive the various aspects associated with academic activities. Previous research indicated the importance of the perception as a mediator of personality in the relationship that students form with the requirements of the academic environment. In view of this common aspect and seeking further clarification of these relationships, the present study will investigate with a different questionnaire the personality traits in an attempt to obtain information with potential application. For this reason, the hypothesis of this research is: Students' perceptions of academic activities and interaction with teachers are associated with the presence of personality traits. This study envisages a cross-sectional design aimed at conducting a correlational type of research. The sample in question was a voluntary group of first-year students from several specializations. The results obtained did not indicate worrying values of the means for the analyzed personality traits but the analysis of the correlations between perceptions and personality traits led to the confirmation of the hypothesis highlighting a diverse picture of statistically significant correlation indices. After analyzing and interpreting the results, beyond the limitations of the study, the conclusion is that students' personality traits are associated with their perceptions and that different personalities focus on largely different aspects.*

Keywords: *perception; academic; personality; student*

Background

The academic environment has benefited from many studies but especially from studies that had as subjects students. This evolution is a result of both the research concerns manifested by academic staff or the availability

of the sample but especially of the growing importance of identifying any factors that have a significant impact on the development of the educational act and the effectiveness of learning. Despite this rich literature focused on student samples, recent studies often confirm older results but also bring new information that contributes to a better understanding of existing interactions, interactions that often evolve and may be influenced by a variety of factors.

The present study sought to investigate the relationship between students' personality traits and how they perceive the various aspects associated with academic activities.

Concerns about students 'perceptions have been analysed for a long time, students' perceptions being seen as a link between their personality and their academic performance (Odom & Pourjalali, 1997). In a more recent article, the authors emphasise the importance of students' perceptions (Van Petegem et al., 2007). Another study indicates a very close relationship between the perception of the help received and the satisfaction with the course (Lee et al., 2011). Also, studies have already been conducted that investigate the relationship between students 'personality and how they appreciate the professionalism of the teacher (Göncz, et al., 2014) or between students' personalities and their own sense of efficiency regarding academic activities (Güngör et al., 2014). Freedom and responsibility perceived by students from the teacher also influence the way students perceive their behaviour (Fisher et al., 1998). Regarding the influences of negative personality enhancements on the way the student perceives online courses, a recent study (Bhagat et al., 2019) indicates the impact of the feature of neuroticism. Such results have already been reported previously, both in connection with the feature of neuroticism and psychoticism, which are considered predictors of academic performance (Ciorbea & Pasarica, 2013). In a partially different approach, current research has attempted to identify the link between personality traits and elements of psychopathology in students (Akinci et al., 2018).

All this previous research leads to the importance of the perception as a mediator of the personality in the relationship that students form with the requirements of the academic environment. Considering this common aspect and seeking further clarification of these relationships, the present study will investigate with a different questionnaire the personality traits in an attempt to obtain information with potential application.

Hypothesis

Students' perceptions of academic activities and interaction with teachers are associated with the presence of personality traits.

Research design

This study follows a cross-sectional design aimed at conducting a correlational type of research.

Sample

This study was conducted in the first semester of the academic year 2020-2021 on a voluntary group of students who studied the Psychology of education in the first year of the psycho-pedagogical module. The questionnaire was distributed in the last week of the first semester, and 107 students were invited to participate. Of these, 28 completed the questionnaire received. The mean age of the sample was M = 27.50 (S.D. = 10.871). Given the high value of the standard deviation, the value of the median (19.50) and the mode (19) were also calculated. These values indicate a group with significant age differences between its members, the minimum value being 18 years and the maximum 50 years. The distribution of frequencies by sex indicated 19 females and 9 males. The mean age for students was M = 26.63 (S.D. = 11,558) and for students M = 29.33 (S.D. = 9,631). The calculation of the significance of the difference between the two means (T-test Independent Sample) indicated that although there is a difference of almost 3 years between the means, there was no statistically significant age difference between the two subgroups (students): t (26) = - 0.607, p = .549.

