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CONTENTS

THE IMPACT OF USING BOARD GAMES ON THE DEVELOPMENT OF SITUATIONAL MOTIVATION IN PRIMARY SCHOOL CHILDREN

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Abstract: *The study highlighted the impact of an activity program in which board games were used to develop situational motivation in first-grade school children. The participants (ages 6-8 years) were primary school students from rural areas randomly assigned to the experimental group (EG; n= 13) and control group (CG; n= 13). The level of situational motivation was measured with the Situational Motivation Scale (SIMS) developed by F. Guay, R. J. Vallerand, and C. Blanchard (2000). After initial testing, for eight weeks, ten board games (Dixit, Domino in syllables, my first 5-second game, Tetris, Vocalopoly, etc.) were introduced twice a week for the development of mathematical and linguistic skills. The results of the comparison t-test on paired samples, as well as on independent samples of the Situational Motivation Scale (SIMS), show that there are statistically significant differences regarding the level of situational motivation in the two moments of the application of the scale, pretest, and posttest in the experimental group (t =-15.503, p<0.001), but also between the two groups (experimental and control) in the post test phase (t=10.539, p<0.001). In conclusion, the research results highlight that using board games in the activities carried out with first-grade students improves the motivation of school children.*

Keywords: *boardgames; situational motivation; learning through board games; primary school;*

1. **Introduction**

The game is specific to the young school age, on the one hand, because it responds in the happiest way to the particularities of the age of schoolchildren, and on the other hand. After all, the fun element stimulates children's interest and curiosity to learn.

This research aims to demonstrate how important how we, as teachers, structure the activity in the classroom, how, working with young schoolchildren, especially those in the cycle of fundamental acquisitions, we manage to motivate them to work on hours to develop the belief that they can solve any problematic situation related to learning, and why not, in real life. Our research aims to fill a gap in measuring the effectiveness of using board games in learning to develop motivation in first-grade students, in the framework of communication activities in Romanian and mathematics, and exploring the environment in first grade.

The study by Mahmoud & Tanni (2014) aimed to explore the teachers' opinion on the use of board games in learning English; the research revealed the fact that board games are effective as educational tools that can provide not only fun, pleasure but also personal involvement in learning, motivation. As recommendations, the researchers emphasized the need for these games to be perceived as elements of the teaching process to be introduced in the lesson sequences; experimental studies should be carried out that will analyze the impact of these games in enriching the level of knowledge and skills of reading, speaking, writing and listening.

Another study that analyzes the effectiveness of board games in teaching young school children development, this time psycho-emotional and behavioral, is by Ghițoiu (2020), who proposes to research the board game as a method in school education to assimilate long-term benefits long for children's education. The article's author points out the alarming growth of online games that have isolated children, taking them away from the benefits of board games and board games. The author believes that a delimitation must be made between the didactic game, which combines the instructive element with the entertaining part, thus ensuring a complete unity between the didactic task and the game action. The term board game or board game can

create confusion. Ghițoiu (2020) mentioned the fact that, unlike the Romanian language, in other languages, the use of the term board game highlights the characteristics of this type of game, namely the fact that it requires at least two players, that it is based on predetermined rules and materials and, in particular, that it facilitates socialization and good mood.

Sardone & Devlin-Scherer (2016) pointed out that board game-based learning, as a broad category, has made significant progress over the past ten years, becoming a powerful instructional tool that positively affects student learning. The authors stated that several empirical studies (Klawe, 1999; Rosas et al., 2003; Virvou et al., 2005; Papastergiou, 2009) evaluating the impact of using board games in subjects such as mathematics, language, and sciences recorded positive results in terms of student motivation and learning effectiveness.

Another work that analyzes the effectiveness of board games as tools leading to changes in education is *Board Games as Educational Tools." Leading to Climate Change Action: A Literature Review* in which the author Pope (2021) specifies the fact that board games are used too little in education, the emphasis, at least during the pandemic, being on online games. As teachers readjust to face-to-face teaching, the article's author emphasized, the education they provide to children can be reinvented, creating better learning environments. Board games can engage students with different learning styles and inspire individual creativity. (Pope, 2021, p.4)

Analyzing the effectiveness of traditional board games in teaching, Kochel & Stinia (2014) considered that the reevaluation of the effectiveness of conventional board games and their use in the educational process opens a new field for the activity of the teaching staff, expanding the range of didactic materials that develop the motivation in learning and the student's belief that he can overcome the difficulties that arise in the learning process. Working with board games, the two authors stated, allows students to acquire knowledge and skills, forming specific research attitudes. Also, board games allow students to participate in personal development actively. According to the paper's authors, the emotions accompanying the fun and the direct contact between the players contribute to forming social skills. (Kochel & Stinia, 2014, p. 97-110)

2. Literature review

D. Vrabie (2000) defined motivation as "the set of internal motives of behavior (needs, tendencies, attractions, interests, convictions, aspirations, intentions, dreams, aspirations, goals, ideals) that support, orient, propel, from the inside, the realization of actions, facts, attitude" (Vrabie, 2000, pp. 147-149). M. Golu defines the term motivation as a "functional, structural component specific to the human psychic system, which reflects a state of necessity, in a broad sense, and the motive expresses the concrete, current form, in which such a state of desire is activated and manifested necessity" (Golu, 2002, p. 69). Motivation in the school context represents a dynamic state that originates from what the student thinks about himself and the environment in which he learns, a perception that causes him to choose one activity over another, get involved, and persevere in carrying out that activity to achieve a particular purpose. The factors based on situational motivation can be internal, which determines the dynamics of learning, or external, which refers to the instructional-educational activity, the classroom climate, the system of rewards, punishments, and evaluation. (Nicorici, 2015, p. 336)

Sălăvăstru (2004) appreciated that the motives put the individual into action due to external or internal stimulation, supporting his activity for some time, despite the demanding situations that appear his way. It is appreciated that the motivation of learning refers to "all the factors that mobilize the student to an activity designed to lead to the assimilation of some knowledge, to the formation of some skills and abilities," motivation being one of the reasons why the student learns or not, but also the effect of this learning. (Sălăvăstru, 2004, p. 70)

So, stated Sălăvăstru, „As teachers, we must know the reasons that, together with temperament, skills, character, contribute to determining the behavior and success/failure of the student in the school activity" (Sălăvăstru, 2004, p.70).

According to Popenici & Fartușnic (2009), motivation, in a school context, is nothing more than the process that leads, directs, and supports a specific type of behavior desirable for the status of a student: participation in classes, involvement in activities at school or home, solving given tasks. The authors mentioned the fact that, without motivation, no person gets involved or ends up getting involved in solving an action.

Another definition of the concept of motivation in the school context is found in the work of Vallerand & Thill (1993), according to which "the concept of motivation represents the hypothetical construct used to describe the internal and/or external forces that produce the onset, intensity, and persistence of behavior." According to the authors, the beginning implies the intention to move from a passive behavior during the lesson to an active one, with the student directing all his actions towards achieving some objectives. Intensity, according to the same authors, refers to the effort the student is willing to make to achieve the goal, while persistence refers to the duration of the effort. This definition has the advantage of establishing the criteria that allow the identification of motivated students and the establishment of motivating factors, which can be internal or external. Therefore, according to Vallerand & Thill (1993), we identify intrinsic and extrinsic motivation.

The studies carried out in the field of situational motivation (Nicorici, 2015; Popenici & Fartușnic, 2015; Vallerand & Thill, 1993; Zimmerman et al., 1990; Sălăvăstru, 2004) led to the idea that the lessons must be designed in such a way that they can form an indispensable motivation, arousing the student's desire to learn, namely that learning is based on both external reasons such as grades, grades, praise, punishment, and internal, cognitive, social reasons. In addition, referring to young schoolchildren, several researchers (Nicorici, 2015) have concluded that they do not yet have a balanced motivation to carry out certain activities, the emphasis, in this case, being on organizing learning conditions, stimulating discovery, exploration, curiosity by introducing table games, thus revealing the importance of the method that activates schoolchildren in activity.

School practice shows that young students come to school positively toward learning. However, following repeated failures and unpleasant experiences, they end up with a low level of self-efficacy, thus developing a negative attitude towards those parts of the learning tasks in which they consider that they cannot achieve results.

One of the best solutions to motivate young schoolchildren to participate in the activities proposed by the teacher is, we think, the use of board games because they are fun, challenging, and engaging. They not only provide the opportunity to get involved in solving the given tasks for the vast majority of shy schoolchildren but also help students to motivate themselves intrinsically, developing the belief that they can solve problems through their effort, reaching performance. The studies

carried out on the teaching method through the use of games and other types of game activities have emphasized the fact that board games create a practical opportunity that allows students to actively participate in learning, developing memory, self-respect, the motivation to succeed, and the ability to overcome difficult situations, in a pleasant way, especially if it is about learning a foreign language (Mahmoud & Tanni, 2014), in psycho-emotional and behavioral development (Ghițoiu, 2020) or as a learning method that contributes to personal development, to the formation of social skills. (Kochel & Stinia, 2015)

Sardone & Devlin-Scherer (2016) refer to this board game as board games, a category of games that have, as material, first of all, a game board and whose rules and mechanisms are centered around it. They stated that the board game is performed between two or more players, who can play as a team or against each other, aiming to win the game stake, but not including the game of chance here. Board games, they said, develop and create a state of well-being and do not involve material stakes.

Koh, E., Kin, Y. G., Wadhwa, B., & Lim, J. (2012) emphasized that, depending on the type of game, it has a greater or lesser influence on the stimulation and retention of information by students, on their motivation, on improving motor coordination. However, the authors of the article mentioned the fact that these board games are not adopted in education due to their association with gambling rather than with study or work.

Allery (2014) stated that the board game is "a specific learning tool that requires participants to engage in a competitive or collaborative form of action, having a set of predefined rules." The article's author also emphasizes the skills that can be developed with the help of these board games as decision-making, conflict resolution, and negotiation (Allery, 2014).

Bennett (2011) emphasizes the power of board games and play in general in facilitating deep and meaningful learning, arguing that the disadvantages of their use are too short a time and too expensive to acquire.

The conclusion that emerges from the analysis of the definitions given to the board game converges with the fact that through board games, the child develops new skills by taking over strategies from adults,

models of behavior and action, as well as by the fact that his effort is encouraged, it helps the child to increase his sense of competence and confidence in his strength.

Board games are a practical resource that helps develop skills such as turn-taking, increasing frustration tolerance, following rules, developing decision-making skills, increasing the ability to focus on a task, helping them learn to cooperate (especially if they are team games), and finding problem-solving strategies.

Research goal

The purpose of this study is to explore the potential of board games for practicing reading in first grade, enriching vocabulary, formulating sentences, mathematicians' calculation on the one hand, and the other hand identifying the types of board games that increase situational motivation in learning in young schoolchildren.

Research hypothesis

We start our study with the hypothesis that implementing an intervention program based on board game activities maximizes the situational motivation of the children in the experimental group compared to the control group.

Independent variable (a): implementation of the intervention program and its assessment

a1: Pretest assessment

a2: posttest assessment

Dependent variable (x): children's results in *Situational Motivation Scale (SIMS).*

Research lot

In the study, we used two 1st-grade classes from the countryside. One of the study's authors, primary education teacher Jipa Claudia-Mihaela, coordinated the experimental class at Technological High School No. 1, Suplacu de Barcău. The experimental group comprised 13 students, seven girls and six boys, with an average age of 6-8 years. The control group comprised 13 students from the 1st grade, Secondary School No. 1, Borumlaca, the structure of Technological High School No. 1

Suplacu de Barcău; the class has 11 girls and two boys, with an average age between 7-8 years.

Research procedure

Our study occurred in the 2021/2022 school year, during the second semester, in February-May 2022. The intervention program completed a several0severals, twice a week games aimed at developing mathematical and linguistic skills, simultaneously developing the motivational level of schoolchildren in the experimental group.

Description of the intervention program

Within the subjects Communication in Romanian and Mathematics and Exploring the Environment, various board games were implemented, at different stages of the lesson, to check how they change the initial perception of the motivation to participate in the activities, developing, at the same time, the feeling of personal success in overcoming difficulties, these board games being: Domino in syllables, Puzzle, My first game of 5 Seconds, Tetris, Snakes, ladders and words with x, Vocalopoly, Dixit, Fun math, Animal Globe Whizz, and Globe Whizz. Some games were used as they are; others, due to their complexity, were adapted either by selecting only those game cards suitable for the age and abilities of the children (they read more slowly, they do not have all the necessary knowledge) or by modifying the dice, in such a way that they only show cards with simple questions, such as Choose, True/False, Complete, or by designing new game cards, adapted to the objectives pursued.

For example, the Animal Globe Whizz board game was used in the topic "Animal Curiosities," a lesson to fix and consolidate knowledge about animals in Maths and environmental exploration. After organizing the student body and the furniture, the children were introduced to the game with a story: "Once upon a time, there was a fantastic world of animals. A world in which, by magic, you will enter through a game in the next few seconds. Embark on an unforgettable expedition around the world!" They were invited around the game table, where they discovered the game board, explorer tokens, playing cards, the globe, and the encyclopedia. After being told that they will strengthen and enrich their knowledge about animals through a board game called "Animal Globe Whizz," they are divided into six teams

and cooperate to solve the tasks during the game. To divide them into teams, I used the game "Blind Hand" (each child will choose a specific token from my hand without seeing what they chose). The game's rules were explained to them, the test game was made with one of the teams, then it was on to the actual game. Since we had decided to play the whole hour, the game ended when one of the teams advanced the most on the game board, a few minutes before the end.

Another game similar to "Animal Globe Whizz" was "Globe Whizz" was chosen to recapitulate mathematical operations with natural numbers in the center 0-100, keeping from the original game the game board, explorer pieces, dice, cards of the game being designed in such a way as to respect the tasks on the actual cards in this board game, but with mathematical calculations, graded differently in difficulty: 1: Calculate; 2: True/False; 3: Choose the correct result!; 4: Mathematical terminology; 5: Find out!; 6: Identify the unknown number by calculation!.

To develop the ability of correct oral expression, we chose the board game DIXIT, an exciting game of imagination and knowledge of the opponent, which involves highly well-developed attention to detail. In the following, we present some general aspects to consider if we want to play this game. The DIXIT game is for children from 8 years old. However, it has been adapted to a Communication lesson in Romanian, the theme of the activity being "Creating stories" s that first-grade children (experimental class) can operate with the elements of the game. The children were presented with a surprise box containing DIXIT playing cards, their task being to create a meaningful story using five cards from the ones they drew from the box. The story must be logical and have a title. It was explained to them that they would work in teams, and each member must tell a part of the story, thus ensuring everyone's involvement. In the end, the teams decide on the story's title, and then, in front of the class, they present the story as a team.

Research tools

Situational motivation was measured using The Situational Motivation Scale (SIMS) developed by Guay, Vallerand & Blanchard (2000). This instrument asks for the answer to the question "Why are you involved in this activity?" contains a number of 16 items, the answers being requested on a 7-step Likert scale, with the following meaning: 1-does not correspond at all, 2-corresponds very little, 3-corresponds a little,

4-corresponds moderately, 5-corresponds enough, 6-corresponds a lot, 7-corresponds exactly, there are no reverse scoring items. In the Scale, four large subcategories are identified: ***Intrinsic motivation (IM)*** : items 1, 5, 9, 13 (ee.g.I.13: Because I feel good when I do this activity); ***Identified Regulation (IR)*** : items 2, 6, 10, 14 (e.g., I2: Because I do it for my good); ***External Regulation (ER)*** : items 3, 7,11,15 (ex. I.7: Because it is something I have to do) and ***Amotivation (AM)*** : items 4, 8, 12, 14 (ex. I.4: There may be good reasons for doing this activity, but I do not see any).

Research data analysis

The administration of the questionnaires was carried out during class hours, both for the experimental group and the control group, using the paper and pencil method, the results being entered in Excel, considering the young age of the students and their lack of IT skills. The JASP program carried out the statistical processing of the results.

Taking into account the objective of the study and the working hypothesis, in the presentation of the results, we will highlight the impact of board games in the development of situational motivation and the general self-efficacy of the young schoolchildren participating in the study, from the two batches, in the two stages of the testing. Due to the fewer participants, data analysis was performed using non-parametric tests, independent samples, and paired samples.

The first objective of our study was the descriptive analysis of the answers given by young schoolchildren, both from the experimental and control groups, in two stages, pretest, and posttest, to the Situational Motivation Scale (SIMS).

In Table 1, we present the analysis and interpretation of the results of the descriptive study regarding the answer to the question: Why are you currently involved in this activity? Addressed both to students from the experimental and control groups in the pretest stage.

Table 1: Descriptive analysis in PreTest and PostTest of the responses to the question: What is the reason why you are involved in this activity?

Descriptive Statistics

	I.1_PreTest		I.2_PreTest		I.3_PreTest		I.4_PreTest		I.5_PreTest		I.6_PreTest		I.7_PreTest		I.8_PreTest		I.9_PreTest		I.10_PreTest		I.11_PreTest		I.12_PreTest		I.13_PreTest		I.14_PreTest		I.15_PreTest		I.16_PreTest	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Valid	13	13	13	13	13	13	13	13	13	13	13	13	13	15	13	13	13	13	13	13	13	13	12	13	13	13	13	13	13	13	13	13
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Mode *	1.000	1.000	1.000	1.000	4.000	1.000	4.000	4.000	1.000	1.000	2.000	2.000	3.000	1.000	4.000	1.000	1.000	1.000	2.000	1.000	2.000	1.000	5.000	4.000	1.000	1.000	2.000	1.000	3.000	3.000	5.000	4.000
Median	2.000	1.000	1.000	2.000	3.000	2.000	4.000	3.000	1.000	1.000	2.000	2.000	3.000	1.000	4.000	3.000	2.000	1.000	2.000	2.000	2.000	2.000	4.000	3.000	1.000	1.000	2.000	1.000	3.000	3.000	5.000	4.000
Mean	1.692	1.385	1.692	1.615	2.846	2.000	4.231	3.154	1.615	1.538	2.000	2.000	3.308	2.154	4.077	3.154	1.769	1.462	2.000	1.769	2.923	2.231	4.308	3.000	1.833	1.385	1.769	1.615	2.846	2.308	4.615	3.615
Std. Deviation	0.751	0.650	0.855	0.650	1.214	1.080	0.599	1.144	0.768	0.660	0.913	0.707	1.032	1.144	1.115	1.519	0.832	0.877	0.913	0.832	1.115	1.423	0.751	1.472	0.937	0.650	0.725	0.659	0.896	0.947	0.650	1.387
Minimum	1.000	1.000	1.000	1.000	1.000	1.000	3.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	3.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	3.000	1.000
Maximum	3.000	3.000	3.000	3.000	4.000	4.000	5.000	5.000	3.000	3.000	4.000	3.000	5.000	4.000	5.000	5.000	3.000	3.000	4.000	3.000	5.000	5.000	5.000	5.000	4.000	3.000	3.000	3.000	4.000	3.000	5.000	5.000

* More than one mode exists, only the first is reported

Descriptive Statistics

	I.1_PostTest		I.2_PostTest		I.3_PostTest		I.4_PostTest		I.5_PostTest		I.6_PostTest		I.7_PostTest		I.8_PostTest	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Valid	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mode ᵃ	7.000	1.000	6.000	2.000	5.000	1.000	3.000	3.000	7.000	2.000	6.000	2.000	7.000	1.000	3.000	1.000
Median	5.000	1.000	6.000	3.000	6.000	2.000	3.000	4.000	6.000	2.000	6.000	3.000	6.000	3.000	3.000	4.000
Mean	5.308	1.769	5.462	3.308	5.385	2.385	3.000	3.615	5.846	2.538	5.846	3.308	5.769	2.385	2.923	3.385
Std. Deviation	1.702	1.166	1.266	1.750	1.609	1.850	1.581	1.044	1.144	1.266	0.689	1.548	1.363	1.557	1.801	1.710
Minimum	3.000	1.000	2.000	1.000	1.000	1.000	1.000	2.000	4.000	1.000	5.000	1.000	3.000	1.000	1.000	1.000
Maximum	7.000	5.000	7.000	6.000	7.000	7.000	6.000	5.000	7.000	6.000	7.000	6.000	7.000	6.000	6.000	6.000

	I.9_PostTest		I.10_PostTest		I.11_PostTest		I.12_PostTest		I.13_PostTest		I.14_PostTest		I.15_PostTest		I.16_PostTest	
	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
Valid	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Mode ᵃ	7.000	1.000	6.000	2.000	5.000	1.000	2.000	4.000	6.000	1.000	5.000	1.000	6.000	3.000	1.000	5.000
Median	6.000	1.000	6.000	2.000	5.000	2.000	2.000	4.000	6.000	2.000	6.000	2.000	6.000	3.000	2.000	4.000
Mean	5.385	2.077	5.692	3.000	5.538	2.462	2.231	3.769	5.308	2.077	5.692	2.846	5.769	3.077	2.077	4.077
Std. Deviation	1.805	1.553	1.182	1.915	1.198	1.761	1.236	1.787	1.750	1.320	0.947	2.035	0.927	1.935	1.320	1.188
Minimum	1.000	1.000	3.000	1.000	4.000	1.000	1.000	1.000	1.000	1.000	4.000	1.000	4.000	1.000	1.000	1.000
Maximum	7.000	5.000	7.000	7.000	7.000	6.000	5.000	7.000	7.000	5.000	7.000	6.000	7.000	7.000	5.000	5.000

ᵃ More than one mode exists, only the first is reported

We can see from the figures above that although the differences between the pretest and posttest results of the two groups are obvious, there are some exceptions. We draw particular attention to ***Item 1***: *Because this activity is interesting*, where we observe a particular increase in the experimental group in the pretest obtaining m=1.692, as=0.751, and in the posttest m=5.308, as=1.702, while the control group (2) remains relatively constant in results (in pretest: m=1.385, as=0.650; in posttest: m=1.769, as=1.166).

Obvious increases in the means of the experiential group can also be seen in ***Item 2***: *Because I do it for my good* (in the pretest obtaining m=1.692, as=0.855, and in the posttest m=5.462, as=3.308) and ***Item 10***: *Because that is what I want* (in the pretest obtaining m=2.000, as=0.913, and in the posttest m=5.692, as=1.182), but unlike item 1, the control group's scores also increased, albeit to a more moderate extent (Item 2 pretest: m=1.615, as=0.650; posttest m=3.308, as=1.750 and Item 10 pretest: m=1.769, as=0.832; posttest m=3.00, as=1.915).

An exception to the rule of growing is observed in ***Item 8***: *I am doing this activity, but unsure if it is worth it* , where although we would expect the results of the experiential group to increase in the post-test stage, they show a slight decrease (pretest: m=4.077, as=1.115; posttest m=3.154, as=1.519), while the control group shows a moderate but expected increase (pretest: m=2.923, as=1.801; posttest m=3.385, as=1.710). Possible causes will be discussed in the sections below of this article.

The high averages highlight that first-grade school children lack motivation, not establishing any connection between the results and actions, considering that specific external forces determine their behavior.

To verify the hypothesis that carrying out a program of activities that include board games in the lessons will lead to the development of the situational motivation of schoolchildren in the experimental class, we compared the results of the experimental group by applying the same

scale in two different stages, pretest, and posttest, using the Wilcoxon test, of non-parametric comparison, on paired samples, the results can be viewed in Table 2.

Table 2: The results of the paired-samples comparison t-test on the Situational Motivation Scale (SIMS), in the experimental group, at two different times

	Control Group		Experimental Group	
	t	**p**	**t**	**p**
Intrinsic Motivation (IM) *Pre-PostTEST*	-1.945	0.076	-8.345	< 0.001
Identified Regulation (IR) *Pre-PostTEST*	-2.994	0.011	-18.450	< 0.001
External Regulation (ER) *Pre-PostTEST*	-1.389	0.190	-7.559	< 0.001
Amotivation (AM) *Pre-PostTEST*	-1.848	0.089	4.857	< 0.001
Mean_SIMS_Scale Pre-PostTEST	-5.455	< 0.001	-15.503	< 0.001

Analyzing the data contained in Table 2, it is deduced that there are statistically significant differences regarding the level of situational motivation in the two moments of the application of the work tool, pretest and posttest at all levels analyzed, which means that the hypothesis is supported.

In Table 3, we present the means of the working tool, at different times of its application, in the both experimental and control groups.