A Crosstab analysis using age and sex variables indicated the following frequencies (Table 1):

Table 1. Crosstab analysis for variabilles Sex * Age

		Age												Total
		18	19	20	28	31	32	35	37	42	43	48	50	
Sex	Feminin	2	9	1	1	1	0	1	0	1	1	0	2	19
	Masculin	0	3	0	1	2	1	0	1	0	0	1	0	9
Total		2	12	1	2	3	1	1	1	1	1	1	2	28

And, a Crosstab analysis that used the variables specialization and sex indicated the following frequencies (Table 2):

Table 2. Crosstab analysis for variabilles Specialisation * Sex

		Sex		Total
		Feminin	Masculin	
Specialisation	Public Administration	2	0	2
	Social assistance	3	0	3
	Law	1	1	2
	Physical education and sports	2	6	8
	Kinetotheraphy and special motricity	3	1	4
	Sociology	1	1	2
	Occupational Therapy	7	0	7
Total		19	9	28

Instruments

The tools used were:

a) a survey that asked about several aspects related to the perceptions, expectations and academic behaviour of students (attached in Appendix).

b) the Leonhard-Shmishhek questionnaire. This questionnaire was designed to identify one or more accentuated personality traits that a person may present at a given time. Shmishek developed the instrument taking into account the contributions already made by K. Leonhard, who indicated two categories of accentuations, some of character and others of temperament. Being a test for adults for a variety of purposes, including in the education process, it was considered a useful tool to apply to this sample of students. The number of questions is not equal for each assessed trait but are 4, 8 or 12 questions. Some questions are rated for the affirmative, others the opposite, for the negative. A trait is considered accentuated if the person provides answers to which more than half of them are considered relevant to that trait.

Both tools were introduced in Google Forms as a multi-section questionnaire. In Google Forms, the questionnaire was anonymous in order to stimulate answers as close as possible to what students feel and believe, even if this anonymity may have partially contributed to the decrease in the sample of participants.

Results

In order to be able to perform the analyses leading to the necessary results in order to test the hypothesis, it was necessary that the answers from the survey be converted into numerical variables (1 = "strongly disagree", 2 = "disagree", 3 = "somewhat disagree" , 4 = "somewhat in agreement", 5 =

"agreement", 6 = "strong agreement"), and for the Leonhard-Shmishek questionnaire to calculate the inverted scores, then the scores for each scale and finally the percentages for these scores.

The mean percentages obtained in the sample of this study for the questionnaire scales can be seen in the table below which shows that Demonstrativeness and Cyclothymia slightly exceed the value of 50%, while Hypersperseverance, Hypertension, Exaltation and Emotivity exceed 60%, even 70% in the case the last scale (Table 3).

Table 3. Descriptive Statistics for accentuated personality traits

	N	Minimum	Maximum	Media	Std. Deviation
P_Demonstrativ	28	16,67	83,33	51,1904	17,81737
P_Hyperexact	28	8,33	83,33	45,5358	19,96421
P_Hyperperseverance	28	41,67	83,33	60,4168	13,15156
P_Impulsive	28	,00	100,00	42,8571	25,09901
P_Hypertim	28	25,00	100,00	65,6250	22,97971
P_Dysthym	28	12,50	87,50	41,9643	19,60675
P_Ciclothymic	28	25,00	100,00	52,2321	23,33670
P_Exalted	28	,00	100,00	61,6071	24,98346
P_Anxious	28	,00	75,00	37,0536	23,93136
P_Emotional	28	37,50	100,00	75,0000	17,01035
Valid N (listwise)	28				

Subsequently, an analysis of the correlations between the survey items and the percentages obtained at the 10 scales of the Leonhard-Shmishek questionnaire was performed. Statistically significant correlation indices will be presented below.

Demonstrative personality has two correlations, both negatively and marginally significant indicating a dissatisfaction with the examples presented in the course (25.The teacher provides relevant examples) r (26) = -, 375, p =, 050.as well as the possibility of attend classes at the University (41.I would have preferred to have attended classes in the classroom at the University) r (26) = -, 374, p =, 050.

Hyperexact personality shows five significant correlation indices, these are presented in the following table (Table 4)

Table 4. Statistical significant correlations of variable P_Hyperexact

	P_Hiperexact	PE_18 nr	PE_21 nr	PE_24 nr	PE_28 nr	PE_30 nr

P_Hyperexact	Pearson Correlation	1	,444*	,402*	,384*	-,415*	-,389*
	Sig. (2-tailed)		,018	,034	,044	,028	,041
	N		28	28	28	28	28

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).

Note:
18. In the course discussions, the teacher has preferences depending on the ethnicity of the students
21. The teacher makes misplaced remarks or jokes
24. I participated in all classes
28. The teacher provides useful answers to the questions asked by the students
30.Students can intervene with questions, clarifications, during the course

Hyperperseverant personality shows only one significant correlation index, with the question regarding the weekly participation in seminars (9. I participated in weekly seminars) r (26) = -, 417, p =, 027

Impulsive personality presents two significant correlation indices, of the same value, the first direct, regarding the behaviour of the teacher (32. The teacher jokes without any connection with the topic of the course) r (26) =, 408, p =, 031 and the second conversely, regarding participation in physical courses (41.I would have preferred to have attended classes in the classroom, at the University) r (26) = -, 408, p =, 031.

Hyperthymic personality have obtained a single significant correlation index, with the question of managing information from the course by students (19.The volume of information presented in the course can be managed by students) r (26) = , 434, p = , 021

The disthymic personality presents a picture of only negative but much richer associations. These are shown in the following table (Table 5):

Table 5. Statistical significant correlations of variable P_Dysthymic

		P_Dysthymic	PE_5nr	PE_8nr	PE_20nr	PE_22nr	PE_26nr	PE_28nr	PE_29nr	PE_30nr	PE_41nr	PE_42nr
P_Dysthymic	Pearson Correlation	1	-,513**	-,493**	-,405*	-,592**	-,426*	-,438*	-,477*	-,398*	-,401*	-,562**

	Sig. (2-tailed)		,005	,008	,033	,001	,024	,020	,010	,036	,034	,002
	N	28	28	28	28	28	28	28	28	28	28	28

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Note:

5.The terms used in the presentation of the course are understood by most students.

8. The content of the courses is presented coherently

20. The course makes the connection between the theoretical aspects of the discipline and the daily reality.

22. The teacher shows flexibility in teaching the content

26.Students can ask questions about some concrete aspects experienced, related to the content of the course.

28. The teacher provides useful answers to the questions asked by the students.

29. The teacher interacts with the students during the presentation of the course.

30.Students can intervene with questions, clarifications, during the course

41. I would have preferred to have attended classes in the classroom at the University.

42. I can communicate with the teacher through the means provided by the university (UAB email, Teams).

The Ciclothymic personality presents only one significant correlation index, with the question regarding the participation in courses in physical format (41.I would have preferred to have attended courses in the classroom, at the University) r (26) = -, 398, p = , 036

The Exalted Personality presents a statistically rich and varied picture of significant associations. These are listed in the following table (Table 6):

Table 6. Statistical significant correlations of variable P_Exalted

		P_Exaltat	PE_4nr	PE_5nr	PE_6nr	PE_9nr	PE_16nr	PE_24nr	PE_27nr
P_Exalted	Pearson Correlation	1	,525**	,466*	,401*	,399*	-,405*	,514**	-,452*
	Sig. (2-tailed)		,004	,012	,035	,035	,033	,005	,016
	N	28	28	28	28	28	28	28	28

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Note:

4. It is required to go through the bibliography related to the course

5. The terms used in the presentation of the course are understood by most students
6. I participate in seminars
9. I attended weekly seminars
16. Seminar assignments are difficult
24. I participated in all classes
27. The teacher repeats some information too much

Anxious personality presents a single significant correlation index, with the question regarding the difficulty of the seminar tasks (16. Seminar tasks are difficult) r (26) = -, 447, p =, 017

Emotional personality in this sample does not show statistically significant correlation indices with the survey items.

Discussion

Although the analysis of the means did not reveal any particular accentuations of the personality traits (especially the negative ones), the second set of statistical analyses on the correlations between perceptions and personality traits confirmed the hypothesis by highlighting a diverse picture of statistically significant correlation. Strictly speaking from a statistical point of view, correlational analysis does not allow the establishment of a causal relationship even if statistically significant correlation indices are obtained between two or more variables. On the other hand, given that all personality theories claim that personality traits develop slowly and have a high degree of stability over long periods of time, in the case of this study, it can be assumed with a reasonable degree of certainty that personality traits of personality precede and are the cause of expressed perceptions. Comparing the results obtained in this small sample with the results already published and mentioned in the first part of this study, especially with the results of research that investigated the relationship between negative personality traits and perception. According to the obtained results, it could be said that regarding the students' perception according to the personality traits, there is a negative pole represented by the Hyperexact and Dysthymic personality and a positive pole represented by the Exalted personality. The results indicate a diverse, heterogeneous population of the sample from the perspective of dominant personality traits. It can only be speculated that this diversity or the share of personality traits found was the same in the whole group to which the questionnaire was sent or on a completely different sample. Beyond these limitations, however, strictly taking into account the results obtained, it can be concluded that the personality traits of students are associated with their perceptions and that different personalities focus on different aspects.