Table 3: Means on the working instrument Situational Motivation Scale (SIMS), in pretest and posttest, experimental and control group

Descriptive Statistics

	Media_MoIn_PreTest	Media_MoIn_PostTest	Media_RegId_PreTest	Media_RegId_PostTest	Media_RegExt_PreTest	Media_RegExt_PostTest	Media_AM_PreTest	Media_AM_PostTest	Media_PreTest	Media_PostTest
	1	2	1	2	1	2	1	2	1	2
Valid	13 13	13 13	13 13	13 13	13 13	13 13	13 13	13 13	13 13	13 13
Missing	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
Mode *	1.000 1.000	6.750 1.500	1.750 1.500	5.750 1.500	2.250 1.000	5.000 1.000	4.500 4.000	2.250 3.750	2.563 1.750	4.938 3.583
Median	1.500 1.500	5.750 1.500	1.750 1.500	5.750 2.750	2.750 2.000	5.500 2.000	4.500 3.750	2.250 3.750	2.563 2.188	4.875 2.875
Mean	1.731 1.442	5.462 2.115	1.865 1.750	5.673 3.115	2.981 2.173	5.615 2.577	4.308 3.231	2.558 3.712	2.721 2.149	4.827 2.880
Std. Deviation	0.657 0.579	1.446 1.184	0.506 0.566	0.710 1.613	0.807 0.921	1.069 1.678	0.309 1.082	1.242 1.262	0.334 0.539	0.262 0.613
Minimum	1.000 1.000	2.750 1.000	1.250 1.000	4.250 1.000	1.750 1.000	3.750 1.000	3.750 1.000	1.000 1.500	2.250 1.000	4.313 1.688
Maximum	2.750 3.000	7.000 5.250	2.750 3.000	7.000 5.500	4.000 3.500	7.000 6.500	4.750 4.500	5.000 5.750	3.500 3.000	5.375 3.750

* More than one mode exists, only the first is reported

From the data analysis, it can be deduced that higher means were obtained in the post-test stage after the activities in which board games were used in both groups, with the specification that in the case of the control group the difference is not as large, the experiential group obtaining a mean of m = 2. 721, a.s=0.334 in the pretest, and in the posttest a mean of m=4.827, a.s=0.262, while the control group obtained a mean of m=2.149, a.s=0.539 in the pretest, and in the posttest a mean of m=2.880, a.s=0.613.

Table 4: Group Descriptives of subscales indicators in pretest and posttest, of the both groups (EG=1, CG=2)

Group Descriptives

	Group	N	Mean	SD	SE	Coefficient of variation
Mean_IM_PreTest	1	13	1.731	0.657	0.182	0.380
	2	13	1.442	0.579	0.161	0.401
Mean_IM_PostTest	1	13	5.462	1.446	0.401	0.265
	2	13	2.115	1.184	0.328	0.560
Mean_IR_PreTest	1	13	1.865	0.506	0.140	0.271
	2	13	1.750	0.568	0.158	0.325
Mean_IR_PostTest	1	13	5.673	0.710	0.197	0.125
	2	13	3.115	1.613	0.447	0.518
Mean_ER_PreTest	1	13	2.981	0.807	0.224	0.271
	2	13	2.173	0.921	0.255	0.424
Mean_ER_PostTest	1	13	5.615	1.069	0.296	0.190
	2	13	2.577	1.678	0.465	0.651
Mean_AM_PreTest	1	13	4.308	0.309	0.086	0.072
	2	13	3.231	1.082	0.300	0.335
Mean_AM_PostTest	1	13	2.558	1.242	0.345	0.486
	2	13	3.712	1.262	0.350	0.340
Mean_SIMSPreTest	1	13	2.721	0.334	0.093	0.123
	2	13	2.149	0.539	0.150	0.251
Mean_SIMSPostTest	1	13	4.827	0.262	0.073	0.054
	2	13	2.880	0.613	0.170	0.213

As can be seen in Table 4, in the experimental group the averages for the following subscales increase: Intrinsic motivation (IM) from m=1.731 in the pretest to m=5.462 in the posttest; Identified Regulation (IR) from m=1.865 in the pretest increases to m=5.673 in the posttest; External Regulation (ER) from a pretest mean of m=2.981 to a posttest mean of m=5.615. In the subscale Amotivation (AM) we observe a decrease from m=4.308 (pretest) to m=2.558 (posttest). This decrease is explained by the reverse coding of the subscale items.

In the control group, although we observe an increase in averages in the posttest phase, this is slight. Unlike the experimental group, the control group recorded or increased the averages on the Amotivation subscale.

To check if the differences between the averages obtained by the two groups in the pretest and posttest phase, the t-test for independent samples was applied. We present the test results in Table 5.

Table no. 5 Means of Independent sample T test of subscales indicators

Independent Samples T-Test

	t	df	p
Media_IM_PreTest	1.188	24	0.247
Media_IM_PostTest	6.454	24	< .001
Media_IR_PreTest	0.547	24	0.590
Media_IR_PostTest	5.234	24	< .001 [a]
Media_ER_PreTest	2.379	24	0.026
Media_ER_PostTest	5.506	24	< .001
Media_AM_PreTest	3.450	24	**0.002 [a]**
Media_AM_PostTest	-2.349	24	0.027
Media_SIMSPreTest	3.252	24	**0.003**
Media_SIMSPostTest	10.539	24	< .001 [a]

Note. Student's t-test.

[a] Brown-Forsythe test is significant ($p < .05$), suggesting a violation of the equal variance assumption

As we expected, the differences in the posttest phase are significant at a $p < .001$ for the first three subscales: IM, IR and ER. We find the difference in the AM subscales where $p < .05$, these results being explainable due to the inverse rating of the answers. Finally, it can be observed that in the posttest there are statistically significant differences ($p < .001$) in the averages of all analyzed items.

In the pretest phase, we observe a significant difference between the two samples ($p < .05$) at the average of all items, possibly explained by the difference only in the averages of the AM subscales, the one rated inversely.

Also, comparing the results obtained in the posttest phase between the classes included in the study on the Situational Motivation Scale (SIMS), we established with certainty that the increased level of situational motivation in experimental group was due to experiencing success by involving the children in easy games, interesting, attractive, the table above showing the means of the Situational Motivation Scale broken down by class.

From the analysis of the data, it can be deduced that higher averages were obtained, in the posttest stage, in the experimental group, after the activities in which board games were used in different stages of the lessons and lower in the control group, the conclusion we drew being that the motivation to participate in the activities actively increases if activating didactic strategies, such as board games, are used.

In conclusion, we can say that the hypothesis of the research is supported by the results obtained, the intervention program through which board games activities were introduced was efficient, increasing the school motivation of the first-grade students for learning.

Findings

The central idea of our research was to identify an attractive, interesting way, as close as possible to the understanding, enjoyment and level of mental and intellectual development of young schoolchildren, which would contribute to finding the necessary resources to overcome difficult situations, to the development of motivation to actively participate in school activities.

This way was the board game. Putting the board game into practice within the subjects Communication in Romanian and Mathematics and exploring the environment in first grade, we can say with certainty that it is synonymous with motivation, constituting a real incentive for young students, as well as genuine moments of pleasure experienced as entertainment, not as coercion.

The results of this study suggest that the use of board/board games in school activities constitutes methods that develop the motivation to actively participate in the activities, producing changes in terms of

attention, self-efficacy, satisfaction, team spirit, self-control, logical thinking, it contributes to the identification of the resources necessary to overcome difficult situations, it stimulates dialogue and represents pleasant lesson design alternatives.

Implementing this program helped us identify some challenges that teachers must know they will face if they want to implement such learning activities based on board games. Of these, we enumerate,e: not all students get involved in board games, they are time-consuming careful planning of the activity, buying the right board suitable also means high prices, they cannot last more than 15-20 minutes because young students quickly lose concentration. At the same time, like teachers, we must pay attention to board game selection because games must be carefully selected not to be too complex or competitive.

As it emerged from the experiment in the experimental class, board games were implemented to form skills and habits, consolidate and fix knowledge, or recapitulate/systematize the acquisition of some notions.

Summarizing the findings, the pedagogical experiment revealed that board games improve schoolchildren's motivation, contributing to identifying resources that help them overcome moments when they are at a standstill.

While activities that do not use board games have benefits, their implementation increases or influences the learning and retention of information in young school children.

Our research has some limitations. On the one hand, the research instruments were completed by children aged 6-8, so there is a high chance that these answers do not correspond to their honest opinion. Another limitation concerns the small number of study participants.

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MOTIVATIONAL LANDMARKS OF ADOLESCENTS IN THE CONTEXT OF LIFESTYLE AND SOCIAL REALITY - THEORIES, MODELS, VALUES, AND PRACTICES

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Abstract: *Students are motivated by the desire to satisfy their personal needs to achieve certain individual goals and aspirations. Motivation can vary according to interactions between internal factors (such as individual needs, interests, and values) and external factors. The most difficult practical problem is to understand the nature and quality of motivation in the classroom. Metaphors can help students understand and integrate information in an easier and more meaningful way. A substantial part of Social Psychology stems from the belief that social behaviors are based on people's perception of reality. Learning styles derive from four bipolar dimensions' (David, 2015, p. 204): extravert-introvert, which refers to the capacity to assimilate and analyze information through social interaction. Adolescence is marked by fluctuating levels of self-esteem and the adoption of different attitudes and styles until it stabilizes in youth and adulthood. Willpower comes into play at this stage, representing the subjective and most crucial aspect of self-regulation. Procrastination is often used as a way to cope with anxiety arising from initiating or completing tasks. The origins of the term can be traced back to the Latin word 'pregetare,' meaning to delay, hesitate, or postpone.*

Keywords: *motivation; adolescents; social.*

Introduction

The psychopedagogical stages present a complex framework that addresses various aspects of lifestyle, motivation, and social reality. Through this integrated approach, multiple psychological and educational factors can be examined, along with the personal influence of lifestyle.

Childhood and adolescence are widely considered major stages in human development. During these periods, individuals are frequently exposed to harmful factors that can have long-lasting effects. However,

implementing social and health interventions in different stages of growth could yield positive results for individuals.

The specialized literature has brought to light numerous studies in the field of adolescent lifestyles, covering various aspects such as the notion of identity in children, adolescents, and young people (explored by Erickson, 1968), the bio-psycho-social development of adolescents, and the impact of societal norms on their growth (analyzed by Kroger, 2000, and Santrock, 1996). Other studies focus on physical activity (Nader, 2008), healthy eating (Larson N, Story M., 2015), sleep and rest (Hale L, Guan S., 2015), risky behaviors (Kann L, et al., 2018), and mental health (Gore F.M. et al., 2011).

In the renowned treatise on adolescent psychopathology, Marcelli and Braconnier (2004) analyze various anomalous behaviors exhibited by young people, such as exhaustion, bulimia, anorexia, depression, suicide, and running away from home.

In their works, Clerget (2008) examines the crisis of adolescence, while Adams and Berzonsky (2009) propose a manual for adolescent psychology. These authors have identified and analyzed the dangers associated with adopting an unhealthy lifestyle during adolescence, which include substance abuse, risky sexual behaviors, and antisocial behaviors that are linked to psychopathological disorders, adolescent tasks, and sexually transmitted diseases.

The consulted and synthesized bibliography is in line with the research objectives proposed in this paper, which aim to analyze the links between personality, motivation, and socio-emotional intelligence in adolescents (Colareza, C. 2020). These aspects represent vital indicators of maturity and social integration among children and adolescents, particularly regarding their level of integration within the family and school community.

The specialized literature contains numerous models that highlight various variables crucial for incorporating healthy habits and achieving a healthy lifestyle. One such model is Cummings' analysis (1980) of 109 variables derived from 140 different models of healthy behaviors. The analysis led to the identification of six different multidimensional factors, including: availability of health services, principles regarding the quality and benefits of treatments, perceptions of illness treatment, attributes of the social network, demographic elements.

The social cognition approach aims to investigate how individuals navigate social situations. In 1991, Fiske and Taylor introduced the cognitive approach, which focuses on individual cognitive processes -

the thinking processes that intervene between observable stimuli and responses in real-life situations. A substantial part of Social Psychology stems from the belief that social behaviors are based on people's perception of reality. Since Schneider's work in 1991, social psychology has been the driving force behind the development of social cognition in individuals.

Furthermore, Fiske and Taylor's research in the same year defined self-regulation as a cognitive and behavioral process through which individuals modify their self-concepts, behavior, or environment to align with desired outcomes and personal goals. During the process of self-regulation, a crucial aspect is the reduction or sorting of unused neural connections in the brain. This pruning typically results in significant changes in how adolescents function and occasionally reveals latent problems that may require solutions.

The process of self-regulation is composed of several elements, including goal setting, mental training, continuous monitoring, and evaluating the motivation behind the activity. In this process, two distinct phases are identified, as highlighted by Gallwitzer (1993): the motivational phase and the volitional phase. The first stage of self-regulation is the motivational phase, which involves considering various stimuli and expectations that inform our choices between goals and actions. This phase concludes once the decision regarding the pursued objective has been made. It is followed by the volitional phase, characterized by planning and action aimed at achieving the chosen goal, simultaneously working to remove any obstacles that may hinder progress. Willpower comes into play at this stage, representing the subjective and most crucial aspect of self-regulation. During the volitional phase, both intention, which is the act of volition, and willpower, which is the mechanism of psychological self-regulation that mobilizes physical, cognitive, and affective resources, play significant roles.

J. Keller (2008) proposed an integrative theory that relates motivation, willpower, performance, learning, and attitude. According to Keller, desire is the initial manifestation of willpower, representing actions that have not yet been realized. Therefore, the concept of desire can help us understand the coexistence of conflicting values.

During the process of action, there is an underlying tension that motivates the individual, and the motive is evaluated before establishing a goal. Desire is thus integrated at a higher level than intention. The study has shown that the nature of a person's occupation is directly related to their level of life satisfaction. Positive correlations

have been found between the level of interest and satisfaction, as well as the amount of time invested in work activities and leisure time.

Achieving a healthy lifestyle consists of understanding and adopting healthy principles/traits for individuals and society. The organizational model is established according to the standards of a linear system that shows influence on the learning process and performance.

Attaining a healthy lifestyle is dependent on demographic and social factors, together with adopting a parental model and cultural values from an early age, playing a significant role in shaping an individual. Practicing healthy habits is influenced by two main factors - emotional factors such as stress level and personality factors such as self-esteem. For example, someone's personality traits, whether positive (optimism) or negative (negative affectivity), have a significant influence on the adoption and maintenance of healthy habits.

The role of cognitive factors is essential in determining whether healthy practices can effectively cultivate behaviors that contribute to a healthy lifestyle. Adolescents need support during their tumultuous phase of emotional and hormonal changes to overcome challenges that may hinder motivation towards a healthy lifestyle and performance improvement. The issue of procrastination among adolescents and beyond is a real problem and can be either a consequence of depression or a factor that exacerbates it. Procrastination is often used as a way to cope with anxiety arising from initiating or completing tasks. The origins of the term can be traced back to the Latin word "pregetare," meaning to delay, hesitate, or postpone. Psychologists specialized in this field have added several criteria to classify procrastination, such as non-productivity, futility, and delay. Procrastination not only leads to decreased motivation and productivity but also results in increased levels of stress, feelings of guilt, and disapproval from others due to failure to.

Psychopedagogical Indicators of Adolescents
The period of adolescence is characterized by the complexity of the transformations that adolescents must face on multiple levels: biological, psycho-emotional, and social.

In the process of adapting to such a complex challenge, young people experience psychological and behavioral reactions. It is a period of learning and (re)discovering oneself, which can generate identity crises and self-esteem erosion, manifested either through deviant behaviors or introverted reactions.

Neacșu (2019) pointed out in the dynamics of learning and the development of learning competencies that there are different opinions and a consensus regarding the existence of specific mechanisms in academic learning. These mechanisms are based on multiple sets of biological, neuropsychagogical, neurodidactic, psychosocial, and anthropological mechanisms. There is great diversity in the functional mechanisms of learning, and they are accepted and verified through the prism of the principle of plural determinism.

The following explanatory factors are involved in the mechanisms of learning (Neacșu, 2019):

- Lewin's dual-power (attraction-avoidance) refers to human learning through an individual's tendency to approach or avoid certain situations, phenomena, people, relationships, or learning behaviors. Therefore, effort is required to choose a more productive mental path.

- Activation of a positive perspective through success and self-control.

- Self-confidence in personal achievements through learning competence and effective decision-making.

In the structure of learning, the following important characteristics can be identified: conception (the meaning of the response), motivation (the psychosocial status of individual conduct), goals (conscious objectives), methodology (strategies, methods, techniques), resources (material, energy, informational), time (planned duration), conditions (study climate), social, cultural, individual, and group contexts, results, evaluation (personal and institutional norms). Based on this structure, connections and motivated transfers can be made to enhance learning.

According to the law of motivation, academic learning is produced and self-sustained as a generator of energy. Conversely, unmotivated learning is negative and creates barriers.

"There are several psychological models of learning styles, one of the most influential being the Oakland model et al./Iliescu and Dincă (2007). Learning styles derive from four bipolar dimensions" (David, 2015, p. 203): extravert-introvert, which refers to the capacity to assimilate and analyze information through social interaction (extravert) or based on personal analysis (introvert); practical-imaginative, which assimilates information through factual analysis or imaginative solutions; rational-emotional, which assimilates and analyzes information in a logical or emotional manner; organized-

flexible, which assimilates and analyzes information when well-structured (organized) or through discovery (flexible). Thus, "willpower and motivation are finite resources that interact" (Neacșu, 2019).

In the development of adolescents, emotional intelligence also needs to be taken into account. It is a social adaptive ability and is defined in the literature through two models: the first model presents emotional intelligence as a skill to quickly learn and solve social information, similar to intelligence but with social applicability and adaptation (Mayer et al./Iliescu and Livinți, 2011); the second model is more defined as an element of personality that promotes adaptation to the environment (Bar-On/Livinți and Iliescu, 2009).

From a pedagogical point of view, there are several laws that act in the neurodynamics of learning. However, I would like to mention the laws of consciousness activation and the law of consciousness and goal clarity, as well as the law of preparedness, inverse connections, etc. In this context, there are psychological and pedagogical requirements that involve awareness at the level of thinking, attention, decision-making, strategy awareness, and avoiding fatigue (through breaks).

The rediscovery of oneself in relation to others can bring about conflicting values, as the density of interactions with groups other than their own increases during the process of secondary socialization. These contradictions can generate cognitive dissonance.

The development of adolescents can be observed based on data regarding the psychological profile of Romanian children and adolescents. These studies have focused on fluid intelligence, which represents the surface profile, and crystallized intelligence. However, they do not indicate a good potential compared to democratic countries (such as Germany, the Netherlands, and the United Kingdom). Therefore, correction is needed through early education programs, parenting programs, and a modern school curriculum.

Another dimension studied is school engagement, which is above the average of 12 cultures analyzed and slightly higher in girls compared to boys. The crystallized intelligence can be improved within a modern curriculum through the involvement of Romanian adults in work. Some components, such as the motivation to not be absent/enjoyment of being at school and the motivation to learn mathematics, are less developed.

Happiness in life is at a high level for children aged 10-12, while happiness at school has a lower level (similar to adult job dissatisfaction).

Regarding emotional socialization, a similar collectivist profile has been observed. In Romania, unlike Turkey, positive emotions are not directed toward the group of belonging, similar to the individualistic culture in the United States.

In terms of mental health, anxiety, both as a state and as a trait, among Romanian children has lower values than those of American children.

Regarding the eating behavior of Romanian children, it is healthier in rural areas compared to urban areas (similar to Portugal).

Young children have greater emotional problems (anxiety and depression) compared to the United States and other European countries.

Romanian adolescents, especially girls aged 12-18, score high in terms of clinical/ecological issues related to internalization, somatic problems, social problems, and depressive behavior compared to American adolescents.

As a defense mechanism, the role of collectivism works for ages 6-11, precisely during the period when children are exposed to an independent and new environment, but later, during the adolescent crisis, it is no longer useful. Paternalism related to social issues develops from adolescence and is accentuated in adulthood (David, 2015).

If regarding the onset of adolescence, it can be identified by the appearance of biological changes, typical of the onset of puberty, the period of adolescence is a variable one, the adolescent passing through several phases:

The onset of adolescence with biological changes

Puberty is characterized by physical changes, such as voice deepening in boys, the onset of menstrual cycles in girls, and the development and functional maturation of genital organs in both girls and boys.
The stage of adolescence itself is a period during which cognitive and social processes take place.
The stage is that of "prolonged adolescence," as described by Şchiopu (2008), and it refers to the person who achieves financial

independence, either through work integration or marital choices.

Table 1 The phases of adolescence

In the complex process of the social construction and reconstruction of identity during adolescence, both the influence of the origin group and the reference group, as well as that of the school, as well as cultural and social interactions, the degree of civic involvement are important. Thus, a clearer picture can be drawn following the application of some studies on Romanian subjects regarding emotional intelligence, seen as an aptitude showing lower results compared to Americans (in an individualistic culture). And the results, regarding emotional intelligence, as a social skill, show that Romanians have a higher degree than Americans. (Bar-On/Livinți and Iliescu, 2009).

In this broad spectrum of dimensions that characterizes the period of adolescence, the scientific approach is a multidisciplinary one. Character and temperament were analyzed through values and energy dynamics, and thus we can talk about personality traits, character and temperament respectively. We can follow in the creation of the adolescent profile the personality traits, as psychological transitory aspects and possibly stable over time, which involve cognitive-evaluative-emotional, behavioral and psychobiological elements.

Dimensions of personality with their psychological facets

Emotionality (Neuroticism) with its psychological facets: anxiety, anger-hostility, depression, procrastination, shyness, impulsivity, and psychological vulnerability;
Extraversion followed by facets such as warmth, assertiveness, activity, excitement-seeking, and positive emotions and sensations;
Openness with facets such as fantasy, feelings, ideas, values, and aesthetics;
Agreeableness with facets such as trust, honesty, altruism, modesty, and gentleness;
Conscientiousness with facets such as orderliness, competence, responsibility, self-discipline, and deliberation.

Table 2 Big Five Model, adapted from Costa and McCrae (1988)

Another scientific approach to adolescents is the one proposed by Marcelli and Braconnier (2006), which identifies 6 directions: cognitive, historical, cultural, sociological, psychoanalytic, and interventionist.

In an attempt to structure the directions and approaches to the phenomenon of adolescence identified by authors such as those mentioned above, as well as other authors proposing similar approaches, such as Rădulescu (2000), we propose organizing these theories into three major categories of approaches:

Relativistic-contextual approach, in which adolescence is treated differently based on the specific historical and socio-cultural context. Although perspectives may differ, sociologists, historians, and cultural anthropologists all emphasize the contextual determinants of adolescent typologies based on the period and place in which they live. One of the highly influential theories from the 1970s and 1980s is the one developed by Margaret Mead (1928/new edition 2001) from the perspective of cultural anthropology.

Based on anthropological studies conducted in Samoa, Mead develops an explanatory model of the direct relationship between the complexity of a society and the duration, on one hand, and the tensions and conflicts specific to the adolescent period, on the other hand. The less complex a society is, the shorter the duration of adolescence and the less problematic it is.

The approach to adolescence from the perspective of its invariant and universal determinants, whether it emphasizes irrational factors from a psychoanalytic perspective (Freud) or cognitive factors (Piaget). The mechanisms of adaptation are considered to be common to all adolescents, regardless of their social and cultural context. This type of approach focuses on invariant mechanisms and determinants and proposes holistic and deterministic explanations. Sigmund Freud, followed in a similar theoretical line by his daughter Anna Freud, attributes the conflicts and tensions of adolescence to childhood traumas as well as the anxieties and sexual tensions generated by puberty.

Erik Erikson proposes his own psycho-social theoretical model, starting from the definition of the concept of "adolescent crisis," considering the process of identity assertion as an unconscious process of differentiation. The model proposed by the mentioned author

operates with psychosociological concepts such as social roles, role ambiguities/conflicts, self-esteem, and self-awareness.

Structural-functional approaches. Alongside Talcott Parsons, another "founder" of the structural-functional approach is Robert King Merton, one of Parsons' students. While the former proposes a sociological theory that focuses on the concepts of "attitudinal ambivalence" and "youth culture" within a functionalist explanatory model, Merton (apud. Neculau, 2004) suggests, from a methodological perspective that falls under a functionalist approach, the "paradigm of anticipated socialization" carried out in interaction with reference groups of adolescents, which include the circle of friends, similarly aged neighbors, and classmates.

Drawing on Parsons' idea of the cultural differentiation of adolescents in relation to adults, James Coleman develops a theory of youth subculture that encompasses specific values and norms reflected in lifestyle choices adopted by young people within their reference and socialization groups.

Margaret Mead develops a similar theory that emphasizes the importance of secondary socialization during adolescence and the increased freedom in choosing reference groups with which adolescents identify and adopt their values and norms. While childhood offers a single model, that of the parents, adolescence offers alternatives that involve free choices, and this freedom of choice provides the premises for the development of the adolescent's personality (Adams and Marshall, 1996).

A. Davies proposes "a theory of socialized anxiety that postulates the determining role of social control and social pressure, materialized in punishments and sanctions correlated with the violation of pre-established social norms in the secondary socialization of.