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Appendix

Student Perception Survey

(1 = "strongly disagree", 2 = "disagree", 3 = "somewhat disagree", 4 = "somewhat agree", 5 = "agree", 6 = "strongly agree")

1. If I could, I would give up this course
2. The course is too voluminous
3.Students can enter or exit the course at any time without being evaluated negatively by the teacher
4. It is required to go through the bibliography related to the course

5. The terms used in the presentation of the course are understood by most students
6. I participate in seminars
7. The specialised terms are explained in such a way that they can be understood by the student
8. The content of the courses is presented coherently
9. I attended weekly seminars
10. In the course discussions, the teacher favours men more
11. I went through materials from the course bibliography
12. At the seminar, the theoretical contents presented in the course are discussed and clarified
13. The teacher prefers to talk only with certain students
14. Participation in this course is a waste of time
15. I consider that the knowledge acquired by participating in the course is useful for me as a future teacher
16. Seminar assignments are difficult
17. The connection between the courses is made gradually and coherently
18. In the course discussions, the teacher has preferences depending on the ethnicity of the students
19. The volume of information presented in the course can be managed by students
20. The course makes the connection between the theoretical aspects of the discipline and the daily reality
21. The teacher makes misplaced remarks or jokes
22. The teacher shows flexibility in teaching the content
23. The course content is boring
24. I participated in all classes
25. The teacher provides relevant examples
26.Students can ask questions about some concrete aspects experienced, related to the content of the course
27. The teacher repeats some information too much
28. The teacher provides useful answers to the questions asked by the students
29. The teacher interacts with the students during the presentation of the course
30.Students can intervene with questions, clarifications, during the course
31. The teacher is subjective
32. The teacher jokes without any connection with the topic of the course
33. The evaluation method at the end of the course is difficult
34. I consider that the knowledge acquired by participating in the course is useful for me as a person
35. In the course discussions, the teacher favours women more
36. The presentation of the course is made in an attractive way for the students
37.I would have preferred to have had several partial assessments during the semester
38. The information from the course helped me to understand some things better

39. The teacher in the presentation of the course follows the written content
40. The exam simulation is useful
41. I would have preferred to have attended classes in the classroom at the University
42. I can communicate with the teacher through the means provided by the university (UAB email, Teams)

ENHANCING ACADEMIC ACHIEVEMENT OF SECONDARY SCHOOL STUDENTS IN BIOLOGY USING MNEMONIC INTEGRATED INSTRUCTION

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Abstract: *Although the use of innovative instructional methods in teaching in the 21st century has been recognized to promote the acquisition of the skills needed by individuals to survive in the modern globalized society, these methods however to an extent have failed to achieve their main aim which is geared towards helping students excel in various aspects of examination, as in using these methods alone, students tend to acquire these skills but to an extent not easily recall the simple facts needed to pass most external examinations. In this light, the researcher sought out to find out if the integration of mnemonic instructions into these teaching methods will help students recall facts easily and hence perform better in examinations. To achieve the purpose of the study, two research questions and three null hypotheses tested at 0.05 alpha levels guided the study. The study adopted a quasi-experimental research design, specifically, the pretest posttest non-randomized control group design. The population of the study comprised all the 4,627 SS2 students in the 62government owned schools in Awka Education Zone. A sample size of 43 students drawn from two intact classes were selected for the study using multi-stage sampling procedure. Biology Achievement Test (BAT) validated by three experts with a reliability co-efficient of 0.89, established using Kuder-Richardson 20, was used for data collection. The data obtained for the study were analyzed using mean and standard*

deviation in answering the research questions and Analysis of Covariance (ANCOVA) in testing the null hypotheses at 0.05 alpha level. The findings of the study revealed that integrating mnemonics into teaching methods was very effective in enhancing students' achievement in Biology irrespective of gender. Thus, it was recommended among others that biology teachers should integrate mnemonics in their classroom instruction as it makes the classroom lively, entertaining and, when effectively implemented, enhances students' academic achievement.

Keywords: *Mnemonic Integrated Instruction; Academic Achievement; Biology*

Introduction

Biology is one of the science subjects studied in Nigerian secondary schools. Asuzu and Okoli (2019) defined it as a natural science that studies the living world; how it functions, what these functions are, how living things came into existence and their interaction with each other and their environment. It is a natural science concerned with the study of life and living organisms (Nwuba & Osuafor, 2021). Hence, it is a branch of science that studies living things and their interactions with each other and their environment.