The self	Description	Author
Global self	People manifest themselves according to the contexts in which they act;	(by Iluț, 2001)
Relational self	It involves evaluating an individual's competencies in various fields;	(Adams, 2009)
Individual self	It is based on interaction with others;	
Collective self	It assumes that the self is different from others;	(Seidikides și Brewer, 2001)
Stable self	It involves forming identifications within groups;	
Institutional self	It is determined by the continuity and coherence of attitudes;	(Iluț, 2001)
Spontaneous self	It is based on group norms, standards, and social goals;	

Interdependent self	It is driven by momentary needs and impulses;	(Turner apud Iluț, 2001)
Independent self	It is based on social relationships;	
Intimate self	It is centered around individual characteristics;	(Chelcea, 2006)
Public self	It is based on weaknesses and personal needs;	
Actual self	It is the image presented to others;	(Abric, 2002)
Ideal self	It represents the current image;	
Desired self	It is what a person wants to be;	
The self in contemporary society	It is what is expected by others;	(Chelcea, 2006)
Global self	It is ambiguous. Socio-economic and cultural changes (globalization, social mobility, communication alternatives through social networks, mobile phones) all lead to more superficial interpersonal relationships due to the proliferation of interpersonal contacts.	(Baumeister by Modrea, 2006)

Table 3. Typologies of the self from various authors.

The self is seen as an integral part of identity. It is perceived as a subcomponent of identity, and throughout life, there is a continuous process of defining and redefining the self, with significant moments in our lives serving as focal points: entering high school, college, parting with loved ones, marriage, and others.

According to Iluț (2001), the self is interpreted as an album that portrays both the image of one's own person and the sum of beliefs and emotions.

Different typologies of the self identified by various authors are summarized in the
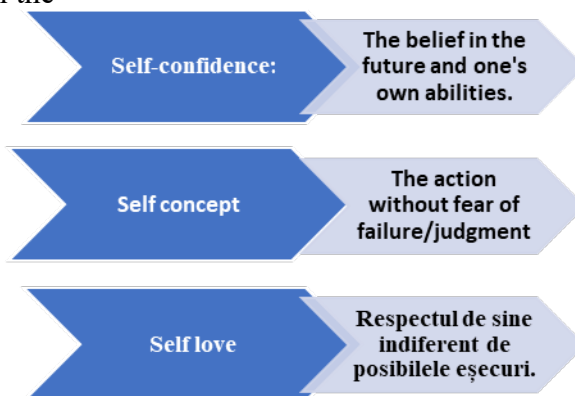
Figure 1. Basic Components of Self-Esteem

There is a classification of self-esteem (see figure 1): the first is the global one (performance self-esteem, social self-esteem and physical self-esteem). Thus, the self as a whole (global self-esteem) evaluates

the personality as a whole, and the evaluation of physical appearance, popularity, scholastic or professional competence, the quality of fulfilled roles represents specific self-esteem. (Heatherton and Vohs, 2000).

In adolescents, global self-esteem is accompanied by the feeling of success experienced in a field and enriches the person with optimism and creates efficacy, an increased level of motivation and an ideal self-image. (Higgins by Sică, 2009). Barometric self-esteem is the image of the self at a given moment, depending on the circumstances, and reference self-esteem is the long-term image, based on the evolutionary history of the individual (by Santrock, 1996).
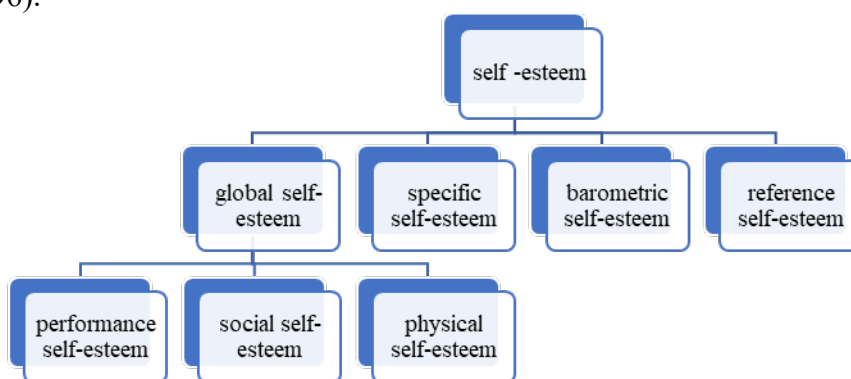
Figure 2. Types of Self-esteem

During the preadolescent phase, self-esteem tends to decrease due to biological and hormonal changes. Physical appearance becomes a frequent source of devaluation. Adolescence is marked by fluctuating levels of self-esteem and the adoption of different attitudes and styles until it stabilizes in youth and adulthood.

Adolescents may conform to or deviate from their peer group. Harwood (2010) identified the development and internalization of consciousness as internal levels that manifest through the control of behavior, including the assimilation of values, roles, and attitudes beyond the family. It is widely believed that the level of self-esteem acquired during childhood determines the level of satisfaction in adult life. Low self-esteem in teenagers can be attributed to pubertal changes such as height (being too short or too tall), uneven body parts (face, breasts, nose, ears, fingers) and hormonal disorders (acne, excessive sweating, leg). Smell, flushing, weight gain, hair loss). The data mentioned above was obtained through research conducted in the fields of psychology and social work, with an emphasis on teenagers as the target demographic.

Strategies to boost motivation

An instructional design based on a series of motivational strategies that focus on developing and improving the capacities of adolescent students to participate in educational activities.

The means by which these activities are used include a variety of methods. The methods used throughout the different stages of educational instruction show significant differences.

The effectiveness of an app depends on both the teaching style of the teacher and the circumstances of the lesson.

Practical application of the lesson requires a customized approach that depends on the intended use. The same strategy can be implemented, but the execution can differ depending on the objective, so introducing intervening variables can lead to different results. (Todean-Muste, 2011)

Teachers can benefit a lot from knowing these specific ways, because they can offer the necessary support to students by using innovative and exciting work methods with the aim of sustainable cognitive acquisitions, achieved with low energy consumption and high efficiency.

The evaluation of the motivational level is a complex phenomenon, intended to engage the teaching staff in a laborious project of detecting the strengths and shortcomings of the instructional-educational act carried out in the classroom

The teacher's role in controlling and directing the motivational system related to learning activities is undeniably challenging. Despite the abundance of theories on the subject, student motivation remains an artistic skill that relies on the mastery and didactic expertise of the teacher.

Fortunately, we can use the theoretical models presented to provide suggestions that can guide teachers, regardless of their area of expertise.

Many teachers criticize and attribute to students the lack of effort and motivation in the learning process. However, any teacher who wants to cultivate a stimulating learning environment must first examine their own motivation and evaluate how they execute their teaching and assessment methods.

The level of competence of the instructor, the degree of involvement in the educational process and the passion with which he carries out his

profession significantly influence the motivational dynamics of the students.

A teacher's lack of enthusiasm is as damaging as their lack of skill. Some teachers do not show interest in their occupation, which can be explained in the current sociocultural context, and this phenomenon "their lack of motivation as teachers" can be the source for the lack of motivation of students.

Learning is especially vital for teenagers and adults who can lose touch with new information and become functionally illiterate. For effective development in society it is fundamental to learn continuously throughout life. This dynamic of knowing is an essential part of personal growth.

The European Union average of adults in lifelong learning is between 8.9% with targets of 15% in 2020, and in Romania in 2013 there was a low participation of adults in learning, about 2% (the target of Romania 2020, being 15%).

D. David (2015) presented in the Psychology of the Romanian People, the following data, which revealed that parents with secondary education tend to raise children with lower levels of intellect. A further analysis of the results obtained by Tellen and Laros/Iliescu (2012), which examined the trend in various cultures and countries, demonstrated that in Romania, the intellectual potential gap between children whose parents are unskilled workers (d=2) and those whose parents are professionals (d=1.2) is significant, the size of the effect favoring parents with higher qualifications.

It is known that intellectual potential has an important genetic component, the results show that the activation of this potential depends on cultural, genetic factors. D. David (2015) adopted as a vision a combination along the constructivist lines of Feuerstein (2000) and Vygotsky (1978), "place here too for cultural programs to activate the existing intellectual potential."

Controlling and directing the motivational system specific to learning activities
Understanding and controlling the motivational system within learning activities represent significant challenges for educators. There are several recent theories and approaches in the field of learning motivation, which bring new perspectives and understandings in this regard.

An important aspect in understanding learning motivation is to recognize its main characteristics. Learning motivation is considered a dynamic concept, which means that it can vary over time and in different contexts. Context also plays a critical role in learning motivation, as it can influence a student's level of interest and engagement in a particular activity.

Also, the motivation of learning is closely related to the goals of the activity. Students are more likely to be motivated when they see the relevance and importance of learning to achieving personal or professional goals. Therefore, clarifying goals and linking them to learning activities can boost student motivation.

Another relevant aspect in understanding learning motivation is the use of explanatory metaphors to model essential meanings. Metaphors can help students understand and integrate information in an easier and more meaningful way. By using metaphors, educators can create stronger connections between the content being learned and students' prior experiences and knowledge.

It is important that educators focus on providing informative feedback and provide diversity in action patterns. Clear and specific feedback can help students understand their progress and improve their performance. Also, diversifying the way information is presented and activities are conducted can keep students interested and engaged in the learning process.

Awareness and justification of behavioral consequences, the use of rewards and constraints, as well as creating a non-stressful psychosocial climate, are other important aspects in controlling and directing the motivational system. Students need to understand the consequences of their actions and be motivated to achieve their goals. Additionally, a positive learning climate that promotes support and mutual respect can stimulate students' motivation.

Several explanatory metaphors mentioned (Middleton and Perks, 2014, pp. 4-5) are:

The "Pathway" metaphor: Learning and motivation are seen as a pathway that students navigate. The clarity of the path, the obstacles encountered, and the rewards along the way can influence their motivation and progress.

The "Journey" metaphor: Education is compared to a journey, with each step representing a learning experience. Motivation acts as the

fuel that propels students forward on their journey, and the destination represents their ultimate goals.

The "Garden" metaphor: Learning is likened to tending a garden. Students' motivation and effort are the seeds that they sow, and their achievements are the blossoming flowers. It emphasizes the importance of nurturing motivation and providing the right conditions for growth.

The "Puzzle" metaphor: Education is compared to solving a puzzle. Each piece of knowledge or skill acquired contributes to completing the puzzle. Motivation serves as the drive to find and place each piece correctly, leading to the sense of accomplishment when the puzzle is solved.

These metaphors help explain and visualize the complex relationship between motivation, learning, and achieving goals in a more relatable and understandable way.

Metaphors	Results
"gas boiler" or "gap in search of energy"	it highlights the tension and variability of internal needs and states.
"gardens" the metaphor found in nature	dependent on the variability of external factors and variables
the "natural course of water", which circulates cyclically in nature	it represents the stable relationship between students, teachers and curriculum content.

Table 4. Middleton & Perks Explanatory metaphors, 2014

A simple and descriptive perspective of approaching and understanding the motivational mechanism can be represented in the form of quadrants, as presented in Frayer's model (Buehl, 2001). They illustrate the stages of organizing the didactic presentation of the motivation problem.

There are multiple alternative theories and definitions of the concept of learning motivation (Middleton and Perks, 2014, p. 3):

- Motivation as an individual impulse

- Motivation in response to the environment

- Motivation as a dynamic system

- Motivation as a polymorphic reality, hierarchical or random, perceived or hidden, observable or

difficult to measure, etc.Una dintre cele mai dificile probleme practice este înțelegerea și calitatea motivației în clasă, fie la elevi, fie la studenți sau în grupurile de lucru.

The dynamics in the evolution of the meanings of motivation in the classroom derives from the variety of alternative theories and definitions of the concept.

Motivation as individual drive: This perspective emphasizes individual motives and needs that lead to action and engagement in learning. Students are motivated by the desire to satisfy their personal needs to achieve certain individual goals and aspirations.

Motivation in response to the environment: This perspective focuses on the external influences that determine students' level of motivation. Environmental factors such as academic demands, teaching methods, feedback and support from teachers and peers can influence student motivation.

Motivation as a dynamic system: This perspective highlights that motivation is a complex and interconnected system. Motivation can vary according to interactions between internal factors (such as individual needs, interests, and values) and external factors (such as task demands and characteristics of the learning environment).

Motivation as a polymorphic reality: This perspective emphasizes that motivation can be diverse and can be experienced in different ways by students. Motivation may be perceived or hidden, measurable or difficult to measure, and may be influenced by a variety of individual and contextual factors.

The most difficult practical problem is to understand the nature and quality of motivation in the classroom, whether in pupils, students or work groups. To explore these issues, methodological and exploratory benchmarks can be used, such as:

Observation: Identifying students in the class who show motivation or demotivation.

Action Set: Analyzing student behavior to assess whether they are motivated or unmotivated.

Assessing motivation: Identifying factors that contribute to the perception of motivation or demotivation among students.

Similarities and differences: Identifying similarities and differences in student motivation in the classroom.

Defining motivation: Developing a definition of motivation based on the observations and opinions previously expressed. These methodological and exploratory approaches can help educators better understand learning motivation and to develop.

The effectiveness of the motivational system depends on the observance of some elements and practical rules in the learning and training process.

These can be codified in the form of action rules and processes. Here are some of those items:

1. Setting a clear priority goal and delimiting it within the actions undertaken. The goal and the motive have a strong connection in the learning process, and the intention to learn has a strong motivational value.

2. Progressive establishment of goals, starting with the closest ones and continuing with the more distant ones.

3. Individualization of goal setting based on the personality of each school community, including each student, taking into account their individual interests and positive attitudes towards a specific domain.

4. Appreciating students' progress in positive terms, emphasizing their achievements and growth.

5. Using competition cautiously and primarily in the context of stimulating cooperation.

6. Acknowledging students' progress in achieving learning objectives and evoking a sense of accomplishment, especially after significant stages of the learning process.

7. Avoiding excessive pressure or excessively high external standards imposed in order to achieve objectives at all costs. Such pressures can generate resistance, stress, and dissatisfaction.

8. To increase the involvement of these norms in the behavior of teachers and students, an action program based on operational objectives is proposed, focusing on stimulating curiosity. This program includes:

9. Planning a series of lessons or a chapter within a continuous teaching unit or complex themes. The nature of the tasks, the method of execution, the pursued objectives, and the evaluation methods are specified.

10. Emphasizing independent work and individualizing activities to differentiate the study topics based on difficulty and short- and long-term objectives.

11. Using positive feedback to enable educators to understand and control students' cognitive and relational processes.

12. Creating additional motivation through emulation and collaboration, facilitating the development of self-direction and self-formation desires.

13. Creatively applying the technique of interrupted or unfinished actions, which maintains a favorable state of tension for the desire to continue an action.

14. Optimally dosing information to stimulate students' curiosity, allowing them to independently seek satisfaction for their curiosity from school and non-school sources. There is a functional relationship between the informational level and the level of curiosity, and flexibility regarding information can vary at different rhythms.

15. Avoiding the presentation of extreme novelty or excessive complexity that exceeds the students' level of intellectual development, to avoid cognitive blockages and inefficient consumption of time and effort.

16. Using the enriched task procedure, which allows students to bring personal experiences or information from other sources into the learning objectives. This enhances a favorable attitude towards studying, responsibility, and active autonomy in assessing progress.

17. Arranging the learning material in forms that generate dissonances or inconsistencies, so that students are led to perceive and correct them, restoring balance and coherence. This involves organizing new, unpredictable, and complex stimuli.

18. Promoting directed cognitive activities by indicating bibliographic sources and through discussions with relevant personalities, which facilitate the exploration of processes and problem-solving.

19. Creating a psychosocial climate that facilitates the strategy of "managing motivational energies" through group interactions and the need for an optimal approach to motivation.

The incorporation of certain elements and strategies can significantly increase the effectiveness of the motivational system during the learning and training process. These tools aim to stimulate student engagement and lead to the achievement of their goals. Moreover, their implementation can exert a substantial influence on students' daily routines and habits.

A healthy and balanced lifestyle can be maintained by an effective motivational system within the educational process. When students are motivated and engaged in learning, they are more inclined to be open and willing to receive new perspectives and opportunities. As a result, their daily decisions regarding nutrition, physical activity, social relationships and stress management can be positively affected.

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IMPORTANCE OF PLAY IN EARLY CHILDHOOD EDUCATION AND CHILDREN'S RIGHT TO PLAY

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Abstract: *Children's play is first and foremost a matter of human rights. As declared in the United Nations Convention on the Rights of the Child (UNCRC, 1989), all children and young people have the right to play and have an intrinsic need to play. Play provides opportunities for children and young people to be free to choose what they do, and to challenge themselves, take risks and enjoy freedoms. (Playboard Northern Ireland, Young researchers' team, 2013). General Comment 17 of the UNCRC states that children need to play in order to grow, learn and that play is a way of taking part in everyday life. Play also provides opportunities to promote gender equality and is essential for children's health and well-being. The importance of play in early childhood education (ECE) will be analyzed with a specific emphasis on the sociological dimension and as a right granted to children by the UNCRC.*

Key Words: *play, right, gender equality, early childhood education.*

1.   Introduction: what is play and why is it important?

Different definitions of play can be found in literature; it is a concept that is essential, and even more than essential, vital, in child's development. Literature suggests many definitions of play; some of which could be stated as follows:
"Children's play is freely chosen personally directed behavior, motivated from within by needs, wants and desires. Play can be fun or serious. Through play children explore social, material and imaginary worlds and their relationship with them, elaborating all the while a flexible range of responses to the challenges they encounter. By playing children learn and develop as individuals and as members of the community." (Kernan, 2007).

It is primarily behavior for its own sake, for the pleasure and joy of being able to do it (Pellis and Pellis, 2009).
'Play is a behavior that is distinguished by specific features that represent a unique way of being: a way of perceiving, feeling and acting in the world. The act of playing, where children appropriate time and space for their own needs and desires, has value for developing a range of flexible and adaptable responses to the environment". (Lester& Russell, 2010).

Play offers opportunities to move beyond existing ways of being, to transform structures and cross borders and it appropriates, inverts and subverts adult cultural expectations of children (Thorne, 1993).
When children engage in social and imaginative play, they build on what is perhaps our most defining characteristic as human beings: our attunement to others and our capacity for reciprocity (Kenneally, 2007 as cited in Genishi et al., 2011). Through play, children explore and know the rules and symbols of their communities, as well as recreate roles and situations that reflect their sociocultural world. As a result, they learn how to subordinate the desired social rules, cooperate with others willingly, and engage in socially appropriate behavior. Over time, these competences are transferred to children's everyday behaviors. It is important to **recognize** (to understand the nature and benefits of play), **respect** (adults should not deny children the right to play, i.e. they should be sensitive to the child's tendency to play), and **promote** (ensuring conditions to play) play as a right. (Lester& Russell, 2010).

Play, being the vital part of children's development, acts across several adaptive systems to contribute to health, well-being and resilience. Through play children have a chance to experience and to learn to manage the whole range of various (positive and negative) emotions, such as jealousy, boredom and anger, but also happiness, pleasure and enjoyment (Lester & Russell, 2010). As they play, children rearrange their worlds to make them either less scary or less boring (Sutton-Smith, 1997).
 Through play children have a chance to take risks, to have adventures and misadventures, to have contact with nature and the environment, to develop friendships, to negotiate relationships, they learn how to solve conflicts, to experience the loss of friendship, to fall out with friends, etc. On the playgrounds children learn about tolerance, valuing of differences, respect for others, but also about the current fashion trends (Lester & Russell, 2010).

In a game of chase, children are physically active and maintain the game by negotiating and agreeing to abide by the rules. Yet what they value is the thrill of the chase. The rules provide a frame within which the players know that 'this is play'; this provides a safe place where emotions can be experienced without the consequences, they might bring in the 'real' world. (Lester & Russell, 2010).

Play also promotes the physical health and well- being of children, it helps them to develop sensorimotor skills, coordination and balance.
There is also enough evidence in research investigating the importance of play that pretense/ socio-dramatic play has especially been supportive in coping with emotionally arousing or stressful events, such as going to the dentist or hospital as well as in therapeutic contexts with children who have been subjected to abuse, and/or experienced profound grief. (Clark, 2006 as cited in Whitbread, 2012).
The five types of play (physical, symbolic, play with objects, pretense/socio-dramatic play and games with rules) support child development in different areas as explained below:

Physical play: This type of play includes active exercise play (e.g.: jumping, climbing, dancing, skipping, bike riding and ball play), rough-and-tumble (with friends, siblings or parents/ guardians) and fine-motor practice (e.g.: sewing, coloring, cutting, junk modelling and manipulating action and construction toys. (Whitbread, 2012). The evidence suggests that this type of play is related to children's developing whole body and hand-eye co-ordination, and is important in building strength and endurance (Pellegrini and Smith, 1998, as cited in Whitbread, 2012). The type of play that is extensively researched within this category; rough and tumble play, is often evaluated as a mechanism through which children learn to control aggressive feelings. Outdoor physical play also supports children's developing independence, resourcefulness and self-regulation.

Symbolic play: During the first five years of life, children beginning to master the symbolic systems such as the spoken language, painting, drawing, numbers incorporate these aspects of their learning as an important element within their play. This type of play supports their developing technical abilities to express and reflect upon their experiences, ideas and emotions.

Furthermore, extensive research has clearly established that this type of play is a powerful support for developing language abilities and, crucially, through its support for phonological awareness, impacts

upon the ease with which young children develop early literacy skills. (Christie and Roskos, 2006, as cited in Whitbread, 2012).

Play with objects: Play with objects begins as soon as infants can grasp and hold on to them; early investigative behaviors include mouthing/biting, rotating while looking, rubbing/stroking, hitting and dropping. This might be described as 'sensory-motor' play when the child is exploring how objects and materials feel and behave. From around eighteen to twenty-four months toddlers begin to arrange objects, which gradually develops into sorting and classifying activities. By the age of four years, building, making and constructing behaviors emerge*. (Whitbread, 2012).

Pretense/socio-dramatic play: Sociodramatic play is where children act out imaginary situations and stories, become different characters, and pretend they are in different locations and times. Through pretense play, children develop and improve creative thinking and learn how to fit into different situations, their self-restrain and self-regulation is also promoted.

*Games with rules: G*ames with rules such as hide and seek, dodge ball, throwing, catching etc. as well as card games, digital games promote children's ability to follow rules and guidelines and improve their social skills such as sharing, taking turns and understanding and valuing others' perspectives. The main concern with digital games is that they could trigger feelings of violence in children can easily be eliminated by effective adult supervision however, the issue still remains controversial and needs further research, despite this fact, it can be concluded that games with rules help children to develop skills to subordinate the rules of the society they are going to live in. (Whitbread, 2012, Lester& Russell, 2010).

The importance of play should also be evaluated culturally as we can observe differences among cultures; Culture refers to the traditions and values of our communities and through play, children   explore and learn the rules and symbols of their communities. Children reproduce, transform, create and transmit culture through their own imaginative play, songs, dance, animation, stories, painting, games, street theatre, puppetry, festivals, and so on. As they gain understanding of the cultural and artistic life around them from adult and peer relationships, they translate and adapt its meaning through their own generational experience. Through engagement with their peers, children create and transmit their own language, games, secret worlds, fantasies and other

cultural knowledge. Children's play generates a "culture of childhood," from games in school and in the playground to urban activities such as playing marbles, free running, and street art and so on. Children are also at the forefront in using digital platforms and virtual worlds to establish new means of communication and social networks, through which different cultural environments and artistic forms are being forged. Participation in cultural and artistic activities are necessary for building children's understanding, not only of their own culture, but other cultures, as it provides opportunities to broaden their horizons and learn from other cultural and artistic traditions, thus contributing towards mutual understanding and appreciation of diversity. (Committee on the Rights of the Child General comment No. 17 (2013) on the right of the child to rest, leisure, play, recreational activities, cultural life and the arts (art. 31, Adopted by the Committee at its sixty-second session (14 January – 1 February 2013).

Cultural attitudes, transmitted to the children predominantly through the behavior of their parents, affect how much play is encouraged and supported, to what age individuals are regarded as children who are expected to play, and the extent to which adults play with children. Participation with children in play provides adults with unique insights and understanding into the child's perspectives. It builds respect between generations, contributes to effective understanding and communication between children and adults and affords opportunities to provide guidance and stimulus.

The impact of culture on play can be observed in three different ways: (Gaskins 2015)

-       **Culturally curtailed play:** In some pre-industrial societies play is tolerated but viewed as being of limited value and certain types of play are culturally discouraged. For example, in Gaskins (2000) study of the Mayan people in the Yucatan she found that pretense involving any kind of fiction or fantasy was regarded as telling lies

-       **Culturally accepted play:** in pre-industrial societies parents expect children to play and view it as useful to keep the children busy and out of the way, until they are old enough to be useful, but they do not encourage it or generally participate in it. Consequently, the children play more with other children unsupervised by adults, in spaces not especially structured for play, and with naturally available objects rather than manufactured toys.

- **Culturally cultivated play:** middle-class Euro-American families tend to view play as the child's work; play is encouraged and adults view it as important to play with their children. The children also often spend time with professional careers, who view it as an important part of their role to play with the children to encourage learning.

However, even in the societies where culturally cultivated play persists, there are some sociological factors in action:

Children's safety and risk: in intensely urbanized countries, the culture is currently quite risk-averse, and so children are heavily supervised and play indoors, in their gardens and in specially designed play spaces with safety surfaces, whereas in less dense urban areas (such as the Scandinavian countries) they have more opportunity to play outdoors (Lester and Russell, 2010).

Living in urban environments can have negative effects on the playfulness of children who are fortunate to live in supportive households, but whose parents, carers and teachers, perceiving a range of environmental hazards and dangers, become overly risk-averse and over-protect and over-supervise their children (Veitch et al, 2006).

This problem of parental over-supervision and over-scheduling of children has arisen quite recently, just in the last few decades.

However, according to a survey of parental attitudes in sixteen countries (Singer et al., 2009) this is now a worldwide issue. Mothers in this survey, from countries across Europe and in four other continents, reported fears about allowing their children to play outside related to increases in traffic, crime, harassment and violence, possible abduction, dirt and germs, and many more similar issues.

A report written for the UK National Trust (Moss, 2012) cites evidence that the area where children are allowed to range unsupervised around their homes has shrunk by 90% since the 1970s.

Even the most playfully inclined children will not be able to play, if they are not given the time, the space and the independence to develop their own spontaneous and self-initiated play activities.

Lester and Russell (2010), have stated that, in their play, children's appropriate different spaces and features within their environment

which are quite unpredictable by adults, and that the richest play spaces are mostly natural and unplanned.

Though many urban playgrounds, designed by adults, are often too neat and tidy, the most successful ones are 'adventure playgrounds' which are set up so that children can adapt them and build their own spaces, using a range of natural and man-made building materials (Bartlett, 2002).

The amount of time the parents devote to playing with their children decrease as a result of the impact of living in urban areas, having to work for longer hours and the daily rush in their lives (Chawla, 2002, as cited in Lester and Russell, 2010).

In the educational domain, with the curriculum becoming more and more competitive, most of the children, again in especially urban areas, have increasingly less and less time for play and leisure activities, since they are over-scheduled. Continuous absence of play may disrupt emotion-regulation systems, which in turn will diminish children's physical, social and cognitive competences (Pellis and Pellis, 2009).

The double benefit of more outdoor play played together by both sexes would be the prevention of major health problems such as obesity and the reducing of gender stereotyping which would be beneficial for the overall labor market in terms of more options for future subject choices (Molu, 2014).

These being said, children's right to play should be supported by their social and physical environment, provision means more than providing play facilities; and in order to ensure children's right to play, it is their fundamental rights which need to be secured first.

2. CHILDREN'S RIGHT TO PLAY

Article 31 says governments must guarantee the right to play for all children.

There are three kinds of things governments have to do:(IPA Summary on United Nations General Comment No: 17 on Article 31(2013).

a) Respect rights: the government must not stop children and young people from enjoying their right to play; The obligation to respect

requires States parties to refrain from interfering, directly or indirectly, in the enjoyment of the rights provided for in article 31;

b) Protect rights: the government must stop other people from interfering with children's right to play; the obligation to protect requires States parties to take steps to prevent third parties from interfering in the rights under article 31;

c) Fulfil rights: the government must make sure that all children get the necessary services, provision and opportunities to enable them to enjoy their right to play. The obligation to fulfil requires States parties to introduce the necessary legislative, administrative, judicial, budgetary, promotional and other measures aimed at facilitating the full enjoyment of the rights provided for in article 31 by undertaking action to make available all necessary services, provision and opportunities.

Even where resources are limited, governments must do everything they possibly could to make sure all children can enjoy their right to play, and must not do anything that stops the enjoyment of this right.

Governments should devote resources into:

 Raising public awareness of both the right to, and the significance of play and leisure for both boys and girls of all ages (respecting gender equality) in contributing to the enjoyment of childhood, promoting the optimum development of the child and building positive learning environments;

Legislation is required to guarantee access for every child, without discrimination on any ground, to all recreational environments including public and private spaces, natural space, parks, playgrounds, services and events.

Municipal planning: Local municipalities should assess provision of play and recreation facilities to guarantee equality of access by all groups of children, including through child-impact assessments. Consistent with the obligations under article 31, public planning must place a priority on the creation of environments which promote the well-being of the child. In order to achieve the necessary child-friendly urban and rural environments, consideration should be given to, inter alia:

- Availability of inclusive parks, community centers, sports and playgrounds that are safe and accessible to all children;

- Creation of a safe living environment for free play, including design of zones in which players, pedestrians and bikers have priority;

- Public safety measures to protect areas for play and recreation from individuals or groups who threaten children's safety;

- Provision of access to landscaped green areas, large open spaces and nature for play and recreation, with safe, affordable and accessible transport;

- Road traffic measures, including speed limits, levels of pollution, school crossings, traffic lights, and calming measures to ensure the rights of children to play safely within their local communities;

- Provision of clubs, sports facilities, organized games and activities for both girls and boys of all ages and from all communities;

- Dedicated and affordable cultural activities for children of all ages and from all communities, including theatre, dance, music, art exhibitions, libraries and cinema. Such provision should comprise opportunities for children to produce and create their own cultural forms as well as exposure to activities produced by adults for children;

- Review of all cultural policies, programs and institutions to ensure their accessibility and relevance for all children and to ensure that they take into account the needs and aspirations of children and support their emerging cultural practices; Establishment of safe and accessibility standards for all play and recreational facilities, toys and games equipment.

Schools: Educational environments should play a major role in fulfilling the obligations under article 31, including:

- Physical environment of settings: States parties should aim to ensure the provision of adequate indoor and outdoor space to facilitate play, sports, games and drama, during and around school hours; active promotion of equal opportunities for both girls and boys to play; adequate sanitation facilities for boys and girls; playgrounds, play landscapes and equipment that are safe and properly and regularly inspected; playgrounds with appropriate boundaries; equipment and

spaces designed to enable all children, including children with disabilities, to participate equally; play areas which afford opportunities for all forms of play; location and design of play areas with adequate protection and with the involvement of children in the design and development;

-        Structure of the day: Statutory provision, including homework, should guarantee appropriate time during the day to ensure that children have sufficient opportunity for rest and play, in accordance with their age and developmental needs;

-        School curriculum: Consistent with obligations under article 29 concerning the aims of education, appropriate time and expertise must be allocated within the school curriculum for children to learn, participate in and generate cultural and artistic activities, including music, drama, literature, poetry and art, as well as sports and games;

-        Educational pedagogy: Learning environments should be active and participatory and offer, especially in the early years, playful activities and forms of engagement;

Post conflict situations, government should take active measures to restore and protect article 31 rights by:

- Encouraging play and creative expression to promote resilience and psychological healing and explore identity and belonging;

- Creation or restoration of safe spaces, including schools, where children can participate in play and recreation as part of the normalization of their lives.

Control the marketing and commercialization of play; many children and their families are exposed to increasing levels of unregulated commercialization and marketing by toy and game manufacturers. Parents are pressured to purchase a growing number of products which may be harmful to their children's development or are antithetical to creative play, such as products that promote television programs with established characters and storylines which impede imaginative exploration; toys with microchips which render the child as a passive observer; kits with a pre-determined pattern of activity; toys that promote traditional gender stereotypes or early sexualization of girls; toys containing dangerous parts or chemicals; realistic war toys and games. Global marketing can also serve to weaken children's

participation in the traditional cultural and artistic life of their community.

Training and capacity-building: All professionals working with or for children, or whose work impacts on children (Government officials, educators, health professionals, social workers, early years and care workers, planners and architects, etc.), should receive systematic and ongoing training on the human rights of children, including the rights embodied in article 31. Such training should include guidance on how to create and sustain environments in which the rights under article 31 can be most effectively realized by all children.

International cooperation: Governments should promote international cooperation in the realization of the rights provided for in article 31 through the active engagement of United Nations agencies including UNICEF, UNESCO, UNHCR, and UN Habitat, UNOSDP, UNDP, UNEP and WHO, as well as international, national and local NGOs. IPA Summary on United Nations General Comment No: 17 on Article 31(2013)

2.1. **Children requiring particular attention to realize their rights under article 31**

Girls: A combination of significant burdens of domestic responsibilities and sibling and family care, protective concerns on the part of parents, lack of appropriate facilities and cultural assumptions imposing limitations on the expectations and behaviour of girls can serve to diminish their opportunities to enjoy the rights provided for in article 31, particularly in the adolescent years. In addition, gender differentiation in what is considered girls' and boys' play and which is widely reinforced by parents, caregivers, the media and producers/manufacturers of games and toys serve to maintain traditional gender-role divisions in society. Evidence indicates that whereas boys' games prepare them for successful performance in a wide range of professional and other settings in modern society, girls' games, in contrast, tend to direct them towards the private sphere of the home and future roles as wives and mothers

Children living in poverty: Lack of access to facilities, inability to afford the costs of participation, dangerous and neglected neighborhoods, the necessity to work and a sense of powerlessness and marginalization all serve to exclude the poorest children from realizing the rights provided for in article 31. For many, the risks to their health and safety outside the home are compounded by home environments

which provide no or little space or scope for play or recreation. Children without parents are particularly vulnerable to loss of their rights under article 31; children in street situations are not afforded play provisions, and are commonly actively excluded from city parks and playgrounds, although they use their own creativity to utilize the informal setting of the streets for play opportunities. Municipal authorities must recognize the importance of parks and playgrounds for the realization of the rights provided for under article 31 by children living in poverty and engage in dialogue with them in respect of policing, planning and development initiatives. States need to take action to ensure both access to and opportunities for cultural and artistic activities for all children, as well as equal opportunities for play and recreation.

Children with disabilities: Multiple barriers impede access by children with disabilities to the rights provided for in article 31, including exclusion from school; informal and social arenas where friendships are formed and where play and recreation take place; isolation at the home; cultural attitudes and negative stereotypes which are hostile to and rejecting of children with disabilities; physical inaccessibility of, inter alia, public spaces, parks, playgrounds and equipment, cinemas, theatres, concert halls, sports facilities and arenas; policies that exclude them from sporting or cultural venues on the grounds of safety; communication barriers and failure to provide interpretation and adaptive technology; lack of accessible transport.

Children in institutions: Many children spend all or part of their childhood in institutions, including, inter alia, residential homes and schools, hospitals, detention centers, remand homes and refugee centers, where opportunities for play, recreation and participation in cultural and artistic life may be limited or denied. The Committee stresses the need for States to work towards the de-institutionalization of children; but until that goal is reached, States should adopt measures to ensure that all such institutions guarantee both spaces and opportunities for children to associate with their peers in the community, to play and to participate in games, physical exercise, cultural and artistic life. Such measures should not be restricted to compulsory or organized activities; safe and stimulating environments are needed for children to engage in free play and recreation.

Children from indigenous and minority communities: Ethnic, religious, racial or caste discrimination can serve to exclude children from realizing their rights under article 31. Hostility, assimilation

policies, rejection, violence and discrimination may result in barriers to enjoyment by indigenous and minority children of their own cultural practices, rituals and celebrations, as well as to their participation in sports, games, cultural activities, play and recreation alongside other children. States have an obligation to recognize, protect and respect the right of minority groups to take part in the cultural and recreational life of the society in which they live, as well as to conserve, promote and develop their own culture. However, children from indigenous communities also have the right to experience and explore cultures beyond the boundaries of their own family traditions. Cultural and artistic programs must be based on inclusion, participation and non-discrimination.

Children in situations of conflict, humanitarian and natural disasters: The rights provided for in article 31 are often given lower priority in situations of conflict or disaster than the provision of food, shelter and medicines. However, in these situations, opportunities for play, recreation and cultural activity can play a significant therapeutic and rehabilitative role in helping children recover a sense of normality and joy after their experience of loss, dislocation and trauma. Play, music, poetry or drama can help refugee children and children who have experienced bereavement, violence, abuse or exploitation, for example, to overcome emotional pain and regain control over their lives. Such activities can restore a sense of identity, help them make meaning of what has happened to them, and enable them experience fun and enjoyment. Participation in cultural or artistic activities, as well as in play and recreation, offers children an opportunity to engage in a shared experience, to re-build a sense of personal value and self-worth, to explore their own creativity and to achieve a sense of connectedness and belonging. Settings for play also provide opportunities for monitors to identify children suffering from the harmful impact of conflict. (Committee on the Rights of the Child General comment No. 17 (2013) on the right of the child to rest, leisure, play, recreational activities, cultural life and the arts (art. 31, Adopted by the Committee at its sixty-second session (14 January – 1 February 2013).

Conclusion

Play is essential in children's lives; having observed the pedagogical and sociological importance of play, special care and attention should be given on the practice of the right to play, granted to children by Article 31 of the United Nations Convention on the Rights of the Child

(UNCRC, 1989), Governments and NGO's as well as academics need to focus on the implementation of this right and further research is needed and should be encouraged.

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EMOTIONAL INTELLIGENCE:
PARTICULARITY IN THE BECOME OF THE ETHICAL MAN

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Abstract: *The person whose emotional intelligence is well developed will be able to create an environment of trust and honesty, in which reason and competitiveness dominate, who can realize and control their own emotions. Therefore, emotional intelligence and its related components represent concrete ways to optimize the quality of the educational act, emphasizing at the same time its emotional dimension. At the same time, the teacher, in order to become an ethical person, must be able to develop his emotional intelligence to an emotional culture. In this article, the ethical man is analyzed from a historical perspective and in correlation with emotional intelligence. In this context, reference is made to the teaching staff.*

Keywords: *emotional intelligence, teaching staff, emotional culture, ethics pedagogy, ethical man.*

The model of contemporary education, based on emotional culture, generated by the challenges and needs of the contemporary world, amplifies the emphasis on the demands regarding the quality and professionalism of teaching staff, as well as the structure of the skills necessary to exercise this activity at the highest possible level.

This comes to emphasize that success in the activity of teaching staff depends not only on rational intelligence (IQ) but also on the level of emotional intelligence, the ability to manage one's own emotions, to empathize with those with whom one relates, all these categories of concrete ways of optimizing the quality of the educational process , emphasizing the impact of its emotional dimension.

Carrying out an analysis of the various problems currently faced by teaching staff in their professional activity, we attest that they are mostly of an emotional nature and relate to the lack of development of

emotional intelligence, which has an indispensable impact on educational performance.

Personal problems, such as stress, anxiety, frustrations, emotional exhaustion, frequent conflict situations and other implications observed in teachers have generated scientific interest in studying the need to develop emotional intelligence.

At the same time, the frequent reforms in the field of education, and the demanding requirements, require strong, intelligent, well-trained personalities, able to organize and lead educational processes in a competent and creative manner.

Thus, it can be said that man must take action.

If we look at the action from a moral point of view, then ethics pedagogy [Apud 8] comes with fundamental explanations regarding the necessity of the educational valorization of morality and knowledge of its specifics.

Moral problems, regarding the nature of morality, correlate, within the ethics pedagogy, with educational problems regarding the valorization of ethics in the educational process from the perspective of those who teach.

In this order of ideas, the pedagogy of ethics is the field whose specific object of study is the functional-structural dimension of ethics in the institution of education, approached methodologically from the perspective of the specific purposes in the development of the ethical intelligence of the teacher, which aims at the formation and development of the student's human personality through the valorization of the theory-application correlation, according to specific principles and laws, which regulate the foreseeable development of the valorization of ethics at the process level; an essential purpose of ethics pedagogy would be the formation of the ethical human.

To describe the portrait of the current ethical human would mean to analyze human dignity and the becoming of the ethical person.

Therefore, a problem emerges that resides in: What are the ways of capitalizing on emotional intelligence in becoming an ethical person?

In this order of ideas, emotions are manifestations of attitudes, which can be defined as affective assessments that people make about the

world, involving an evaluation by the subject regarding the significance of an event or a circumstance. This appreciation depends on factors related to the subject's culture, education and personality: "Nature has developed our emotions over millions of years of evolution. As a consequence of this fact, today our emotions function as an inner guidance system, delicate and sophisticated", mentions Roco M. [9, p. 137]. In other words, through emotions, we evaluate the world as pleasant or unpleasant, good or mean, aggressive or indulgent adjusting all these to a personal or general value system.

The root of the word emotion is "motere", the Latin verb meaning "to move" plus the prefix "e", suggesting that the tendency to act is involved in any emotion. [3, p. 32]

Being sad, joyful, brave, fearful, angry, ashamed, optimistic, tolerant, balanced, etc., all are emotional judgments about situations or circumstances. This is why, those who manage to manage their emotional life with more calm and self-awareness seem to have a clear advantage in terms of maintaining health, success in interpersonal relationships and professional achievements.

In the *Nichomatic Ethics*, Aristotle asks himself philosophical questions about virtue, character and a better life, his challenge being the mastery of our emotional life through intelligence. Our passions, when well exercised, are wise; they guide thinking, values and survival. Unfortunately, they can go crazy easily, which happens often. As Aristotle notes, the problem does not lie in the existence of emotions, but in how we appropriate emotions and their expression. The question is how can we give intelligence to our emotions - and bring civility back to the streets and affection to common life?

This refers to the ethical man in his becoming.

Therefore, we proposed to analyze this desired, first, in historical terms.

Thus, the modern age found in Kant the greatest interpreter of the concept of human dignity. He defines dignity as that value that has no price, immeasurable because dignity is defined as that which is an end in itself and which cannot be an object of commercial exchange. Kant states that morality is the exclusive condition for a rational being to be a finality, an end in itself, because only on its basis can this being be constituted as a legislative member of the rule of ends. This is why

only morality, and humanity capable of morality, can have dignity. [5, p. 77-78]

In this context, following the path of the evolution of the human being up to the human person, in order to illustrate the ethical issues, it is indicated that the people of the Middle Ages recognized a reality that should be called human, they discerned in the mix of the society in which they lived a model applicable equally to the king and the beggar, the merchant and the peasant, the rich and the poor, etc. This was the type we would later call a libertine, a free-thinker. [4]

Therefore, for medieval Christian anthropology, human is the creature of God, who made man and explicitly gave him dominion over nature, so he has the vocation to be the master of a desacralized nature, of the earth and of animals. By essence, by vocation, the man of the Middle Ages is a pilgrim, and in the 13th century, in the highest and most dangerous form of pilgrimage, a crusader. In another aspect, a man appears as a penitent. The man of the Middle Ages is always ready to respond to a calamity, to an eventful shock with exceptional penance. The man of whom the dogma and practice of medieval Christianity tend to make a universal type easily recognizable under all conditions is a complex being. First, it is constituted by the conflicting union of soul and body.

Regardless of medieval Christianity's disdain for the body, "this disgusting garment of the soul", medieval man is constrained not only by his existential experience but also by Christian teaching to live according to the body-soul couple. The uniqueness of the human organism and the solidarity is affirmed by the social body. In certain theological and philosophical schools, man is a microcosm, man thus acquires a new positive image, that of nature in miniature, a nature created, of course, by the Divinity and obeying the laws given by it, but through which man finds a centrality, a fullness to the "scientific" plan. [Ibidem, p. 11]

In the Middle Ages, the intellectual does not exist. There is no word for it. However, there is a type defined as the person who works "with speech and mind" and not "with hands". It can have different names: magister (master, master), doctor (scholar, learned), philosopher, "litteratus" (literate), especially, those who know Latin. He is a cleric and enjoys the privileges of this status. Even more so, if he does not pass the minor orders, he takes advantage of the advantages of the clerical condition without assuming the specific tasks. He is a man of school, of an urban school. He is a man of books and words, insisting

on what differentiates him, separates him from the manual worker and elevates him above him. He is indeed a "teacher". [Ibidem, p. 22]

From this, we deduce that in an ethical aspect, man is seen as a microcosm, which is subordinated to divine laws.

The Renaissance man, for his part, refers, in a common mentality, to a synthesis of a human product of order, of course, social, cultural, political, and economic, but, to a lesser extent, also spiritual.

In addition to the revival of the world of ancient values, the Renaissance represents above all the affirmation of man, of human values, in all fields, from art to civil life. For the first time, the figure of man, in its complexity, was discovered and brought to light: the artist, author of some original works, but also the author of the transformation of his own social position, thanks to the value of his art: thus, he gains the right to intervene in life cities; the humanist, the notary, the jurist acquire authority and, through the activities that give them their identity, show their importance for political life".

The essential distinguishing feature of the Renaissance is the "time of the great autobiographies", which recounted the formation of the new man, the modern man. The Renaissance man wants to absorb the results of techniques and sciences, he cannot waste time in education with programs that disregard the imperatives of the time. [2, p. 9]

The Renaissance civilization is the first to discover and highlight the human figure in its integrity and richness, it is imbued with rhetoric, drawing its roots from a reality in which the histories, figures and even the bodies of people are at the center of attention: a reality in which painters and sculptors portray unforgettable human faces and in which philosophers never tire of repeating that "man is a great miracle (magnum miraculum est homo)". [Ibidem, p. 14]

A new philosophy about man ("the discovery of man") and interest in the history of people in society is being developed. In fact, the root of man's curiosity for man, typical of the Renaissance, lies in a new conception of man in the world.

Starting from the premise that man is a sentient, thoughtful, thinking being, in control, free, lives in society, has set himself, masters, allowed himself to be mastered, made his own laws of coexistence, nevertheless, when we examine him closely, we often wonder at the vileness and cruelty with which this king of nature is often soiled.

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The man of light has evolved a lot for the better, offering himself a different historical perspective, here the virtues of the chivalrous spirit appear as an essential attribute of the age of light.

Ethically, the man of lights appears as an elevated type, with indispensable noble traits. The main characteristic of the Baroque period is the conflict between novelty and tradition, and Baroque man oscillates between the contradictory tendencies of his age: modern science and witch-hunting, philosophical rationalism and religious intolerance, the support of the divine origin of power and the beheading of kings, economic and cultural openness and the decline of great empires. Contradiction and conflict- these dictate within the elements of human personality formation called "baroque".

The 17th century was an era of uprisings and agitations, destruction, disorder, ambitions and the overthrow of the social order, therefore an era of great tensions: ideological conflict, political and religious conflict, war, revolution, the maximization of social antagonism, frequent duels, endless disputes for primacy within the administrative and ecclesiastical hierarchies. Obviously, from such a perspective of a "mundus furiosus", historians faced the difficulty of penetrating the mysteries of this contradiction, starting, inevitably, from the simply negative assessment of the era [10].

It turns out that, from an ethical point of view, the Baroque man was a man of contradictions. There is, with certainty, a romantic "world", a coherent world, with an ideology, a metaphysics, a system of institutionalized thinking and action strategies specific to each field, including aesthetics, all of which are recognizable beyond the numerous contradictions or paradoxes through which this world manifests its own dynamism. We refer to that world that was born after 1789, at the crossroads of history, to share, for at least half a century, "revolutionary principles" and, together with them, "a pedagogy anti-democratic promoted by the surviving monarchies" throughout Europe.

In this period, in which the two co-founding classes of a new civilization take shape, the bourgeoisie and the working class, each having aspirations, ideals and behaviors related to residual nostalgic aristocratic traditions, difficult to abandon, especially in the field of morals and mentalities, the man of this era is "par excellence", a man of ambivalence, of the interval: oscillating "between two eras, between two societies, between two civilizations. Being an artist, the romantic, above all else, searches for himself, descends into the inner abysses of

subjectivity, self-analyzes, in a chilling search for his own density, inserting himself into a history of freedom. [12]

Correlatively, it also does this by establishing an original "ethical" vision of the world, within which the problems of evil and power decline, in mythological versions telling for contemporaries, but also for posterity, because sometimes they speak of still current truths.

Romantic discourse assumes, in a specific way, the epistemological, ethical, and metaphysical functions of communication, giving them a didactic, altruistic dimension. In this territory, however, there is a lack of studies about morals, about behaviors not only moral but also physiological, let's say, knowing that for romantic thinking the physical and the moral determine each other and that there is, in the era, a real fashion that privileges value.

However, this does not diminish their value in any way, on the contrary, the taste and density of the information, combined with the general perspective on the period discussed, undoubtedly increase their value.

The romantic intellectual remains above all melancholic, embarrassed by finitude, thirsty for infinity and experiencing "the pleasure... of oscillating undecidedly between these two poles.

If the term intellectual implies not only a way of thinking and feeling, but also a way of acting, tolerant, democratic, then, certainly, the romantic man - in the position of priest, doctor, educator, thinker, but more notably revolutionary - it precedes and smooths the way to the convincing affirmation, in history, of a social role, which will impose its presence with energy in the 20th and 21st centuries, already read by some researchers as the "century of intellectuals". [1, p. 15]

Thus, following the path of human evolution in order to determine ethical issues, we find a traveler, a pilgrim, a microcosm, a value, a miracle, a romantic, etc., who gradually acquires a positive image, who is "discovered" as a totality that tends towards freedom, but that respects the "rules of life".

Therefore, the problem in the field of ethics is not the good and thoughtful man, as in Aristotle, nor the beautiful and good man, as in Plato, nor the man improved by religious edification, nor the man delivered by a categorical imperative of duty without addition and

without a remainder; it is, rather, the search for positive consequences for education.

On the path of analytical reflection on the issue of ethics and education, we arrive, in this way, at the analysis of some valences of the ethical personality of the pedagogue in the institution of education.