Biology, as a subject, is very important in nation building as well as scientific and technological development. Uzoma and Okoli (2019) opined that a sound knowledge of biology is needed in our everyday lives as well as in many fields of study and industries such as medicine, pharmacy, nursing, agriculture, and engineering. On a similar note, Pat-Anyaeji and Okeke (2019) emphasized that the knowledge of biology helps one in understanding the world in its natural processes and with the knowledge obtained create a better environment to live in. Hence, biology, in general, provides the knowledge applied in every sphere of life today ranging from food production, environmental protection, conservation of resources, bioengineering and agriculture, prompting its inclusion in the secondary school curriculum in Nigerian secondary schools.

Considering the above advantages and the subject's nature of little or no mathematical calculations, Akubuilo (2014) opined that the biology has popularity among students and as a result has the highest enrollment by students in external examinations when compared to other science subjects. Notwithstanding its importance and popularity among students, the recorded

performance of students in the subject in external examinations over the years has remained unsatisfactory and inconsistent as seen in the statistic report of WAEC from 2015-2019. In 2015, for aggregate of A_1-C_6, a percentage pass of 57.42 was recorded, 61.68% in 2016, 55.57% in 2017, 55.10% in 2018 and 55.63% in 2019 showing that students' performance in the subject over the years has remained slightly above average. Many researchers (Uzoma & Okoli, 2019, Ufommadu & Okoli, 2019; Nwuba & Osuafor, 2021) have attributed this unsatisfactory performance to many factors among which include lack of adequate laboratory facilities and instructional aids, unconducive learning environment, high student-teacher ratio, wide content of secondary school biology curriculum and most importantly, the predominant use of conventional methods of teaching in the classroom.

Conventional methods of teaching refer to approaches to teaching involving the teacher in front of the learner's disseminating information and the learners taking down the information. Ufommadu and Okoli (2019) described them as teacher-centred methods frequently utilized in the classroom that involves less participation on the part of students. These methods although widely recognized and utilized by teachers in the classroom because of their wide range of advantages which include faster coverage of a large content within a short time, development of students' listening, language and secretarial skills as well as their usefulness in teaching a large population according to Paris (2014) have been criticized by many because of their shortcomings in achieving a lesson stated objectives. These shortcomings of conventional methods have driven education stakeholders to search of alternative approaches that may be employed to enhance achievement of students in the classroom, this ushered in the era of innovative teaching methods.

Innovative methods of teaching are activity-based and student-centred pedagogical approaches of learning that puts the learners first and foremost in any teaching and learning process. Nwuba (2021) described them as instructional methods that brings knowledge to the doorstep of learners through actively engaging them in the learning process. Positively, In the recent times, several research reports (Nwuba & Osuafor, 2021; Odukwe, 2018) have shown that through these innovative methods, the 4C STEM (Science, Technology, Mathematics and Engineering) skills of creativity, critical thinking, collaboration, and communication are acquired effectively but a thorough perusal of the WAEC statistic reports of students in biology, as reported above, have shown that the academic achievement of students in the subject in external examinations have still not increased yet to the expectancy of educational stakeholders. In this light, the researcher advocated for the integration of mnemonic instruction into these teaching methods (both conventional and innovational) to see if it which will go a long way in helping

students remember simple biology facts and thus help improve their achievement in external examinations.

Mnemonic integrated instruction emphasizes on learning for long term retention as it is specifically designed to improve memory. Jurowski, Jurowska and Krzeckowska (2015) defined it as a memory-enhancing pedagogical method aimed at improving learning and information recall through the use of mnemonics. Solso (2005) defined mnemonics as devices that help learners learn faster, recall better while keeping learners motivated and the classroom very interesting. Hence in the context of this study, mnemonic integrated instruction can be defined as an instructional strategy that involves the inculcation of memory enhancing devices within the teaching and learning process with the aim of making learning activity-based, fun-filled, and interesting.

Mnemonic devices vary and are of different types that teachers and learners may employ. Thompson (as cited in Amirousefi & Ketabi, 2011) identified five classes of mnemonics namely: Linguistic, Spatial, Visual, Physical response and Verbal methods. Linguistic mnemonics, which include the pegword, keyword and letter methods (acronyms, abbreviations and acrostics), involve associating the new concept to be learnt with familiar words, phrases and/or sentences to help remember the concept. Spatial mnemonics, which include the loci, spatial grouping and finger methods, involve connecting the new concept to a familiar place, pattern or finger to help in memorization of the material. Visual mnemonics make use of pictures or visualizations to create an association to the target concepts (e.g. symbols, pictographs). Physical response methods make use of the body parts or gestures to aid in remembrance, either through movement or physical sensation while the verbal method uses meaning, rhymes, songs and stories in the form of grouping or semantic organization and story-telling or narrative chains to help students remember.