Thus, we immediately think about the fact that the personality of the teaching staff is an important part of success and efficiency in this profession. It accompanies the educational act and influences the results of the learning process. The emphasis on performance, on teaching efficiency, determined the orientation of research towards the psychological profile of the teacher, towards the identification of those personality traits that influence the student's learning performance. In the analysis of the relationship between the ethical personality variables of the teacher and teaching efficiency, it should be taken into account that there are numerous ethical behavioral clichés of teaching staff. [7]

To justify this opinion, we repeat an argument that we find in A. Nevularu: teachers who "keep a formal and affective distance from students, considering that this would be the guarantee of obtaining respect and consolidating authority; this behavior can generate mistrust, suspicion, tensions and conflicts; teachers with "popular" behavior, who adopt a certain familiarity in their relations with students; they can feel minimized, treated with disrespect and often the students react with insolence; teachers with a "cautious, withdrawn and expectant behavior, concern that stems from the fear of not appearing ridiculous in front of the students; teachers, "equal to themselves, who avoid being too enthusiastic or emotionally venting in front of students, developing an artificial behavior; teachers who "give up" as a result of the fact that they do not trust the students, in their ability to self-manage and self-organize.

These clichés prove the lack of mutual knowledge between teacher and student, so a low professional competence, and the inability to find the appropriate ethical behavioral solution in relation to the various situations that teaching work entails. We have good reasons to say that today the teacher is the central figure of contemporary educational reform. He must give up his traditional role and transform himself into a planner of group activities, a facilitator of student interaction and a consultant.

The transformation of classroom work into an enjoyable activity carried out in a warm and safe environment depends on the teacher. In all situations, in order to act as a model person, it is important for the teaching staff to manage all their behavioral elements, both direct and indirect, in order to provide a good development platform for their students.

The role model is also based on an element of social proof – people tend to respect those people whom others respect. The respect that the learner has for the teacher must also be supported by a certain affection governed by the formal space of the school. In this analytical context, self-esteem is "the positive or negative evaluation we make of our own person, it is the way we feel about ourselves".

It is observed that self-esteem is a result of two dimensions: the way in which the teaching staff claims certain aspects (through control, imposing some rules, punishing inappropriate behaviors); how he manages to understand the needs of the students.

The teaching staff must have many requirements regarding the students and monitor how they are fulfilled but also offer them understanding, warmth and emotional safety. Authoritarian teaching staff are too strict and inflexible, while permissive teaching staff offer support and understanding, but fail to clearly impose certain limits on the students. Students' self-esteem can be an indicator of school success or failure.

In this sense, the relevance of studying emotional intelligence in teaching staff is fundamental and has as its objective the detection of "strong points" and "vulnerable points" characteristic of the professional training process. Knowing them will give us the possibility of a clearer picture of the emotional intelligence profile of the teaching staff, the design and modernization of the professional training curriculum, and the increase of the efficiency of the skills necessary for the educational activity. At the same time, it will help us to outline the perspectives of exploiting the potential and applying strategies for the development of emotional intelligence as an important element in ensuring the efficiency of the didactic activity, adjusting them to the professional training standards of the teaching staff.

Estimating the value of emotional intelligence in teachers represents the totality of evaluations, interpretations, and impressions, related to one's own person, to those around and to various situations. These estimates are, to a large extent, determined by the social environment,

the way of interpersonal relationships, previous experiences, belief systems and values that take the form of an inner dialogue.

The meaning of awareness of emotional intelligence helps to understand how the inner dialogue influences feelings, actions and reactions, requiring them to be changed according to various circumstances.

In order to identify the level of development of the emotional intelligence of teaching staff, we applied the Friedmann Emotional Maturity Scale experimental method.

The author of the questionnaire in question is the famous psychologist of German origin Otto Friedmann Kernberg, who during Nazi Germany managed to emigrate with his family to Chile, where he later devoted himself to research in the field of psychiatry and psychoanalysis. The questionnaire evaluates the degree of emotional maturity in terms of emotional balance or imbalance. Emotional maturation here refers to the strength of the Superego, and its qualities are emotional security, realistic perception of oneself, others and the world, and objectivity of the Ego. The emotional imbalance is generated by the fragility of the Ego, and emotional instability and is accompanied by a series of infantile psycho-affective reactions.

This scale measures the level of emotional intelligence, by providing answers to a number of 25 questions, which are answered with Yes or No, and each answer has a number of points associated with it. The score to be found is made by adding up the points awarded for each chosen answer and dividing by 25.

The evaluation has scores that oscillate between 0-10 points and signifies infantilism; 10-12 points for infantile reactions, puerile; 12-14 points for adolescent, immature reactions; 14-15 points for slight emotional immaturity; 16-18 points for situation towards the limit, tendency towards imbalance; 18-20 points average maturity level; 20-21 points appropriate maturity level; 22-24 points good maturation and over 25 points mean perfect emotional maturation.

It is obvious that EQ can be improved through self-education, following one's own behavior, one must be aware of what is done, and said, how one acts or reacts and especially how one assumes responsibilities. It is imperative to identify the existence of behavior patterns, where mistakes are repeated without learning from them and what can be improved. It usually only takes a moment for us to control

emotion or for it to control us. Thus, the targeted questionnaire comes to provide clarity in identifying the level of emotional maturity or infantilism, a fact that has an indispensable influence on personal and professional life, as well as on the management of one's own emotions, as well as understanding the lives of those with whom we relate.

Emotional maturity, therefore, represents that state that allows a person to accept the reality of people and things around him exactly as it is, without activating his need to change them. In addition to this realistic attitude towards life, mature people possess other character traits: the ability to know what they want and the ability to make things happen, self-control and thinking before acting, etc.

Thus, emotional maturity is always relative, it develops throughout life and is the form of maturity from which you can regress the fastest.

The experimental study was carried out on a sample of 40 teachers (women - 35, men - 5).

Based on *the Friedmann Emotional Maturity Scale*, the results regarding the level of emotional maturity of teaching staff are shown in **Fig. 1**:
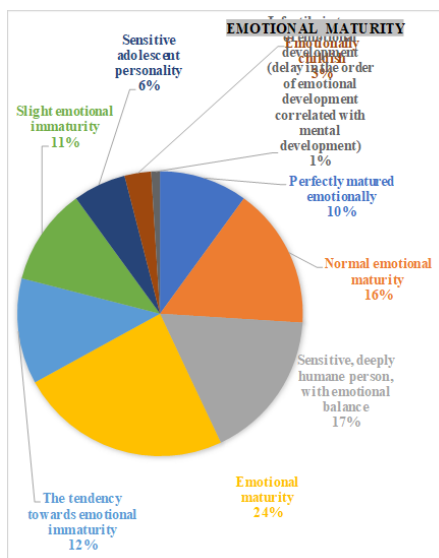
Fig. 1. The level of emotional maturation of teaching staff

Thus, we identified the following levels and results:
• Perfectly matured emotionally - 10%;
• Normal emotional maturity – 16%;
• Sensitive, deeply humane person, with emotional balance – 17%;

• Emotional maturity – 24%;
• The tendency towards emotional immaturity – 12%;
• Slight emotional immaturity – 11%;
• Sensitive adolescent personality – 6%;
• Emotionally childish -3%;
• Infantile in terms of emotional development (delay in the order of emotional development correlated with mental development) – 1%.

The average level of emotional maturity of teaching staff can be explained by the existence of a psychosocial impact on the maturity and emotional stability of teaching staff, caused by professional stress. Therefore, it is obvious that those teaching staff who have an average level of emotional maturity will have deficiencies in their relationship with their colleagues, as well as with the trainees, a fact that will have a negative impact on personal progress and success and professional.

In conclusion, we conclude that the ethical man, in the evolutionary ethical aspect, meets the qualities: free-thinker, a microcosm, an elevated type, with indispensable noble traits, the man of contradictions, he seeks, above all, himself, descends into the inner abysses of subjectivity, it is self-analyzed, it is a value, so it is "discovered" as a totality that tends towards freedom, but which respects the "rules of life". From this perspective, an ethical person is the teaching staff who represents a model of moral behavior and has the ability to maintain the class in an environment of agreeable activity, an affectionate, warm and reassuring environment. The ethical man in his becoming must develop his emotional intelligence.

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TEACHERS TRAINING AND PROFESSIONAL DEVELOPMENT WITHIN THE CRED PROJECT

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Abstract: *The "CRED- Relevant Curriculum, open education for all" project was developed to respond to some needs, including: to knowledge and use of the values of the new National Curriculum; to develop of relevant documents for educational policy (methodological guides for the various disciplines and Educational Resources Open (RED); to support the classroom application of the new school programs; to carry out thematic research to support the implementation process of the curriculum based on key competences, with a focus on students from disadvantaged categories; to train of 55,000 primary and secondary education teachers for a methodological approach centered on key skills and adapting learning activities to the specific needs of each student, including those at risk of dropping out, facilitating student-centered teaching-learning, the integrated approach (in the sense of making connections with real life), using alternative methods of formative assessment; to review the curriculum at the school's decision, capitalizing on the needs, resources and local cultural, social, economic context; to review the curriculum documents aimed at the "Second Chance" Program. The work "Teachers training and professional development within the CRED project" presents the results obtained in the framework of a mini-research carried out as a trainer in the program, Digital educational resources:*

creation, use, evaluation", OME accredited training program no. 3306/22.02.2022.

Keywords: *training courses; national curriculum; open educational resources.*

Title 1: Developing teachers' digital skills

The suspension of courses during the 2020-2021 and 2021-2022 school years in the education system in Romania and in many other countries, as well as the transition to the online learning formula, were determined by the declaration of the Covid 19 Pandemic and the measures imposed by the authorities in this context in order to prevent the spread of the virus.

This period was difficult for everyone, students, teachers, parents, the local community in general. From the perspective of the teachers, we can say that, on the one hand, it stimulated us, developed our motivation for research, information and creation of materials adapted to the activities specific to the online environment, and on the other hand, it forced us to develop our skills, skills and abilities to use new technologies.

"Selection of teaching aids suitable for the didactic activities carried out with a class of

students with certain age and individual peculiarities and in accordance with the educational objectives requires finding the answers to the following questions: "What type of learning and what mechanism of learning do students resort to under the conditions of using a certain means of education?" ", " What is the optimal ratio that should be established between concrete and abstract in the process of perceiving, understanding and assimilating the new", " What is the contribution of schematization and essentialization in the learning process?", " How do signs, symbols and images influence memory processes, fixation, storing and updating/mobilizing information? "Thanks to the exercise of the training function, each category of educational means can be considered a way of transmitting knowledge. Therefore, it is necessary that, in the choice of educational means, their efficiency should be taken into account in the transmission of new information, as well as in the formation of skills, intellectual skills, which will turn into useful tools in the assimilation of new information." (Ionescu, M., Radu., I., 2001)

Certainly, the main objectives of the discoveries in the field of technology were: easing work, considerably increasing the amount of information, exponentially expanding the spread area, eliminating some barriers, developing at the cultural, economic and social level.

Technological development, the use of the Internet, mobile communication services and related services have fostered easy access to information for most people. The main role of introducing computer science in school is not only to allow the access of young people to knowledge / information, but especially to ensure and make available to everyone the development of new learning tools but also to learn new techniques for reorganizing knowledge.

"Multimedia technologies, especially interactive ones, can play a special role in discovering new knowledge and values, in an agreeable form, in accordance with the students' interests. Digital transcoding involves additional, specialized operations - both from a didactic and IT perspective - and is ensured by teams of specialists that must include, at least, the pedagogue, the psychologist, the communication expert, the software developer and, possibly, the designer, because we live in a world where the forms, the appearance manage to enhance or compromise the contents. In other words, the digitization of learning involves a change in an important aspect of the curriculum - that which is available to the student through the textbook. However, it is known that a good curriculum, thought for the long term, is not done in a year or two, but requires several years of analysis, expertise, testing, evaluation, reformation. However, we are aware that, in today's times, reflection and reaction times need to be shortened." (Cucoș., C., 2013)

"With roots in neurocognitive sciences, the concept of "universal design for learning" - UDL, universal design for learning - is slowly gaining ground in education. Aware of the unique nature of each student, instead of imposing an educational path for all students in the class, we should propose diverse learning experiences that suit each one, maximizing the chances of progress. The challenge for teachers is to think of engaging activities that will draw students into the learning process - but it is obvious that, most of the time, one (same) activity does not satisfy the interests and needs of all students in a class, nor it is located in the zone of proximal development of each one. Therefore, we have two directions for optimizing didactic activities, which can be combined in practice by incorporating some suggestions from the theory of universal design for learning: differentiated design, by level groups, by interest groups, by potential groups (and mixed, when it is

possible); designing learning activities that are complex enough for each student to find their own path." (Istrate, O. 2020)

Through computer-assisted instruction, learners communicate interactively with the computer system using a system of programs intended for learning in various domains. The computer offers real possibilities for individualizing instruction. Alois Gherghuț considers the computer and related programs to be „a kind of mediator or pedagogue (...) whose role is to maintain, strengthen motivation and adapt the learning process to the student's school level." (Gherguț., A., 2005)

The DigCompEdu framework aims to capture and describe these digital skills specific to teachers, proposing 22 elementary skills organized in 6 domains.
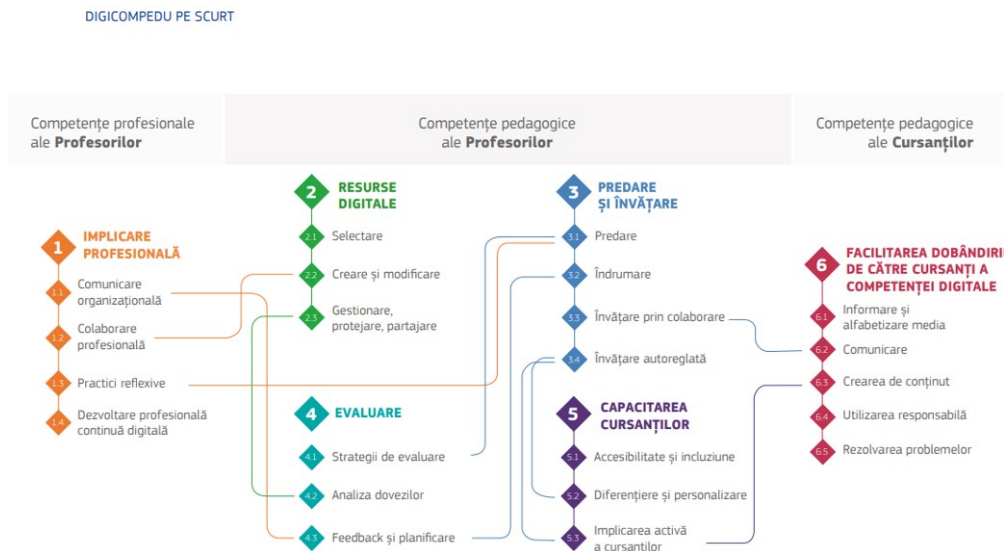
(Figura 1)
https://eos.ro/wp-content/uploads/2022/10/eos_cadrul_european_pentru_competenta_digitala_a_profesorilor_-digcompedu_fin_002.pdf

"Domain 1 addresses the professional environment in a broad sense, that is, the use of digital technologies by teachers in their professional interactions with colleagues, students, parents and other interested parties, for their own professional development and for the collective good of the organization. Domain 2 addresses the skills needed to

effectively and responsibly use, create and share digital resources for learning. Domain 3 is dedicated to managing and orchestrating the use of digital technologies in teaching and learning. Domain 4 refers to the use of digital strategies to improve assessment. Domain 5 focuses on the potential of digital technologies for learner-centered teaching and learning strategies. Domain 6 details the specific pedagogical skills needed to facilitate learners' acquisition of digital competence. For each competence, a name and a brief description are provided, which serve as a main point of reference.

The DigCompEdu framework synthesizes national and regional efforts to encompass the specific digital skills of educators. It aims to provide a general frame of reference for developers of digital skills models, i.e. Member States, governments

regional, relevant national and regional agencies, public or private educational and professional training organizations. It is aimed at educators at all levels of education, from pre-school to higher education and adult education, including general and vocational education and training, education for those with special needs and non-formal learning contexts. It invites and encourages its adaptation and modification to specific contexts and purposes. The framework is based on the work carried out by the Joint Research Center (JRC) of the European Commission, on behalf of the General Directorate for Education, Youth, Sport and Culture (DG EAC)" https://eos.ro/wp-content/uploads/2022 /10/eos_European_framework_for_professional_digital_competence_-digcompedu_fin_002.pdf .

Title 2: Teacher Training Program: Digital Educational Resources: Achievement, Use, Evaluation

On May 9, 2022, the CRED project launched a new accredited training program entitled: "Digital educational resources: creation, use, evaluation", a 50-hour online course of which 25 are synchronous and 25 are asynchronous. Teachers in pre-university primary and secondary education have the opportunity through this course to perfect their computer skills and abilities, to strengthen their teaching career by accumulating a number of 15 transferable professional credits and to create open educational resources - RED. The course is structured on three modules, namely:

Module 1 - Platforms for creating open educational resources

Module 2 - Pedagogical perspective of RED design and use

Module 3 - Responsible and safe use of RED

I had the pleasure and honor of participating in the CRED-RED project as a national trainer for a number of 5 groups of trainees from Bihor and Bistrita Năsăud counties between October 2022 and March 2023.

The purpose of the training program is to prepare teachers for the design, implementation and evaluation of educational situations that integrate applications and educational resources and digital format. Among the specific objectives of the "Digital educational resources: creation, use, evaluation" training program, I mention the following:

to use digital technologies dedicated to the development of open educational resources

to pedagogically design digital educational resources in order to carry out significant and effective didactic activities, appropriate to the field of the discipline, the group - class and the external conditions of learning

to responsibly use the digital environment for educational activities, in compliance with the legislation, rules and principles of safe use of educational platforms and digital educational resources.

To take the pulse of my learners on digital skills I created a short questionnaire that I sent to them from our first online meeting. It was not a mandatory questionnaire so that out of the total number of 170 trainees who participated in the training program, 92 colleagues answered the questions. Out of the total of 170 trainees initially enrolled in the program, 10 dropped out during the training.

Title 3: Research methodology

The purpose of the research:

Studying the impact of the participation of primary and secondary school teachers in the approved training program entitled: "Digital educational resources: creation, use, evaluation" on the development of digital skills

Research objective:

Determining the level of development of digital skills of primary and

secondary education teachers in Bihor and Bistrita Năsăud counties

Title 4: Research hypothesis:

We assume that teachers' participation in the continuous training program that capitalizes on the paradigms of modern education contributes significantly to the development of their digital skills.

Independent variable:

the continuous training program "Digital educational resources: creation, use, evaluation" that capitalizes on the paradigms of modern education

Dependent variable:

the level of development of the digital skills of teachers participating in the training program

Title 5: Subjects

In order to carry out the research, we asked for the initial questionnaire a number of 92 subjects, and for the final evaluation questionnaire 77 subjects teaching staff from secondary schools, high schools and national colleges from the counties of Bihor and Bistrita Năsăud (57 from Bihor and 35 from Bistrița Năsăud the moderating variables used: form of education, type of institution, gender and environment.

No	Form of education		Environment		Type of institution				Gender	
	Spe-cial	normal	urban	rural	secondary	school center for inclusive education	high school	national high school	female	male
1	20	72	77	15	20	20	28	20	79	13

Table no. 1 Distribution of the research subjects according to the moderating variables

Title 6: Research methodology

The method used to carry out this mini-research was the questionnaire survey.

In the first week of the training program, I asked the trainees to complete a questionnaire, a google docs form containing a number of 12 questions. The questionnaire was designed by me and was not imposed by the project within the training program. Being an optional activity, only 92 participants completed the initial questionnaire. At the last meeting with the participants of the training course, we applied another evaluation questionnaire to which a number of 77 participants answered.

Title 7: Analysis and interpretation of results

From the initial applied questionnaire, I selected a number of 7 questions for the analysis and interpretation of the answers. The results obtained are presented below.

To the first question related to the improvement of online work skills among teachers in the last two years according to the results obtained, 38% consider that they have improved these skills a lot, 32.6% extremely much, 16.3% enough, 6.5% a little, 5.4% extremely much, 2.2% very little and 1.1% answered that they were on parental leave. For the answer option extremely little, we did not get any answer.

Figure 1. Improving the skills of teachers to work online using digital technologies

1. Cât de mult considerați că v-ați perfecționat abilitățile de a lucra online în ultimii 2 ani?
92 de răspunsuri
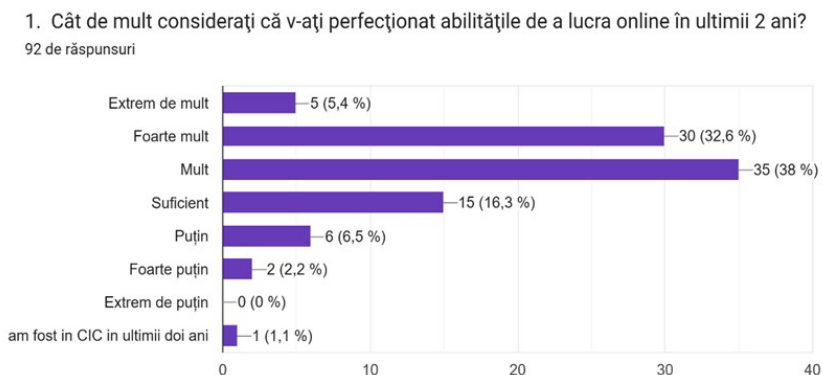
To the question regarding the assessment of the level of digital skills possessed, where 1 means "Very little/Not at all", and 5 -,,extremely

much", 44.6% selected the answer option 4, which means good, 43.5% marked with 3 i.e. sufficient, 8.7% scored 5 i.e. very good and 3.3% chose 2 as answer option i.e. a little. No answer was obtained for the variant marked with 1, i.e. very little/not at all regarding the level of digital skills possessed.

Figure 2. Assessment of the level of digital skills possessed by teaching staff

2. Apreciați pe o scară de la 1 la 5, unde 1 înseamnă "Foarte puțin/Deloc", iar 5 -"Foarte bine", cum apreciați nivelul competențelor digitale pe care le dețineți?
92 de răspunsuri
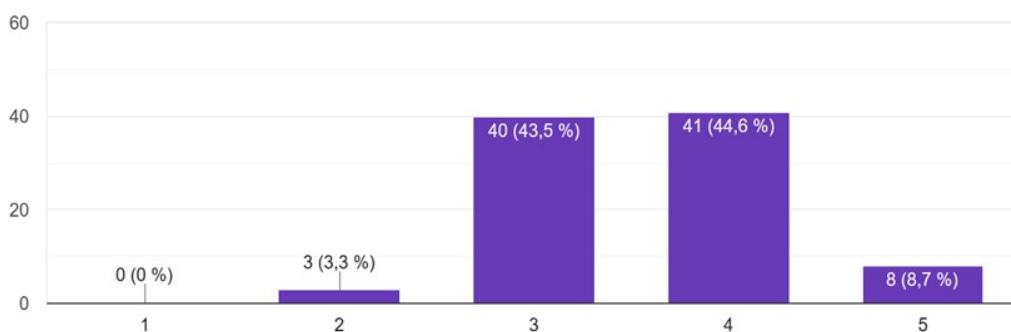
Through the third question, I tried to identify if the students have recently or in the last year participated in webinars, seminars, conferences or training courses that would support them in their online activity. Based on the answers received, we find that a percentage of 65.2% participated, 32.6% did not participate in such forms of training, 1.1% preferred not to answer and 1.1% participated in courses on this homework 2-3 years ago.

Figure 3. Learners' participation in different forms of training designed to support them in their online activity

Figure 4. Improving digital skills following training

3. Aţi participat recent sau în ultimul an la webinarii, seminarii, conferinţe sau cursuri de perfecţionare care să vă sprijine în activitatea online?

92 de răspunsuri

DA — 60 (65,2 %)
NU — 30 (32,6 %)
Prefer să nu răspund — 1 (1,1 %)
Acum 2-3 ani — 1 (1,1 %)
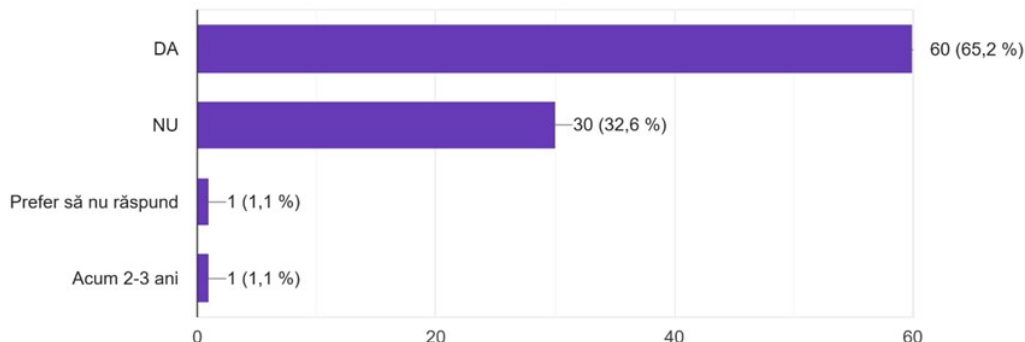
To the next question also related to the improvement of digital skills following the participation of teaching staff in various forms of training, a percentage of 73.9% of respondents appreciate that they have improved their digital skills following participation in training activities, 12% say no and - they improved these skills following the training, 7.6% preferred not to answer, 5.4% did not participate in such training and 1.1% stated that they did not teach during the pandemic.

4. În urma participării la aceste cursuri abilităţile d-voastră în online s-au perfecţionat?

92 de răspunsuri

DA — 68 (73,9 %)
NU — 11 (12 %)
Prefer să nu răspund — 7 (7,6 %)
Nu am participat — 4 (4,3 %)
nu am participat — 1 (1,1 %)
Nu am predat in perioada pandemiei. — 1 (1,1 %)
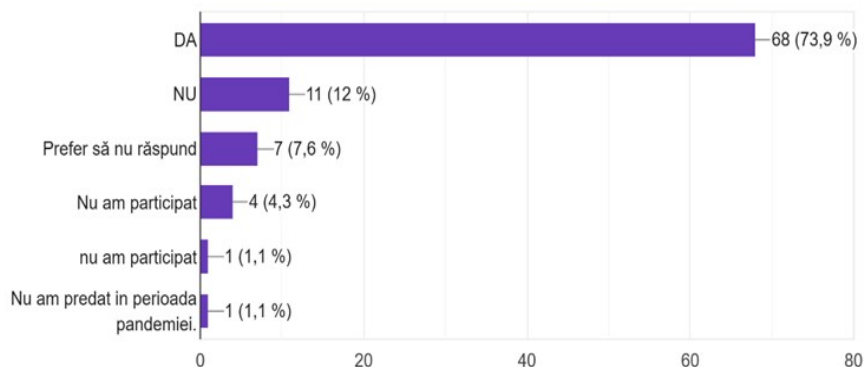
Through question number 5, we tried to identify whether the respondents have created open educational resources. Thus, a percentage of 25% did not create open educational resources, 77.2% of the participants created open educational resources while 1.1% created materials but did not publish them and 1.1% consider the material

created by them too simple
Figure 6. Realization of open educational resources

5. Aţi conceput resurse educaţionale deschise?
92 de răspunsuri
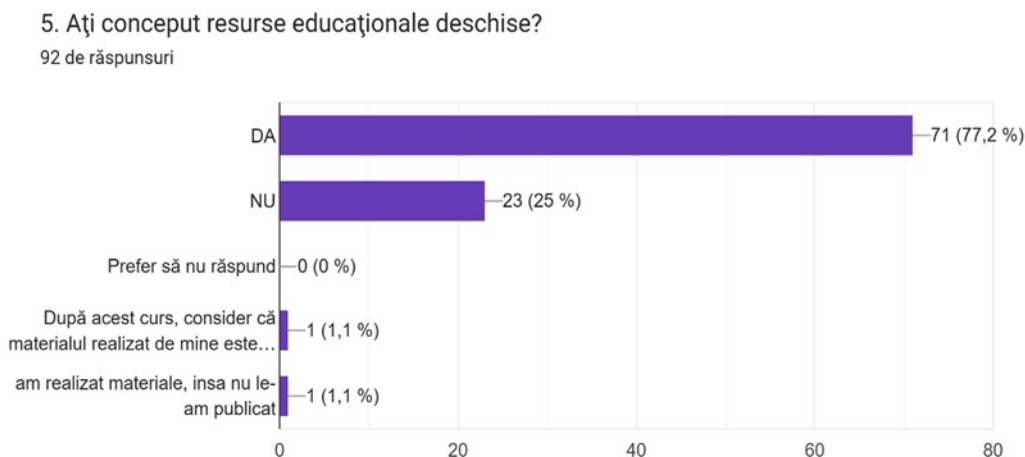
Through question number 6, I tried to identify the type of digital resources made by teachers. A percentage of 54.3% created digital text materials, 40.2% digital materials in graphic/image form, 16.3% digital video materials, 15.2% digital audio materials. For the answer variant an aggregate of different types, several percentages were obtained, namely: 12%, 9.8% and 5.4%. Animations were created by 8.7% of the respondents and word files by 1.1%. For the response option I have not achieved or have not yet achieved, several percentages were also obtained, namely: 3.3%, 2.2%, 1.1% and 1.1%
Figure 7. Type of open educational resources made by teachers.

6. Ce tip de resurse educaționale deschise ați realizat?
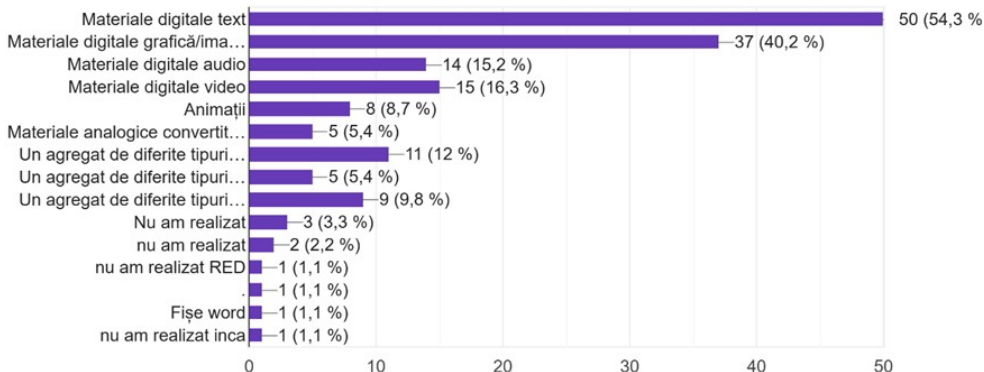
The next question concerns the applications/platforms used by teachers to create digital resources. Based on the answers, we can see that the most used application is world wall with a percentage of 47.8%, followed by google forms 40.2%, 30.4% jam board, 25% kahoot, 19.6% paint 3 D, learningapps 17 .4%, Canva 16.3%, video editors and others 13%, livresq 7.6%, prezi 6.5%, edpuzzle 2.2% and for a percentage of 1.1% we obtained the following answer options: pixlr, word, mentimeter, educaplay, freecam8, google classroom, photoshop, quiz, liveworksheet, microsoft office, as well as the answer options none and I didn't use them.

Figure 7. Applications/platforms used to develop open educational resources

7. Care sunt aplicațiile/platformele preferate de d-voastră pentru elaborarea resurselor educaționale deschise?

92 de răspunsuri
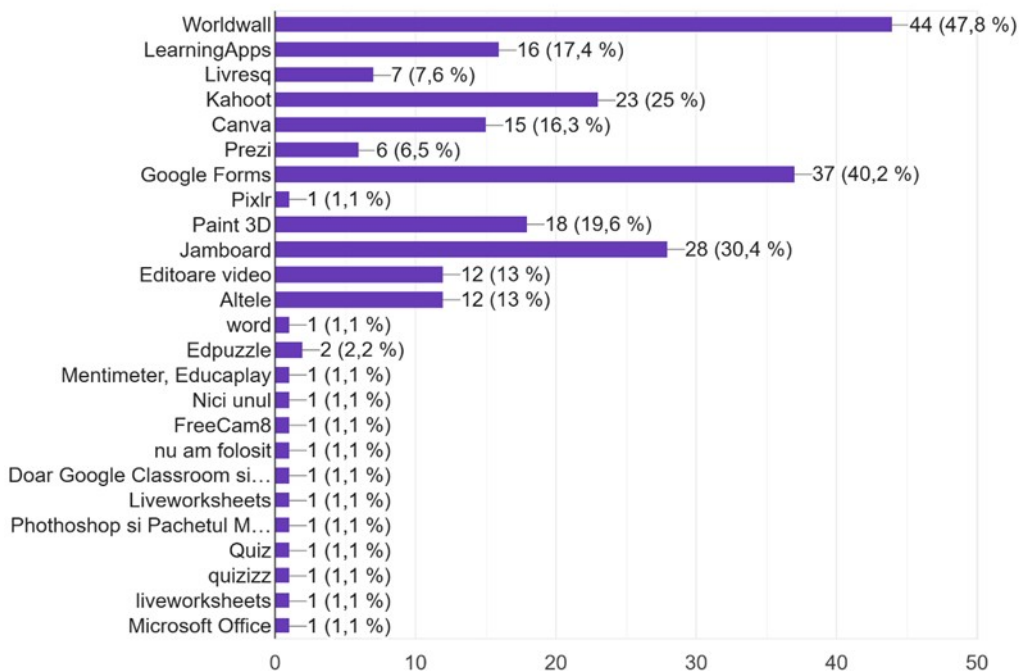
From the applied final evaluation questionnaire of the 10 questions, I selected a number of 5 questions for presentation and the results obtained are presented below.

The first question concerns the assessment of the trainees' experience in the training program. We observe that 72.7% consider that they have a very good experience, 23.4% a good experience and 3.9% consider that they have a satisfactory experience in the field.

Figure 8. Respondents' personal assessment of the training program experience

1.   În general, cum ați aprecia experiența dvs. în acest parcurs de formare?   (1 = nu foarte bună - 5= foarte bună)

77 de răspunsuri
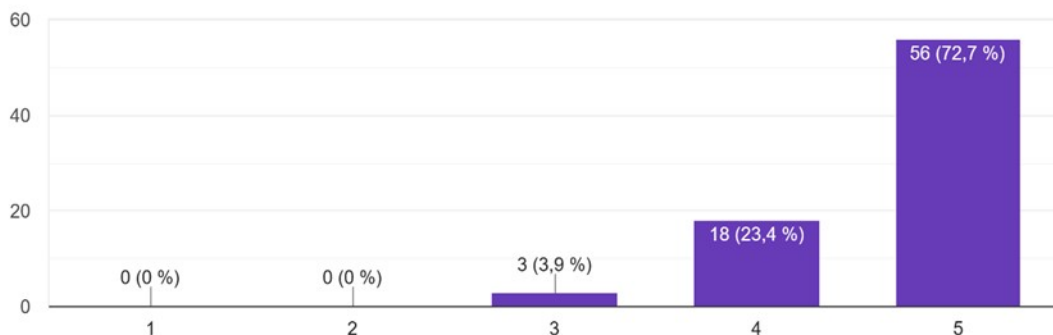
Figura 9. Aplicarea cunoștințelor și abilităților dobândite în cadrul cursului

3. Considerați că sunteți capabil(ă) să aplicați cunoștințele și abilitățile dobândite în cadrul acestui curs?

77 de răspunsuri
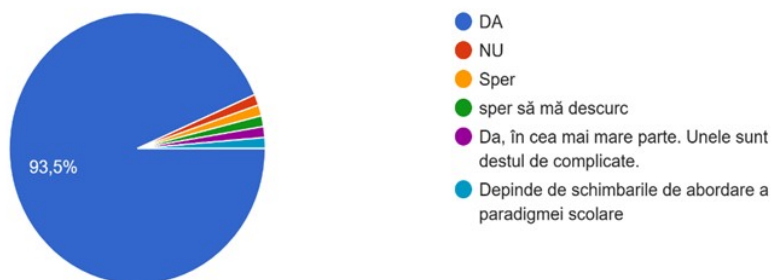
Question number 5 asked the respondents to decide on the usefulness of the course. 100% of all respondents found the course useful.
Figure 10. Usefulness of the course

5. Considerați că ceea ce ați învățat în acest curs v-a fost util?
77 de răspunsuri
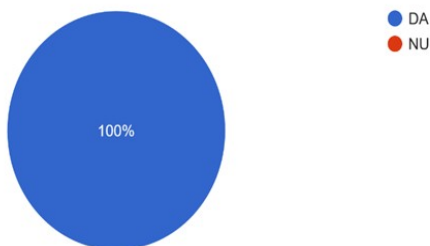
Ask how often they will apply the knowledge and skills acquired during the course in the classroom 49.4% of the participants say they will use them often, 27.3% will use them very often and 23.4% will use them normally.
Figure 11. Application of knowledge and skills acquired in the classroom training course

6. Cât de frecvent credeți că veți APLICA cunoștințele și abilitățile dobândite la acest curs în cadrul orelor dv?
77 de răspunsuri
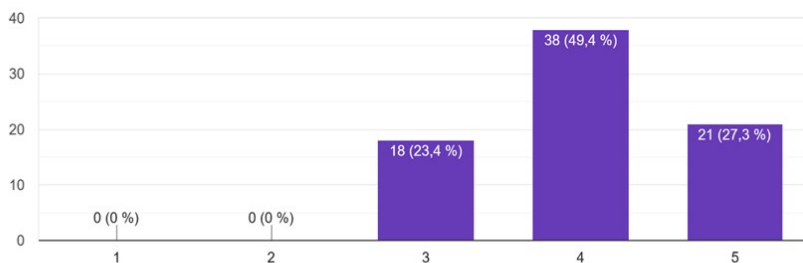
Learners were asked to say how they felt about the course and 74% of participants said they felt very good while 26% felt good.
Figure 12. Appreciation of how the participants felt at the training course

7. În general cum v-ați simțit la acest curs? (1 nu foarte bine, 5 foarte bine)
77 de răspunsuri
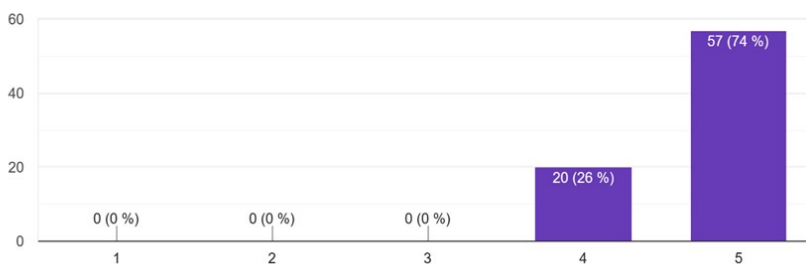
Title 7. Conclusions

After analyzing the data obtained on the basis of the applied questionnaires, we can conclude the following:

teachers participating in the training course entitled "Digital educational resources: creation, use, evaluation" a significant percentage of participants believe that they have perfected their skills in this field. If at the beginning of the training course almost half of the participants assessed the level of their own digital skills as sufficient

In the last period of time, more than half of the respondents have participated in training courses that address digital technologies, which reflects the desire to improve teaching staff in this field

A high percentage of teachers (79.3%) believe that they have improved their digital competences and skills as a result of participating in training courses aimed at digital technologies. Drawing a parallel with question no. 1 from the final evaluation questionnaire, we notice that 72.7% appreciate that they have a very good experience and 23.4% a good experience in the field of digital technologies

A fairly high percentage of teachers have made open educational resources following participation in training courses

The most representative digital materials created by the respondents are: digital materials text and digital materials in graphic/image form.

The most used application through which teachers have created digital educational resources is according to the answers obtained the world wall application.

According to the final evaluation questionnaire, 93.5% of the respondents consider themselves able to apply the knowledge acquired during the training course in the classroom.

All those who answered the questionnaire find the training program useful.

Almost half of respondents say they will Ask how often they say they will use what they learned in the training course in the classroom.

A considerable percentage of teachers (74%) stated that they felt very good at the training course "Digital educational resources: creation, use, evaluation".

I believe that the hypothesis of the research, namely the participation of teaching staff in the continuous training program that capitalizes on the paradigms of modern education, contributes significantly to the development of their digital skills. It is confirmed. The teachers are eager for continuous improvement and even if it was not an easy training course, the satisfaction is that they managed to complete it, but especially the fact that they acquired new skills and abilities in the realm of digital technology.

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SHADOW EDUCATION IN HONG KONG: THE EFFECTS OF BACKWASH ON HONG KONG SECONDARY STUDENTS

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Abstract: *Shadow education is a widely discussed topic in Asian countries since this is a popular way of learning for students. In Asian society, parents have invested a lot of money into shadow education, and they hope that their children can stay competitive or climb up the social ladder by getting good grades in public exams. Shadow education becomes a method that some people believe can help students to perform well in the exam, but is this true? In this paper, the focus is on the backwash effects of shadow education, and whether shadow education can help students to perform well in the exam. 12 secondary school students in this study expressed that shadow education can help them in their public exams and it has some positive effects on their overall exam grades. However, there are only a few studies focused on the effects of shadow education on students' exam performance, and it seems that this area has not been completely discussed in the field of shadow education. As a result, this study hopes to contribute to backwash in shadow education, and whether it can help students to improve their grades in the public exam.*

Keywords: *shadow education, secondary school education, backwash*

Introduction

"Backwash" refers to a student's performance which is often judged by assessments (Green, 2013). By using tests and exams, those assessments can show the influence of teaching and learning on students. As in shadow education, students have more opportunities to learn concepts that they are not familiar with at school. In Hong Kong shadow education, most of the learning centres adopt a more exam-oriented approach in their curriculum, since the exam results of the students were often emphasized (Yung, 2019b). Some of the parents believe exam results represent everything in Hong Kong society, so

they would encourage their students to take more extra classes after school (Cheng, 2021). In most of the tutoring centers in Hong Kong, exam skills are one of the major focuses, since they help to prepare students for the exams (Yung and Yuan, 2018). This is similar to other shadow education in Asian countries. For example, cram schools in Japan, which are known as *juku*, aim to promote test-taking techniques (Allen, 2016). However, the link between shadow education and exam results is ambiguous. There is not enough study to show backwash in shadow education.

Although focusing on training students' exam skills may help them to perform better in the exam, it may not help students in their overall learning. Scholars point out that this type of teaching and learning style may create both positive and negative effects on students (Bray, 2013). For example, students may tend to pay more attention to shadow education classes rather than mainstream school classes (Yung, 2019b), since students think shadow education can help them to perform better in the exam. Yung and Yuan (2018) define this as a "negative washback". However, there are examples of "positive washback" among Hong Kong students as well in shadow education. Students reported they know most of the questions in public exams since they had numerous practices at learning centres and schools (Bray and Kwo, 2014). As a result, students may have mixed feelings towards shadow education.

In this paper, the focus is on backwash in shadow education. It tries to explore whether shadow education can help students to perform better in their exams and whether students' performances in the exam were affected by shadow education. In other literature, only several research studies focused on backwash in shadow education. For instance, both positive and negative washback, those terms can only be found in Yung's and Bray's studies. Therefore, it is an area that should further develop and investigate.

Shadow Education in Hong Kong
Education in Hong Kong is very important since it can be a ticket for a person to find a decent job (Bray, 2013). Most Hong Kong parents understand the results of their children in the public examination will change their future. Education is one of the main keys that leads to success in Hong Kong, and many believe that those who performed well in the public examination will have a higher chance to apply to a world-class university or even accept by some big organizations (Bray, 2013). This kind of concept brings a lot of stress to students in Hong

Kong, and it has become one of the reasons why shadow education becomes more demanding throughout the years (Davies and Guppy, 2010). Bray's study about Hong Kong secondary students' time spent on shadow education mentioned that the reason students in Hong Kong attended extra classes is to fulfil the "no loser" principle (Bray, 2013). According to Bray (2013), Form Six (Grade 12) students in Hong Kong spend 4.76 hours per week in learning centres during the examination season. Furthermore, there were 71.8% of students in 1,624 participants expressed they had taken tutorial classes during the previous 12 months (Bray, 2013). The results implied that the demanding number of private tutoring is a result of the high competitiveness nature in Hong Kong society. The education system and reality try to create the winners and losers, and students try not to be the losers in this game (Bray, 2013). As a result, students and parents in Hong Kong would invest a lot in shadow education.

In Hong Kong, there are different types of shadow education, such as 1-on-1 based tutoring, group tutoring (8-10 people per group) and mass tutoring which contains more than 30 people in one classroom (Koh, 2016). Although there are different selections for students, shadow education is seen as only for training exam skills (Bray and Kwo, 2014; Yung, 2019a; Cheng, 2022). Yung (2019a) mentioned during his experience as a private tutor, he needed to focus on how to train students to perform well in the exam. In his autobiography, he admitted that the teaching and learning atmosphere may not help to develop students' other abilities, such as reading and listening skills in English (Yung, 2019a). Focusing on exam skills can help students to perform well in the exam, and this is very important in Hong Kong society. As Bray (2013) mentioned, Hong Kong students try to avoid becoming the "losers" in the education system. Recently, due to the outbreak of Covid-19, video-recorded classes have become popular in the private tutoring industry in Hong Kong (Yung, 2022). Students would be watching their tutor's teaching video at home, and this may affect students' learning (Yung, 2015; Yung and Bray, 2017). This is because teachers may not be able to immediately respond to student's questions, and students may not be able to learn effectively. Also, discipline is another concern in online classes (Eng, 2019). Students may not be working or concentrating during the lessons, and as a result, they may not gain anything after they took the lesson (Yung and Bray, 2017). As this further point out that the mode of shadow education can lead to different learning experience for students, and backwash from students may be different as well.

Backwash in Hong Kong shadow education

As backwash is the main idea in this research, it is important to understand the backwash situation in Hong Kong society. Scholars reported that there is a backwash on mainstream schools because of shadow education. According to Bray and Kobakhidze (2014), shadow education can affect students' achievement in regular schooling. They used the Third (or Trends in) International Mathematics and Science Study (TIMSS) and the Programme for International Student Assessment (PISA) data to analyses the effectiveness of shadow education on students' performance. However, both scholars concluded that it is difficult to see whether shadow education is the only factor that affects students' performance in the exam. Other scholars claimed that the "backwash" of shadow education creates more workloads for students and it may increase the financial pressure on families (Park, Buchmann, et al., 2016; Park, Lim, et al., 2015). This can produce educational inequalities (Bray and Kwo, 2014). According to Bray (2011), the reasons behind all these are that students do not understand the concepts, and they need to apply for more classes. As a result, these activities would increase families' financial pressure and students' workloads.

Another type of "backwash" from shadow education is related to the relationship between students and mainstream school teachers. Studies showed that shadow education made students listen to private tutors more than mainstream school teachers (Aurini & Davies, 2004; Paramita, 2015). Yung and Yuan (2018) further explained this phenomenon in Hong Kong. Because students think shadow education can help them to perform better in public exams, they tend to pay more attention to private tutorial classes (Yung and Yuan, 2018). As for mainstream schools, teachers focus more on developing students as a whole (Cheng, 2022). Students may not feel the knowledge that they learnt at mainstream school is useful, and that is why students may behave differently.

However, studies related to backwash in shadow education do not have much from scholars. Most of the studies show students may have different feelings towards teachers and private tutors, and some of the scholars point out that backwash may lead to social inequality in Hong Kong. There are still some areas that have not been touched, for example, whether secondary school students' exam performance will be affected by shadow education. According to Gupta (2022), the amount of time spent in the tutorial centre can show the backwash effect in shadow education. From a student's perceptive, the exercises

or materials that they did in tutorial class may or may not help them in an exam. This is something that can fill in the gap in shadow education. By achieving this goal, several questions were the focus of this paper.

1) What do students think about shadow education? Can those classes help them to do well in exams? (backwash in shadow education)
2) Is time spent a factor in shadow education? Will it affect backwash in shadow education?

Methodology
Backwash can be recognized as something students understood from the lessons, and in this study, the focus is on investigating whether shadow education can leave some impressions on students and help them to perform better in the exam. Furthermore, another layer of this research is to find out whether time spent on shadow education would affect backwash in shadow education. This study is qualitative, and students' opinions will be compared and contrasted through thematic analysis.

Participants and settings
The participants of this study were new secondary school graduates, and they have all participated in the 2021/22 Hong Kong Diploma of Secondary School Education Examination (HKDSE). 12 students participated in this study, and they shared their opinion about shadow education and their public exam experience. The participants had taken private tutoring courses to prepare for their HKDSE exam, but their time spent on their private tutoring courses was different. The reason for choosing new graduates is due to they may still remember their experience in participating in their DSE exam. They may provide a more accurate opinion on whether private tutoring can help them in their public exam. Snowball sampling was used to recruit participants for this study, and they had signed an approved consent form before taking the interview.

The interviews were conducted from September 2022 to December 2022, and interviewees were individually invited to a conference room at one of the private institutions in Hong Kong. A semi-structured interview was used since it allows interviewees to express other thoughts about this topic and come up with new ideas for this study (Dearnley, 2005). The interviews were conducted in Cantonese since it

is the native language of all the participants in this study. This also allows participants to express themselves freely and they were more willing to share their thoughts during the interviews. All the names were codified, so it can protect the interviewees' privacy. Recorder and field notes were used for the interview sessions to record data and relevant information. There was a notification from the researcher before the interview. If the interviewees refused to be recorded, field notes would be used to mark down the interviewee's opinions and other relevant behaviors.

Data analysis
In analyzing interviews, thematic analysis was used. Thematic analysis can identify patterns and map out the similarities and differences within the data set (Braun and Clarke, 2006). Furthermore, it can cover cultural, social and structural contexts in qualitative data (Kiger and Varpio, 2020), so it is a very comprehensive method to analyses interview data. The data were analyzed through several steps.

In the first step, data were transcribed and read through to identify themes. This allows researchers to understand briefly the data, and it is a very important step for the coming stage (Kiger and Varpio, 2020).

In the second step, the data was codified and organized for later analysis. It is important that all the codes in the study did not overlap (Kiger and Varpio, 2020). According to Braun and Clarke (2012), codes may have a different interpretation based on researchers, so researchers also find support from the text to support those codes.

Third step, potential themes inside the coded and collected data were identified. At this point, the themes should be closely related (Braun and Clarke, 2006).

The fourth step, revising the themes to see whether they were appropriate and I checked the coded data was put in the correct theme. The data inside each theme should be coherent and related (Braun and Clarke, 2006). At this point, themes or data can be modified, such as combined, added or divided (Kiger and Varpio, 2020), so that the data can be well-organized and placed in the correct theme.