In his study, Koksal (2013) opined that these devices play an important role not only in the course of learning words but also in remembering the learnt words. Similarly, Lerner (2003) noted that the major difficult task in developing mnemonic strategies is the cognitive thinking needed to find a way to relate the new information to the information students already have locked in their long-term memory, but once this cognitive thinking is developed in teachers and students, the mnemonic instruction becomes easily and efficiently utilized because of its following advantages: it is an inexpensive strategy that can be used to teach a large population with learners still actively involved in the lesson, can be used to cover a large content in a short time, no specific level of teaching experience is required to learn or use the strategy and, there is no additional costs for purchase of its material or technology. In light of its advantages, this research work hinged on finding out if integrated

mnemonic instruction will help boost students' academic achievement in biology.

Academic achievement is described as the gain in one's knowledge as a result of taking part in a learning activity or programme. Uwaleke and Offiah (2013) described it as a student's performance on a standard of measurement such as performance test, skill test or analytical thinking test. This simply implies that academic achievement is a result-oriented output that explains the extent of one's performance in a desired task. In the context of this study, academic achievement therefore refers to one's performance in a test after exposure to an educational programme over a period of time irrespective of gender.

Gender is a social construct given to male and female. Ezeh (2013) described it as expectations held about the characteristics, attitudes and likely behaviour of both men and women (masculinity and feminity) in the society. Hence, gender is simply an attribute ascribed to male and female based on biological characteristics. Issues on gender influence on students' achievement in biology for over the years has remain inconsistent and inconclusive. For instance, while many researchers (Nwuba & Osuafor, 2021; Uzoma & Okoli, 2019) have reported in their various studies in biology that gender has no significant influence on students' achievement, some (Pat-Anyaeji & Okeke, 2019; Egwu & Okigbo, 2021) reported that male students achieve higher than female students in biology.

This inconclusive results on gender calls for further investigation to find out if gender influences students' academic achievement in biology or not. Therefore, in this study, gender differences in academic achievement among secondary school students' taught biology using mnemonic integrated instruction was also investigated. It is against this backdrop that the researcher deemed it necessary to find out if the use of MIS can enhance secondary school students' academic achievement in biology in Awka Education Zone.

Statement of the Problem

The role of biology in national development and wealth creation cannot be overemphasized, this is probably why most secondary schools in Nigeria offer it as a pre-vocational subject for its science and art students, aimed at preparing them for life in a competitive global economy after school. Despite these importance, students' performance in the subject in both internal and external examinations over the years have remained unsatisfactory. Many researchers till today have attributed this unsatisfactory performance of students in biology to several factors of which most emphasis has been placed on the conventional teaching methods that dominates the classrooms, which makes the teaching and learning of the subject uninteresting, and students' achievement in the subject unsatisfactory.

To curtail this trend, several efforts have been made in the past and present by the government at all levels of Education through the provision of resources as well as organization of conferences, workshops, and seminars to educate teachers on innovative methods and strategies to improve student's achievement in the subject, but still little/ or inconsistent improvement have been recorded over the years. In this light, the research sought to find out if integrating mnemonic instruction into teaching strategies will help improve students' performance in the subject.

Research Questions

The following research questions guided the study

1. What is the difference in the pretest posttest mean achievement scores of students taught biology using mnemonic integrated instruction and those taught using conventional lecture method?
2. What is the difference in the pretest posttest mean achievement scores of male and female students taught biology using mnemonic integrated instruction?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance.

1. No significant difference exists between the mean achievement scores of students taught Biology using mnemonic integrated instruction and that of those taught using conventional lecture method.
2. No significant difference exists between the mean achievement scores of male and female students taught Biology with mnemonic integrated instruction.
3. There is no interaction effect of gender and teaching methods on students' academic achievement in biology

Method

The research adopted a quasi-experimental research design. Specifically, the pretest posttest non-randomized control group research design. The population of the study comprised all the 4,627 SS2 students in the 62government owned secondary schools in Awka Education Zone, Anambra State. 43 SS2 biology students in two intact classes sampled from two secondary schools in the zone using multi-stage sampling procedure constituted the sample of the study. A Biology Achievement Test (BAT) developed by the researchers from compiled SSCE biology past questions was used for data collection. The 25-item multiple choice objective test question with four response options lettered A-D was developed using a well-structured table of specifications to ensure content coverage. The instrument (BAT) was validated by three experts (two from the Department of Science Education and one from Department of Educational foundations, Measurement and

Evaluation) all from Faculty of Education, Nnamdi Azikiwe University, Awka, Anambra State. To ascertain the reliability of the instrument, the BAT was administered to a class of 40 students in Aguata Education zone, who are not part of the study, and using Kuder-Richardson 20 (KR-20) formula, a reliability coefficient of 0.89 was obtained showing that the instrument was highly reliable.