In the fifth step, I defined the themes and named them. This is to check whether there are overlapping themes. This can also help me to understand the data and provide unique insights.

In the sixth step, I was able to write out the final analysis and description of the findings (Braun and Clarke, 2006). However, the report should just report the data (King, 2004). The report should provide a clear and logical sense, and researchers need to show the reasons for the selection of the themes (Braun and Clarke, 2006).

The use of thematic analysis can help researchers to summarize, point out key ideas and interpret the data sets (Kiger and Varpio, 2020).

Ethical considerations
Before the research procedures, participants were notified by email about the research run-down, and they could exit from the research if they felt uncomfortable. This could ensure that all the participants understand the particular research situation and that all their information and opinion were only for academic purposes (Punch and Oancea, 2014). Participant's personal information, such as names, and educational background were codified, so that the findings in this research will not leak their personal information. All the ethical procedures had been approved by the ethics committee at Bristol University.

As from previous research studies, names were something that researchers need to pay extra attention to (Yung and Yuan, 2018). All the names in this research were pseudonyms, as this can protect the participants' true identity. By doing this, it can also help respect the person's autonomy (Yip et al., 2016). Participants did not need to worry about revealing themselves to the general public during the interview.

A consent form was also provided to each participant. In other related research studies, informed consent was used before any research procedures. The consent form is to deal with human subjects (World Medical Association, 2013). The form is to confirm whether the participants are willing to participate in this research, and participants should understand all the risks that may have in this research. They had the right to refuse in participating any unwanted procedures, since the form is to protect their rights (Yip et al., 2016). In this study, informed consent was used, and all the participants understood the procedures and potential risks in this research.

During each interview, I gave a short briefing to each participant, so that the participant could clearly understand the coming procedures. Then, I asked for my participant's permission whether this interview

could be recorded. As recording can be sensitive and may affect the results of the research, this step aims to inform my participants beforehand.

Findings
Several themes have been identified from participants' responses, and they are listed below.

Quality of Shadow Education	Time spent in shadow education	Hong Kong education system
The usefulness of mainstream school lessons	Parents' expectation	Social inequality
Peer pressure		

Starting with the quality of shadow education, most of the participants indicated they have a choice of choosing either a life lesson or a video-recorded lesson in their learning centres. The quality of those lessons was quite similar which was not very good. The only difference was someone presented in person while the other one was mainly related to watching recorded lessons. Some participants indicated that at the end of the lesson, students may not have the chance to ask questions or even during the lesson, and they cannot raise any questions. Therefore, most of the participants indicated the lesson quality was not very good. It was more like a TED talk or a stand-up performance.

However, a small number of participants who did not attend those franchise learning centers indicated they had more time to ask questions and worked with their tutors during the lessons. When they had difficulties in their learning, their tutors were willing to help them. As a result, they were quite satisfied with their lesson experience.

As for the time spent in shadow education, all of the participants had taken at least 2 lessons per week. Some of the participants indicated they took 4 lessons per week, so they were fully occupied during weekdays. No matter 2 lessons or 4 lessons, participants indicated the reasons for taking those courses is due to peer pressure, parents' expectation and their self-expectation. However, they all agreed that the quality of shadow education is more important than how much time is spent on tutoring. Some of the participants indicated that "If I can get tips or hints for my public exam, then I don't have to spend a lot of time studying or find another learning centre to do a further study". As

a result, time spent on shadow education is not that important for students.

In terms of the Hong Kong education system, all of the participants agreed that the Hong Kong education system is result-oriented. Some indicated that if they failed the DSE exam, they would have been seen as 'losers. For those who passed DSE and continued to study at university would be recognized as 'winners', since the general public may think undergraduates will have a higher possibility to find a good job and earn a lot of money. A few of them indicated Hong Kong education focuses too much on memorizing and it cannot help to select elicits.

Regarding the usefulness of mainstream school lessons, all the participants mentioned mainstream school lessons are essential because they can teach them new knowledge. They also mentioned that they can learn different skills, such as communication skills and other practical skills through mainstream school lessons. In tutorial centers, they tended to do past papers and exercises, and they had little chance to learn new knowledge from these centers.

Some of the participants believe there is social inequality in Hong Kong's shadow education. One of the participants mentioned if you have more money, you could choose to attend live tutoring sessions and you can find more resources to help to improve your grades. This is a sign of unfairness in society. Furthermore, tutors also provide different services according to money. One of the participants provided an example, and that is related to tutors opening another session for those who are willing to pay extra. That class was for students to questions, but it is not open to everyone.

Peer pressure was mentioned in this study. Participants expressed that their decision in taking extra classes after school was also affected by their peers. Some participants mentioned when they saw their friends taking more classes, they can feel the pressure. As a result, they would go out and find more classes to take. Some of them even mentioned they often compared their exam results, and they do not want to lose the competition. That is why they tend to take more classes so that they can remain their competitiveness.

Finally, the last theme inside the data is parents' expectations. Participants mentioned parents often mention their expectations of them, such as "I want you to study in university" or "It would be great

if you could study at Hong Kong U[university]". These expectations made students not want to upset their parents, so they want to take more classes to improve their grades in the public exam. Some parents would even take the initiative to help their children to apply for more tutoring classes. They believe this can help them to get into the university or to be successful in the public exam.

Discussion-the impressions of shadow education
The findings from the interviews show that shadow education aims to train students for exams. Being the "winner" and getting good grades is equivalent in Hong Kong (Yung and Yuan, 2018), and in this study, students still have this impression of shadow education. Most of the activities in tutorial centers are working on past papers and tutors only focus on exam skills. Although Curriculum Development Council (2017) promoted "learning to learn" in education, it does not change the fact that exam result is important for students. Students in this study expressed that the tutorial center is the place for them to improve their grades, and tutors should only focus on teaching them how to perform well in the public exam. This can help to increase the chance for them to go to university and do well in public exams (Bray and Kwok, 2003; Yung and Bray, 2017). Therefore, the main function of shadow education in Hong Kong is still assisting students in taking their exams (Cheng, 2022). The impressions from students in this study match with previous literature in this field.

However, some participants mentioned shadow education in Hong Kong is more related to making money rather than helping students to improve their academic results. A lot of big brands or franchise learning centers in Hong Kong spent millions of dollars on advertisements and commercials because they want to promote private tutors like "Kings" or "Gods" in their subject area (Koh, 2016; Yung, 2019). By using exaggerated advertisements, learning centers were able to attract more students to join their schools. Those "Kings" or "Gods" use slang and sometimes vulgar language during their lessons, so students would be more interested. Students in this study mentioned they think those private tutors are like pop stars and it is difficult to reach them or talk to them during the lessons. Furthermore, the learning center would charge differently for the lesson price. For live lessons, it may cost HKD 1000 per lesson whereas a recorded lecture may only cost HKD 800. Even if you paid HKD 1000, you could not talk to your tutor. Moreover, since there are 50 to 100 people in a room, you may not have the chance to ask questions during the lesson. Students expressed those tutors may just give a presentation to inspire

students, and the real teaching and marking assignments were given to their teaching assistants. Therefore, students who paid all those money may not learn anything at all. Shadow education in Hong Kong is often mentioned by scholars as a company rather than an institution (Eng, 2019; Yung, 2019), since earning money may be the top priority for most of the learning centers in Hong Kong. This further proves the quality of Hong Kong shadow education is not standardized. Instead, learning centers are willing to put more resources into advertisements rather than maintaining teaching quality, so this can promote their brand and company image to students. Tutors, on the other hand, focus more on exam practices and tips to help students to pass their public exams. After the public exam result release day, tutorial centers will include those who got an "A" in the exam in their advertisements to promote their learning centers. As a result, students may have an impression that shadow education in Hong Kong is more focused on how to earn money rather than how to help students to learn better or effectively.

Discussion-backwash on shadow education
Backwash on students' studies can be found in this study. Backwash refers to whether students could use the learnt materials in their exams. In past studies, scholars focused backwash on students' and mainstream school teachers' relationships or students' and private tutors' relationships (Bray and Kwo, 2014; Yung and Yuan, 2018; Gupta, 2022). However, in this study, some of the participants expressed some of the exam questions in DSE were similar to their practice materials at their learning centers. Because of this, they were able to know the answers and felt confident about their test results. One of the main functions of private tutorial centers in Hong Kong is to improve students' exam skills. Some of the tutorial centers would provide a lot of mock exams for students to practice and students may benefit from them. For example, students would be very familiar with the exam format. This is a sense of backwash that can be found in the public exam of students. Some of the participants in this study mentioned some of the exam questions this year are similar to previous exam papers. As a result, because of taking classes in the learning center, students can do better in their public exams. This is a sign of backwash in shadow education.

As for the backwash on shadow education between private tutors and students' relationship, the participants expressed their relationship with their tutors is distant. This is because students feel those tutors in big brand learning centers are like "Kings" and "Gods", they feel those

people are "untouchable". This result contradicts Yung's studies in 2019, as those studies point out students feel closer to their tutors. The reason behind this is because of the teaching mode at a big brand learning center in Hong Kong. Most of the lessons in those centers were like lecture settings, and the interaction between teachers and students was not that much. Furthermore, those companies promote tutors like "Kings" and "Gods", so students may feel they are not able to reach their tutors. As in Yung's studies (2019a and 2019b), some of the participants may come from smaller learning centers, and they may have different experiences with their tutors. Those lesson settings were like 8 people at one table, and this may increase the chance for students to interact with their tutors. As a result, some of them may feel closer to their tutors. In this study, students expressed that when they saw tutors after the lessons, they were not willing to talk to them or ask them questions relating to the subject. They felt they were not close and they were afraid their tutors may feel disgusted. I think this has a big part in learning center promotion techniques since it makes students feel distant from their tutors at the learning center.

As for students' and mainstream school teachers' relationship, they felt they are closer to them. Interestingly, participants in this research expressed they have been studying and working with the teachers at school for 6 years, so they can easily approach most of the teachers at school. In this research, mainstream school teachers' roles are like academic role models for participants, and they provide knowledge and a sense of stability for students in secondary school. This contradicts the research in previous studies from Yung and Yuan in 2018. An example provided by a participant in research shows how close students and mainstream school teachers can be in real life. After the DSE exam, the whole class would invite their class teacher and other subjects' teachers to join them for lunch or dinner. As for private tutors, it is more like a business relationship. After the exam, participants may not want to contact them. This is something that contradicts previous research by other scholars.

Discussion-time spent in shadow education
In this study, participants expressed they spent at least two days a week in tutorial centers, and they hope this can help them with their public exam results. However, they raised several problems regarding the time spent in shadow education. Tiredness and money are the major concerns, and they feel that time spent in shadow education has nothing to do with the final results of public exams. First, participants indicated some students attended four days a week in shadow

education, and the exam results were more or less the same compared to those who spent two to three days in shadow education. Furthermore, participants expressed that due to the demanding mainstream school lessons, students may already use up most of their energy. Therefore, it is very difficult for them to stay focused in the tutorial class. More importantly, students may not absorb anything during extra classes.

Second, every class that they took needs to pay. Money is an issue for students since they did not have a lot to spend. For those mentioned in this research, they need to spend at least HKD 3000 every month on tutoring, and this has given them a lot of pressure. Therefore, they cannot spend a lot of time on shadow education because of money issues. In summing up the idea about the relationship between time spent in shadow education and student's academic result, participants expressed this is about the "quality of shadow education" not the "quantity of shadow education".

Conclusion and limitation
In this research, the focus was on newly graduated secondary school students, and the reason for choosing this group of participants is to recall their memories of the public exam. The focus of this research is to find out whether backwash exists in shadow education. By looking at the participants' data, they expressed backwash does exist in shadow education, since some of the participants mentioned the questions were similar to those, they had seen in tutorial schools. Furthermore, this research was able to confirm about backwash effect on students, tutors and teachers' relationships (Yung and Yuan, 2018). Although the results contradict previous research studies, they were able to explain different kinds of shadow education students may have their preference for teachers. This can help to suggest an area for further shadow education studies, which is related to the type of shadow education that may affect students' and tutors' relationships. Furthermore, in this research, social inequality can also be found, and this has been widely discussed by many other scholars (Bray and Kwok, 2003; Zwier et al., 2020; Gupta, 2022).

A limitation of this study is the number of participants. There were only 12 participants in this study, so the results may not be enough to cover all the opinions of other students in Hong Kong. However, the data in this research suggested backwash exists in shadow education. This can contribute to the area of this field. In the future, researchers

may consider expanding the sample size and investigating a boarder picture of this topic.

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ASSESSING HUMAN KINETICS AND HEALTH EDUCATION PRE-SERVICE TEACHERS' ATTITUDE TOWARDS USING SOCIAL MEDIA PLATFORM FOR INSTRUCTIONAL CONTENT DELIVERY IN SCHOOLS

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Abstract: *This study assessed the Human Kinetics and Health Education pre-service teachers' attitude towards using social media platform for instructional delivery in schools. The study was a descriptive study. The target population for this study were all the Human Kinetics and Health Education pre-service teachers at the Federal University Dutsin-ma, Katsina State. Simple random sampling technique was used to select one hundred (100) Human Kinetics and Health Education pre-service teachers among 485 in the school. Questionnaire was the instrument used in this study and two research questions and one research hypothesis were used to guide the conduct of the study. The reliability of the instrument after subjecting it to Cronbach alpha was 0.82.was established. The results of the findings revealed that, Human Kinetics and Health Education pre-service teachers have positive attitude towards using social media for learning in school, and there was no significant difference in the attitude of both male and female towards using social media for learning in school. Based on this, it was recommended that, the school authority should encourage the use of social media for learning curriculum content in school.*

Keywords: *socio media, pre-service teachers, platform, instructional content, delivery.*

Introduction

The use of social media in education refers to the use of online social media platforms in academic settings ranging from elementary and secondary school to post-secondary education. Social media is becoming more accessible and easier to use, meaning that the age of students who are able to understand and use social media are getting

younger and younger. Integrating social media into education has been a controversial topic during the 2010s in which people have continued to debate on whether or not these types of media have a place in the classroom. Many parents and educators have been fearful of the repercussions of having social media in schools and there are concerns that social media tools can be misused for cyberbullying or sharing inappropriate content (Salaway; Caruso and Mark, 2008).

Social media is websites and applications that enable users to create and share content or to participate in social networking. Social media is not just limited to posting pictures about holidays online. Social media has gained credibility over the years as a reliable source of information and platform where organizations can interact with audiences. With so many new technologies emerging every day, there have been many companies to arise solely and focused on athletic performance. The researchers further stated that tools like Opt - jump and Opt - Gait have come about due to the advantage technology now brings to the table for coaches. Awujoola-Olarinoye & Omiola (2020).

Social network tools afford students and institutions with multiple opportunities to improve learning methods. Through these networks, you can incorporate social media plugins that enable sharing and interaction. Students can benefit from online tutorials through YouTube, online courses delivered by universities abroad through Skype and a wide array of resources that are shared through social networks   (Rishika,   (2019) There is valuable knowledge to be gained through social media such as analytics and insights on various topics or issues for study purposes. As an educational institution, it is crucial to be active in many social platforms possible, this helps create better student training strategies and shapes student culture. The great thing about using social media in education is that one will be exposed to experts that are in different fields and subjects. When one starts following these experts one can learn more and gain useful content from them, this empowers scholars to produce great results. Social media has the ability to broaden your perspective on various subjects and gives illuminating, instant content that is new. You have the opportunity of engaging experts to get answers on topics that you may need help in learning colleges have the ability to connect with students through social media networks such as Facebook, Google Plus groups, and YouTube. These channels can be used to communicate campus news, make announcements and provide students with useful information. This builds engagement between the college and students which help tackle many student issues through the

group (Vie, (2008). Through social mediums such as YouTube, Facebook or Instagram live video the engagements between students and the institution can be sustained. Rishika, (2019) opined that the benefits of social media in the Education process doesn't have to stop at the teacher-student relationship. There are a lot of other benefits that can be extracted from the use of social networking at higher levels as well. For example, principals or administrators can find a new way to integrate social media like sharing school news via social networks, holding an online meeting with the parents or even starting fundraising for different projects. He further stated that social media can quickly become the only channel of communication since we're living fast-paced lives, parents are usually busy with work and cannot attend school meetings. But this doesn't mean they shouldn't be in touch with events or be able to check on their kids occasionally. Social media offers the audience and subject monitoring tools that are useful and it is one of the best platforms to extract data. You can find out how the majority people feel about a particular topic by creating Instagram/Facebook Polls, or conduct a survey using Google Forms or Survey monkey, or how experts perceive and advice on specific issues by using forums like quorate. This can help students compile and produce useful content for research. Whether students are working on an assignment, working on a project or trying to gain more insight on a subject, some of the best information and results can be extracted from social media. Slide share could help in making presentation of such data. (Skeels & Crudin, 2016) The use of social media in education provides students with the ability to get more useful information, to connect with learning groups and other educational systems that make education convenient. Social network tools afford students and institutions with multiple opportunities to improve learning methods, social network sites enable students to interact with one another, build a sense of community, develop content, as well as require students to be active in their own learning through participating, thinking, and contributing.

The acronyms for KHE are 'Human Kinetics and Health Education; Therefore, Human Kinetics and Health Education pre-service teachers are the student teachers in training who may be at any tertiary institution producing teachers like Colleges of Education, Universities and other related institutions. Attitude simply means manner, disposition, feeling, position with regard to a person or thing; tendency or orientation, especially of the mind: a negative attitude; group attitudes, position or posture of the body appropriate to or expressive of an action, emotion,

Attitude is the belief that one has towards people and surroundings. In case of education, students' positive attitude may influence their academic achievement. Attitude can be formed from a person's past and present; it is the readiness of the psyche to act or react in a certain way. In addition, attitude of KHE undergraduates towards the use of social media network would be encompassing. Some would like social media while others will dislike its usage depending on one's disposition. Attitudes often come in pairs, one conscious and the other unconscious (Obaid, Wasal, and Aamir, 2017).

Purpose of the study

The purpose of this study was to assess Human Kinetics and Health Education Pre-Service Teachers' Attitude towards using Social Media Platform for Instructional Content Delivery in Schools. Specifically, the study examined:

(i)   Pre-service teacher's attitude towards social media for learning in schools.
(ii)   Difference in the Human Kinetics and Health Education pre-service teacher's attitude towards social media for learning in schools based on gender.

Research Questions
The following research questions guide the study:

(i) What are the Human Kinetics and Health Education Pre-service teachers' attitude towards social media for learning in schools?
(ii) Is there any difference in the Human Kinetics and Health Education pre-service teacher's attitude towards social media for learning in schools based on gender?

Research Hypothesis
 The hypothesis was tested in this study:

Ho1: There is no significant difference in the Human Kinetics and Health Education pre-service teacher's attitude towards social media for learning in schools based on gender.

Methodology
This is a descriptive survey research. The target population for this study was all the student teachers in training at the Federal University Dutsin-Ma, Katsina State. Simple random sampling technique was

used to select one hundred male and female (50 males and 50 females) students for the study. The instrument used in this study was a researcher designed questionnaire which was validated by the two lecturers at the Federal University Dutsin-Ma, Katsina State. One of the lecturers was an expert in measurement and evaluation in the Department of Educational Foundations while the other one was from the Human Kinetics and Health Education field. Two research questions and hypothesis were raised to guide the conduct of this study. The reliability of the instrument was established using Cronbach Alpha and 0.82 was the value arrived at. The administration of the questionnaire was done by the researcher. After collating the collected data, it was analyzed using frequency counts, percentages, and mean and t-test inferential statistics.

Results
Research Question One

What are the Human Kinetics and Health Education Pre-service teachers' attitude towards social media for learning in schools?

Table 1: Analysis of frequency and percentages of the KHE Pre-service teachers' attitude towards social media for learning in schools

S/N	Items	SA	A	D	SD
		F %	F %	F %	F %
1	Educational information obtained on social media are never misleading therefore I like using it for learning.	50 50	35 35	10 10	05 05
2	Interaction with my teachers and colleagues on social media is educative and I enjoy it	60 60	30 30	06 06	04 04
3	I get useful educational information on diverse areas on social media that encourages me to be	25 25	65 65	03 03	07 07

	serious with my study				
4	It is important to keep up with the latest information about my discipline on social media.	15 15	65 65	15 15	05 05
5	I regularly use social media because I find information gathered through them useful for my study	35 35	56 56	04 04	05 05
6	I feel interaction on social media enhances my learning processes.	44 44	39 39	07 07	10 10
7	I believe that social media gives me the opportunity to acquire new knowledge.	13 13	67 67	12 12	08 08
8	I believe that social media enhances my learning experience.	27 27	63 63	07 07	03 03

Table 1 above shows that the responses of the respondents concerning the attitude of Human Kinetics and Health Education Pre-service teachers towards the use of social media for learning in school is positive. This implies that pre-service teachers show positive attitude in using social media for learning various concepts in school. As the respondents confirmed from the table above that educational information obtained on social media are never misleading therefore the respondents like it for learning.

Hypothesis One

Ho1: There is no significant difference in the Human Kinetics and Health Education pre-service teacher's attitude towards social media for learning in schools based on gender.

Table 2: Analysis of t-test of the difference in the Human Kinetics and Health Education Pre-service teacher's attitude towards social media for learning in schools based on gender

Item	N.	$\bar{X}$	Std	t	Df	Sig (2-tailed)
Male	50	55.38	7.855			
				0.603	98	5.48
Female	50	54.34	9.331			

Key:
There is no significant difference in the mean scores of pre-service teachers' attitude to the use of social media for learning in school, this is because t (98) = 0.603, p > 0.5 significant level. The null hypothesis is therefore accepted and this implies that, there is no significant difference in the attitude of male and female Human Kinetics and Health Education students towards using social media for learning in school. Looking at this result it shows a clear indication that attitude to social media usage for learning is not gender biased which means both Male and female Human Kinetics and Health Education Pre-Service teachers have positive attitudes towards the use of social media platform for their learning.

Discussion
The finding of the study revealed that the attitude of Human Kinetics and Health Education students towards the use of social media for learning instructional content is positive. This implies that the Human Kinetics and Health Education pre-service teachers are willing to use social media for learning curriculum content in school. This finding supported the work of Dalton (2016) which reported that teachers have positive attitudes towards online and recommended that training in e-learning needs to be provided to teachers to widen their understanding of e-learning.

The finding of this study also showed that, there was no significant difference between the attitude of male and female Human Kinetics and Health Education pre-service teachers towards using social media

for curriculum content in school. This finding is in line with the findings of Obielodan (2019), who reported no differences between male and female teachers' perception of the use of digital technology (blended learning) for instruction.

Conclusion

Based on the findings of the study, it is concluded that pre-service teachers have positive attitude towards using social media for curriculum content in the Federal University Dutsin-Ma in Katsina State and there is no significant difference in the opinion and attitude of male and female social media usage for learning in school.

Recommendations

Based on the findings, the following are recommended:

1. The Federal University of Dutsin-Ma school management and authority should encourage the use of social media for learning curriculum content.
2. The Human Kinetics and Health Education pre-service teachers should be trained in the use of social media in teaching and learning in school so as to impact the same knowledge for the content delivery in school.
3. The school management and authority should provide access to internet connection in the school to aid social media usage.

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STUDENT LEARNING

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Abstract: *Academic learning illustrates the complex process by which students develop or acquire, as appropriate, knowledge, abilities, competences, skills in order to succeed in an academic environment and, of course, to develop and continuously improve themselves. In this research, several elements related to academic learning have been investigated. The method of investigating the matter of academic learning is the inquiry conducted using the questionnaire as a tool. The sample of subjects consists of one hundred and fifty students from the University "1 Decembrie 1918" of Alba Iulia, year I, II and III of study, from the field of Pedagogy of Primary and Pre-School Education. Among the indicators presented in the questionnaire we can mention a few: the time allocated for study, organizing the learning material, the efficiency of learning, passing exams, the learning style, the success in learning, the failure in learning, etc. The conclusions are drawn based on statistical analysis and confirm the presence of unique elements about academic learning.*

Keywords: *learning, academic learning, the motivation of student learning.*

Introduction

Learning is part of the story of each of us, a story that reflects the personal evolution, meanings and meanings that we build and that then define us.

In the book Praxiological Dictionary of Pedagogy, learning is considered to be "either a process of acquiring new experiences, new skills, abilities, competences and new forms of behavior, or the modification, restructuring or change of existing ones, in order to better adapt the individual to new situations and to the increased dynamics of life".(Bocoș, 2016, p.140)

Learning can also be seen as a long-term change that can enter the behavioral or cognitive sphere, reffering here to the experience.