The experiment commenced with the two intact classes sampled from two different schools in the zone being assigned to control and experimental group using a toss of a coin. After this, the BAT was administered to both groups which served as the pretest score. After the pre-testing, the actual experiment commenced with the briefing of the biology teachers who were used for the study. The teacher for the experimental group was briefed on MIS, its types and how to properly integrate the instruction when teaching in the classroom while the teacher for the control group was asked to teach as usual with lesson plans developed by the researcher. After the briefing, the teaching exercise for the two groups commenced for a period of 4 weeks. After the period of teaching, a posttest was administered to both groups, which served as the post test score. The data obtained from the two tests were analyzed using mean and standard deviation in answering the research questions and ANCOVA in testing the null hypotheses at 0.05 level of significance.

Results

Research Question One: What is the difference in the pretest posttest mean achievement scores of students taught Biology using mnemonic integrated instruction and those taught using only conventional lecture method?

Table 1: Mean Achievement and Standard Deviation Scores of students taught biology using MIS and those taught with CLM

		Pretest		Posttest		
Method	N	Mean	Std. Dev.	Mean	Std. Dev.	Gain in mean
MIS	21	12.55	0.68	19.18	0.76	6.63
CLM	22	11.48	0.76	13.86	0.88	2.38
Mean Difference		1.07		5.32		4.25

Table 1 shows the various means and standard deviation scores on achievement of students taught Biology using MIS (experimental group) and those taught using CLM (control group). From table 1 above, Experimental group had the mean achievement scores of 12.55 and 19.18 in the pretest and posttest respectively while their counterparts taught with CLM had achievement mean scores of 11.48 in the pretest and 13.86 in the posttest. The mean difference of the gains in mean for MIS and CLM, revealed that students

in the experimental group achieved higher than those in the control group with a mean difference of 4.25. The result indicated that integrating the various types of mnemonics in the lesson when teaching biology highly increased students' academic achievement more than CLM.

Research Question two: What is the difference in the mean achievement scores of male and female students taught Biology using mnemonic integrated instruction?

Table 2: Mean Achievement and Standard Deviation Scores of male and female students taught biology using MIS

		Pretest		Posttest		
Gender	N	Mean	Std. Dev.	Mean	Std. Dev.	Gain in mean
Male	8	11.87	0.93	19.50	1.12	7.63
Female	14	12.92	0.93	19.00	1.04	6.08
Mean Difference	22	1.05		0.50		1.55

Table 2 above shows that for the experimental group, the male students had a mean achievement scores of 11.87 and 19.50 in the pretest and posttest respectively while their female counterparts had 12.92 in the pretest and 19.00 in the posttest. The mean difference in the gains in mean for the male and female students taught biology using mnemonics integrated instruction is 1.55. From the gains in means, it can be deduced that male students achieved higher than the female students when both are taught selected concepts in biology using mnemonic integrated instruction.

Hypothesis 1: There is no significant difference between the mean achievement scores of students taught biology using MIS and that of those taught with CLM.

Analysis of hypothesis one is presented in table 3.

Table 3: ANCOVA Test of Significant Difference between the Mean Achievement Scores of Students Taught Biology Using MIS and those Taught Using CLM

Dependent Variable: pretest Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	304.936[a]	4	76.234	17.660	.000
Intercept	4.112	1	4.112	.953	.335
Posttest	238.985	1	238.985	55.361	.000

METHOD	49.205	1	49.205	11.398	.002
METHOD * gender	31.634	1	31.634	7.328	.010
Error	164.041	38	4.317		
Total	6685.000	43			
Corrected Total	468.977	42			

a. R Squared = .650 (Adjusted R Squared = .613)

The result of the two-way ANCOVA from table 3 above shows that the F-value is 11.98 and P-value is .002. Since the P-value is less than 0.05 level of significance at df 1 and 38, the null hypothesis is rejected. This shows that there is a significant difference between the mean achievement scores of students taught biology with MIS (experimental group) and that of those taught with CLM (control group) in favour of those in the experimental group. This indicates that integrating mnemonic devices in teaching biology concepts is a significant factor in academic achievement of students in the experimental group.

Hypothesis 2: No significant difference exists between the mean achievement scores of male and female students taught biology using MIS.

Analysis of hypothesis two is presented in table 4

Table 4: ANCOVA Test of Significant Difference between the Mean Achievement Scores of Male and Female Students Taught Biology Using MIS

Dependent Variable: pretest					
Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	135.435[a]	2	67.718	16.491	.000
Intercept	.690	1	.690	.168	.686
Posttest	129.785	1	129.785	31.606	.000
Gender	9.953	1	9.953	2.424	.136
Error	78.019	19	4.106		
Total	3676.000	22			
Corrected Total	213.455	21			

a. R Squared = .634 (Adjusted R Squared = .596)

The result of the two-way ANCOVA from table 4 above shows that the F-value is 2.424 and P-value is 0.136. Since the P-value is greater than 0.05 level of significance at df 1 and 19, the null hypothesis is not rejected. This shows that there is no significant difference in the mean achievement

scores of male and female students taught biology using inquiry approach with mnemonics. Hence, indicating that the use of MIS in teaching students is not gender biased.

Hypothesis 4: There is no interaction effect of gender and teaching methods on students' academic achievement in biology

The result of the two-way ANCOVA from table 3 above shows that F-value is 7.328 and P-value is 0.010. Since the P-value is less than 0.05 alpha levels at df 1 and 38, the null hypothesis is rejected. Showing that there is interaction effect of gender and methods of teaching on the academic achievement of students in biology.

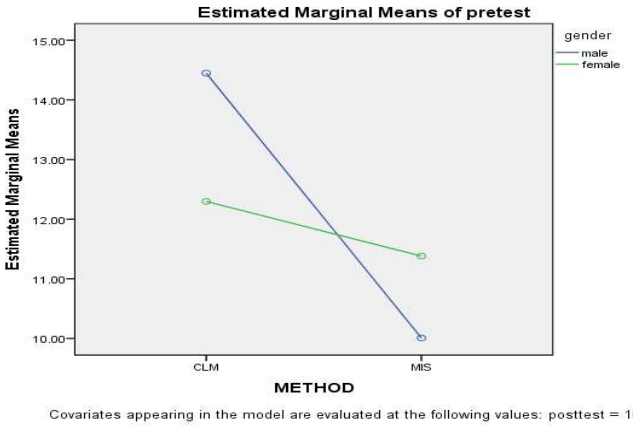

Figure 1: Profile Plot of Interaction Effect of Teaching Methods and Gender on the Achievement of Students in Biology

Discussion of findings

The finding of the study showed that the students taught biology with MIS gained in achievement more than the students taught using Conventional Lecture Method (CLM). The finding of this study lends credence to the findings of Anandhi and Raja (2015), Akinsola and Odeyemi (2014), Nja, Idiege and Obi (2017) and Khoo (2012) who reported in their studies in basic science, mathematics, chemistry, and economics respectively that students taught science related subjects using mnemonics achieved higher than their counterparts in the control group.

On the influence of gender, the study revealed that the males achieved higher than the females. However, on testing the null hypothesis in table 4, it was revealed that the difference is not significant. The finding of this study supports the findings of Akinsola and Odeyemi (2014), Chikwendu (2018) who revealed in their studies that gender has no influence on students' academic achievement.

On interaction effect of teaching methods and gender on achievement of students in biology, the finding of the study revealed that there was interaction effect of teaching methods and gender on students' achievement in

biology. From the findings, it can be deduced that the use of integration of mnemonics in the teaching and learning process produced more positive effect on students learning achievement as they are gender friendly devices that encourages retention. Hence, students will achieve better if teachers incorporate mnemonics in teaching biology at senior secondary schools in Nigeria.

Conclusion

Based on the findings, the study concluded that MIS positively improved students' achievement in biology irrespective of gender more than CLM.

Recommendations

In the light of the findings of the study, the following recommendations were made:

1. Biology teachers in secondary schools should integrate MIS when teaching to improve students' academic achievement in biology.
2. Seminars, symposia, workshops, and conferences should be organized for biology teachers by the government, education stakeholders and professional bodies (STAN) to familiarize teachers with mnemonics and its types as well as how to integrate it in the teaching and learning process.

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