Interaction, experiences and behavior changes are conditions which define the learning process of each of us.(Voiculescu, 2010)

The procedural aspect of learning includes moments that make up a learning sequence. These moments are: the observation of the material, the comprehension of the material, the assimilation of knowledge, memorization, knowledge application, updating and knowledge transfer. (Jinga,1979)

There are various hypostases through which we can describe learning, and some of them include: the changing in behavior as a result of experience, the possibility of adapting the behavior to new situations or preventing a certain behavior, the self-organization of behavior, embracing a certain behavior and, last but not least, the connection between biological and social heritage. (Golu,1983)

For students, learning is an action of elaborating cognitive operations and strategies, an intellectual and physical effort carried out in an organized manner to train certain skills and to acquire certain contents that are necessary for their continuous development. (Cristea,1998)

Academic learning is an advanced form of learning activity that takes place after high school learning, and includes new content that is appropriate to the students' age. At the same time, academic learning involves a deeper and more complex approach to study topics and a greater focus on critical thinking and analysis. It also involves the development of research, collaboration and communication skills.(Enăchescu, 2011)

„Academic learning takes place in a higher education called precisely like that in order to mark the transition to another level of approach towards learning content, associated with a greater degree of difficulty and a more precise orientation towards professional purposes. Compared to the previous high school stage, new learning methods are also established, work strategies appropriate to the institutional profile, study techniques adapted to the young age. The act of learning is closer to studying assuming that in previous years the principle of learning how to learn had been acquired, a necessary premise in the academic study, where there is a tendency towards independence and self-training."(Enăchescu, 2011, p.86)

This has a wide range of high quality characteristics such as intrinsic motivation, autonomy, self-control and self-regulation of students' activity. (Stăncescu, 2017)

In academic learning, students' motivation is not easy to achieve, and if we think about acquiring and supporting some students' limits of involvement, this is one of the biggest challenges of teaching. (Arends, Kilcher, 2010)

The development in students of certain skills to control their own study behavior involves knowledge, capabilities, skills and abilities regarding the processes and mechanisms that have an important role in the management of personal study.

Problem Statement
Learning is part of the story of each of us, a story that reflects the personal evolution, meanings and purposes that we build and that later define us.

The study that we have carried out presents a series of information gathered from first, second and third year students about academic learning. Among the indicators described in the questionnaire we mention a few: the time allocated for study, the organization of learning material, learning efficiency, passing the exams, learning style, success in learning, failure in learning, etc. The conclusions are developed based on statistical analysis and confirm the presence of unique elements about academic learning.

Research Questions
The questions of this research were focused on the following topics: time spent studying, organization of learning material, learning efficiency, passing the exams, learning style, success in learning, failure in learning, etc. The conclusions are developed based on statistical analysis and confirm the presence of unique elements about learning in students.

Purpose of the Study
The purpose of the research leads to the investigation of elements related to the aspect of student learning.

Research Methods
Throughout this research, the method of investigating the issue of learning in students was the method of the survey, performed using the questionnaire as a tool.

Findings

The sample of subjects consists of one hundred and fifty students from the „ December 1, 1918 ” University in Alba Iulia, year I, II and III of study, from the field of Pedagogy of Primary and Preschool Education.

The first question of the questionnaire reffers to the time that students allocate per day for individual study during the week. As we can see, 51.1% of students allocate to individual study during the week between one and two hours; 18.4% between three and four hours; 17.5% allocate one hour a day to the individual study during the week; 10% between 4 and 5 hours, and 3% more than 6 hours a day for the individual study during the week.

1.How many hours do you spend per day on individual study during the week?
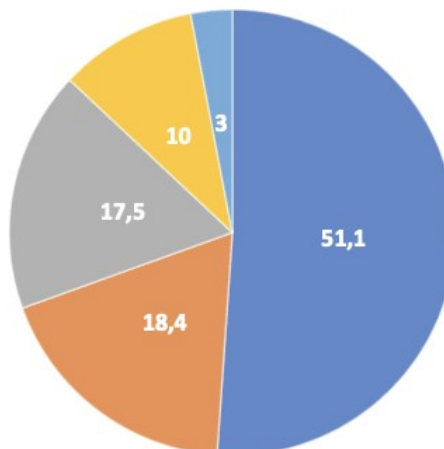
Figure 1. Time allocated per day for individual study during the week.

The second question discusses the aspect through which students organize their study material before learning. The results of this question were as follows: 31.8% of students specified that they underline the information that seems the most important tp them; 24.2% extract their main ideas; 21.5% organizes the information by making different diagrams; 18.4% rewrite the materials they will then learn; 3% learn the information as it was offered in the course / seminar; 1.1% does not organize their information in any way.

2.How exactly do you organize your study material before learning?
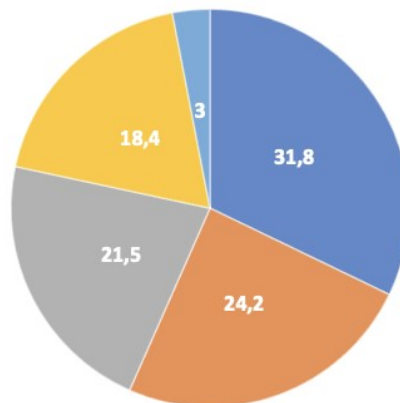
Figure 2. The way of organizing the study material before learning.

The third question opens up a few directions as to when learning becomes effective for the student. To this question the results were as follows: for 84.8% of students learning is effective if they learn on their own; 13.5% learning is effective if they study with colleagues; 1.7% learning is effective if they study with friends.

3.Learning is effective for you when...
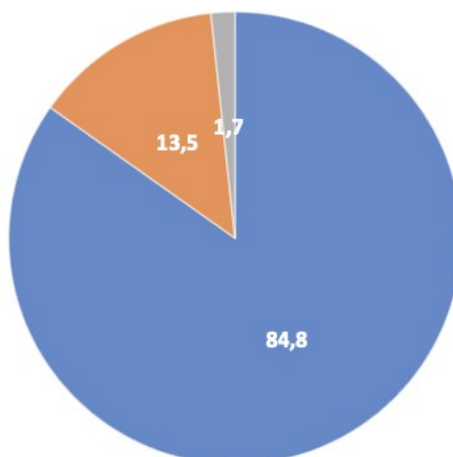
Figure 3. The efficiency of learning.

On the fourth question the students were asked if they had exams that they did not pass. As we can see, 43.5% say that they passed all the

exams; 21.1% say that they were never in a position not to pass the exams; 15.2% statee that they have rarely been in situations where they have not pass their exams; 12.6% say that sometimes they were in situations where they did not pass their exams; for 6.6 % there was not the case, and for 1% of them it often happened not to pass the exams.

4.Did you have exams that you did not pass?
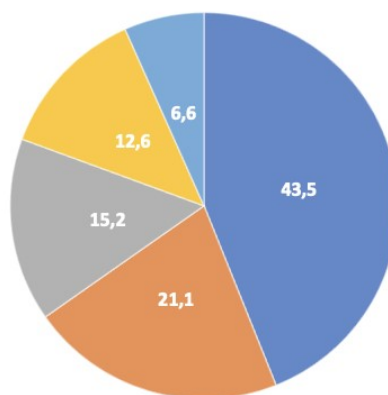
Figure 4. Exams that were not passed.

On the fifth question, the students were asked about how they proceed if they did not pass the exams. Here the percentages were as follows: 64.1% analyze the learning method they used and want a reorganization and an upgrade of the style; 20.6% of students analyze their weaknesses; 7.6% leave things as they are and are not interested in anything at all; 7% of students analyze the way of learning they have used, and 0.7 of them analyze their strengths.

5.If the exam was not passed, how do you proceed?
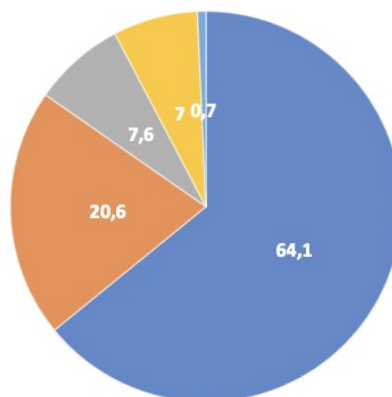
Figure 5. Measures that students take in case of not passing the exams.

The sixth question reffers to the learning style of students, whether they carefully analyze their learning style. The results of this question were as follows: 36.8% sometimes analyze their learning style in some situations; 34.1% often analyze their learning style; 21.1% always analyze their learning style; 6% rarely analyze their learning style, and 2% of students never analyze their learning style.

6.Do you carefully analyze your learning style?
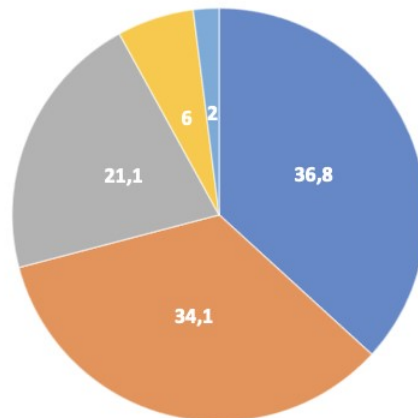
Figure 6. Learning style.

On the seventh question, students were asked about their feelings when they had to learn a larger volume of information in a short time. The results of this question were as follows: 40% of students feel a tension; 33.6% mobilize and complete the task; 20% of students are stressed and 6.4 % among students feel relaxed.

7.What feelings do you have when you need to learn a larger volume of information in a short time?
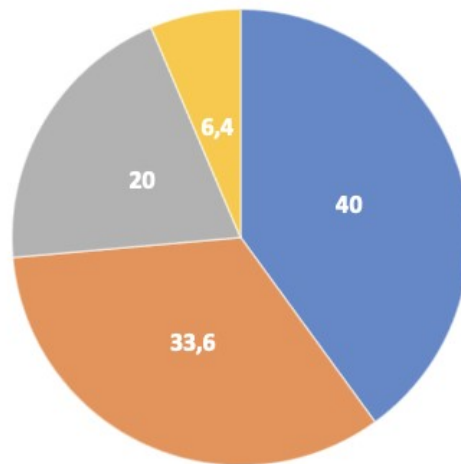
Figure 7. Acquiring a larger volume of information in a short time.

The eighth question reffers the moods that students have when an achievement appears, a success in learning. The results of this question were as follows: 64.1% of students are happy, 35.4% hope that they will continue to be just as good, and 0.5% of students feel a certain indifference.

8.How do you feel when you are successful in learning?
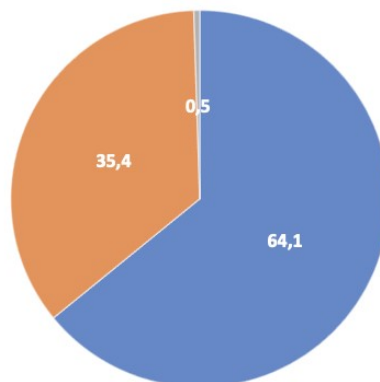
Figure 8. Succes in learning.

On the ninth question, students were asked how they feel when they have a failure in learning. The results to this question were as follows:

48.9% of students feel a state of ambition, 48% feel sad, and 3.1% of students have a sense of indifference.

9.How do you feel when you have a learning failure?
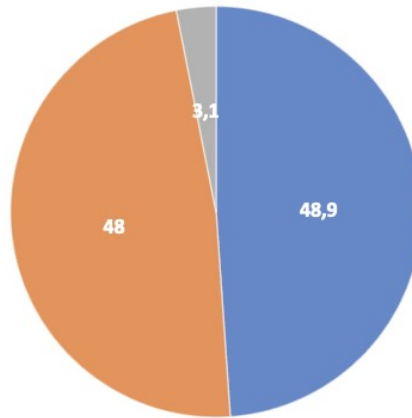
Figure 9. Failure in learning.

The last question concerns the students' possibility to use what they have learned in college in professional life. The results of this question were as follows: 83.9% of students believe that they will use the notions learned in professional life; 14.8% among students they believe that they will not use the notions learned in professional life, and 1.3% of students do not know if they will use what they learned in college in professional life.

10.Specify if you are sure that you can use in your professional life what you learn in college.
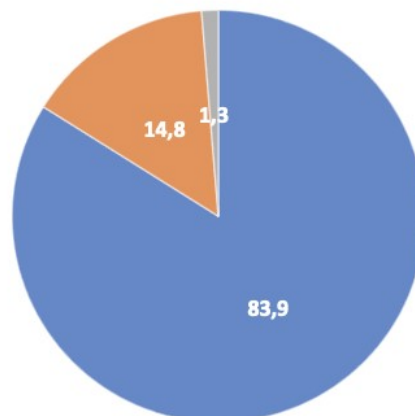
Figure 10. Applying the information acquired during faculty to the professional life.

Conclusion

The conclusions are drawn up based on the statistical analysis and confirm the presence of new elements.

We were able to observe in the research we have carried out interesting aspects regarding the learning of students during the academic year.

From the information gathered from students through this questionnaire we could observe that they are interested in learning new things on a daily basis and in further researching the information presented to them, which, we could say, leads to an autonomy in learning. Along with this aspect, it seems that they also have a certain way of organizing the material that they then study.

Students believe that learning is effective for them if they perform this activity being alone when they learn.

Failure to pass exams makes students change their learning style and analyze their learning style in order to improve it in the future.

Two key points for students were also reached in this questionnaire, mainly school success and failure. Whenever a success in learning occurs, they are certainly happy and excited, and if failure in learning makes its presence, then they feel a state of ambition that will help them tell them in the future to achieve success in learning.

Furthermore, from the answers provided by the students to this questionnaire we could gather that they believe that all the notions, knowledge, competences, the skills they have stored or developed during this study period will help them in the future in their professional life.

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EXPLORING THE RELATIONSHIP BETWEEN THE GENERATION Z CONSUMERS' DESIRE TO LEARN AND OPENNESS TO TECHNOLOGY

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Abstract: *This study explores the relationship between the desire to learn and openness to technology among Generation Z consumers. As a digitally native generation, Generation Z has grown up in an era of rapid technological advancement. This has influenced their attitudes and behaviors towards learning and technology adoption. The aim of this research is to investigate whether there is a correlation between the desire to learn and openness to technology among Generation Z consumers. The research employed a quantitative survey method to collect data from a diverse sample of Generation Z*

consumers. The survey included measures of desire to learn, openness to technology, and demographic information. Data analysis was conducted using Pearson correlation and regression analysis to explore potential associations between motivation and openness to technology. The results show that Engagement and Desire to Learn are significant predictors for perceived usefulness. Related to the predictors of attitude and intentions to use, results showed that Engagement (R² = 0.19, p < 0.05) and Eagerness to Learn (R² = -0.20, p < 0.05) were predictors for attitude toward mobile apps. On the other side, engagement (R² = 0.17, p < 0.01), fearlessness (R² = -0.21, p < 0.01), and Eagerness to Learn (R² = -0.14, p < 0.05) were significant predictors for the intention to use mobile apps in the future. These findings have important implications for marketers, educators, and policymakers. Understanding the relationship between the desire to learn and openness to technology can help organizations develop targeted strategies to engage Generation Z consumers effectively.

Keywords: *generation Z; consumers' desire to learn; openness to technology.*

Introduction

The progress of today's societies requires a level of transformation in everything through which individuals form and develop not only knowledge, but also new skills and competences to face and respond to new demands and situations (Selingo, 2018). In this dynamic of technology, the field of sales has become increasingly diversified to meet the demands and needs of the Generation Z consumer. This diversity is massively influenced by this technology dependence of consumers (Fisher, 2018). Generation Z consumers are true digital natives, characterized by a hyper-cognitiveness present in all areas of life. They demand the need for change even in terms of new ways to shop. The development of technology that is available to many organizations has led them to build innovative programs, applications and new ideas to speed up and increase the

marketing process and the sale of a product. One of the most important actions is reflected in the investment in digital resources to provide new ways of action. Purchase experience technology, which consumers widely exploit to increase or accelerate the value process, but technology can promote or develop new skills. Generation Z consumers are hyper-connected individuals with digital and all Internet resources, have high expectations regarding learning progress, show a high level of independence and are actively involved in solving new situations and problems (Hernandez-de-Menendez et al., 2020).

The consumer profile can be seen as a pattern of behavior that a person adopts for searching, buying, using, evaluating and abandoning the products/services that are expected to satisfy their needs. The analysis of the consumer profile in the current context is particularly important because it encompasses the requirements and preferences of customers and contributes to the development of the marketing and advertising process. Through the purchase decision, consumers influence sales and even the profile of a company, and therefore any marketing and communication activity must be analyzed and carried out in relation to their needs. Customer behavior analysis refers to how certain resources of time, money, effort, emotional involvement are consumed or allocated to the purchase of various products or services.

Among the dimensions that define purchase behavior, the most important are: purchase reasons, buyer references, purchase intentions, purchase habits, consumption habits; buyer attitudes, brand image (Escriba-Perez et al., 2017). Analyzing the positive impact on consumers requires an understanding of the nature of consumer knowledge of the effects that new technologies may have on consumer information and knowledge of how consumers may respond to certain. The level of customer satisfaction is mainly determined by the optimal response to their requests and the speed of solving problems that arise in the process of purchasing goods. At the same time, the degree of employee satisfaction increases with the ease of performing work tasks and the existence of effective employee-client communication (Prothero et al., 2011).

The analysis of the purchase act of the concepts of buyer, consumer, purchase behavior, consumption behavior and the factors that influence the purchase decision, as well as the relationship between the consumer and the brand are important

elements for the positive impact on the physical and social environment.

Openess to technology

The digital society we live in, also called the information society, is driven by information and communication technologies that allow people to produce and share data without limits. This digital society also has a visible impact on consumer psychology, as it has given rise to a consumer profile that shows increased openness/availability towards the use of digital in the purchase of products. According to Warren, digital natives are guided by eight standards derived from their constant contact with technology: freedom, personalization, control, integrity, collaboration, entertainment, speed and innovation (Warren, 2007).

Today's environment is now dominated by all kinds of digital devices such as computers, smartphones, cameras, iPads and so on. Depending on the predilection for media use, individuals can thus be divided into three categories: traditional (low use), intermediate (medium use) and multimedia (high use) (Valkenburg &Taylor, 2018). According to Warren (2007), new technologies have reshaped the way adults relate to shopping or the way they find information or even plan personal activities. Although it is well known that the excessive use of technology can have negative effects on its users, such as low concentration, lack of attention, anxiety or even obesity and sleep disorders (Naidoo & Raju, 2012), it is recognized that to the same extent, moderate and intentional use of technology can provide multiple benefits to its users, including savings in time spent shopping, or easy access to large amounts of information and ease of purchase.

According to studies by Browne, Durrett and Wetherbe (2014), the shopping experience has changed a lot over the years, and the number of consumers shopping online has increased greatly, showing great openness to using technology. People exchange information through smart phones, laptops and tablets and on the other hand, the sales field uses various innovative applications to improve the consumer buying experience (Priporas et al., 2017).

Desire to learn

Generation Z are individuals born between 1995 and 2010 and are often referred to as digital natives due to their early exposure to

the internet and social media. In essence, Generation Z is characterized as a hypercognitive generation, proficient in connecting various sources of information and seamlessly integrating both offline and virtual experiences (Francis & Hoefel, 2018). This generation views consumption as a medium for self-expression, valuing accessibility to products and services rather than mere possession. Nevertheless, when it comes to products and technology, they are willing to invest in premium services and products that emphasize their uniqueness.

Research has indicated that Generation Z shows a strong inclination towards technology, particularly when it comes to utilizing mobile phones for shopping (Priporas et al., 2017). The predominant mode of purchasing products for this generation is through online channels (Bilgihan, 2016; Priporas et al., 2017), showing an interest in personalized applications that serve to their specific needs (Bilgihan, 2016). Virtual communication is their preferred method of interaction (Schroth, 2019), leading to the emergence of online communities where they connect based on shared causes and objectives (Mahapatra et al., 2022).

In relation to education, Szymkowiak et al. (2021) provide an insight into the role that technology and the internet play in this regard for Generation Z. They are more likely to use the internet to learn new things unlike previous generations. In this sense, technology facilitates easier access to education and in relation to one's learning pace as opposed to traditional education (Szymkowiak et al., 2021). These characteristics have significant implications for Generation Z's engagement with education and the work environment. They display a strong inclination towards acquiring new knowledge and actively participating in the learning process, favoring an experiential and logic-driven approach (Hampton & Keys, 2016). Simultaneously, their preference for learning models supported by digital tools underscores their keenness to incorporate technology into their educational experiences (Andheska & Sari, 2022).

The proposed hypotheses were derived from the analysis of existing literature:

H1. *There is a correlation between the motivation indicators and the acceptance of technology.*

H2. *There is a correlation between the motivation indicators, attitude and intention to use mobile apps*

H3. *Motivation indicators are predictors for technology acceptance.*

H4. *Motivation indicators are predictors for attitude and intention to use mobile apps*

Additionally, Figure 1 illustrates the conceptual research model that is built upon these hypotheses.

Figure 1. Conceptual model
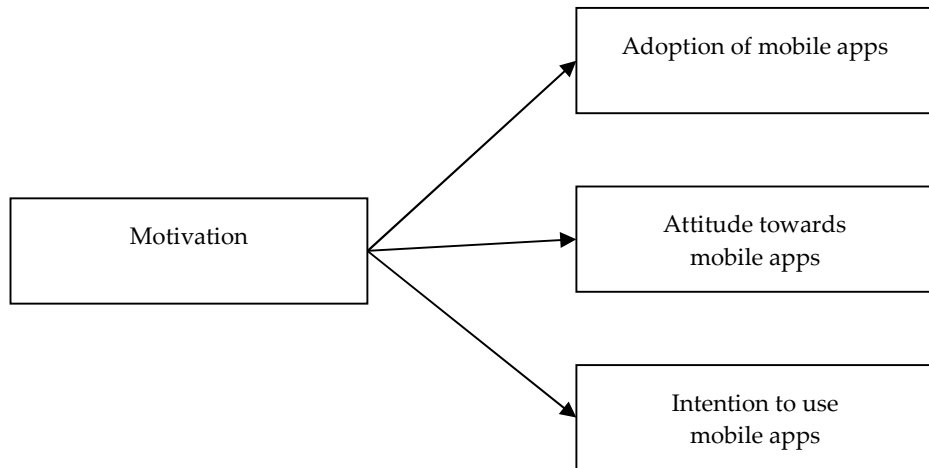
Materials and methods

Participants

The data used in this study, covering the period from January 2023 to June 2023, were extracted from an ongoing extensive project on the digital behavior of Romanian consumers. The research comprised a total of 30 participants, all of whom responded to the survey, resulting in a 100% response rate. All the questionnaires that were completed were considered valid. Table 1 shows an overview of the demographic characteristics of the sample.

Table 1. Respondents' demographic characteristics

Demographic characteristics	Frequency	N
Gender		

Females	67%	20
Males	33%	10
Education		
Bachelor's degree	20%	6
Master's degree	40%	12
PhD	40%	12

Survey Procedure

Google Forms were utilized to design the questionnaires employed in assessing technology acceptance and consumers' openness towards technology. Conversely, we utilized the purchased version of the AMI inventory for the measurement process and implemented it on the provider platform. Participation in the current research was entirely voluntary.

Data collection involved 30 Generation Z consumers from Romania and was conducted through two methods: (1) distributing the study link via Social Media or email to specific individuals and (2) utilizing the snowball technique. The criteria for inclusion involved the selection of participants who fell within the age range of 18 to 23 years, as defined by the Generation Z (Dolot, 2018). Also, demographic information, including gender and age was gathered.

All participants were provided with detailed information regarding the study's objective, which focused on collecting data regarding their openness to technology and their motivation. They were informed about the study procedure, instructions, and assured about the confidentiality of their data. Additionally, participants were explicitly informed that the researchers were solely interested in their opinions, and the research data would be used exclusively for data analysis purposes. They were also reminded that their participation in this research did not require any obligation to participate in future stages. Prior to completing the questionnaires, the included participants provided their agreement by signing the written informed consent form number 94/08.12.2021.

Measures

The measures utilized in this study were implemented in a two-step process.

In the first step, respondents were asked to complete the *Achievement Motivation Inventory* (AMI)® on the provider's platform. AMI® is an inventory with a very broad applicability, designed to measure the dimensions attributed to the construct of performance motivation, particularly in work-related contexts and professional areas (not limited to these), which emphasize performance. Thus, it enables a correct and comprehensive understanding of performance motivation by utilizing personality coordinates and certain behavioral preferences. The long form consists of 170 verbal items, with a Likert scale response format of 7 points. The results are subsequently grouped into 17 structural scales, as well as a global motivational index.

AMI® includes a total of 17 scales and a global motivational index: BE - Perseverance; DO - Dominance; EN - Engagement; EZ - Confidence in Success; FX - Flexibility; FL - Flow; FU - Fearlessness; IN - Internality; KA - Compensatory Effort; LS - Pride in Productivity; LB - Eagerness to Learn; SP - Preference for Difficult Tasks; SE - Independence; SK - Self-Control and Self-Discipline; ST - Status Orientation; WE - Competitiveness; ZS - Goal Setting. The questionnaire was validated for the Romanian population using Test Central (2005). The internal reliability of AMI has been demonstrated to be at a very good level, with a Cronbach's α of 0.98 (M = 45.1, SD = 7.83).

In the second step, respondents were asked to complete the Technology Acceptance Model (TAM), a scale measuring consumers attitude towards technology, and a scale measuring the consumers intention to use.

The Technology Acceptance Model (TAM) is a widely recognized theoretical framework in the field of information systems and technology management. It was initially proposed by Fred Davis in 1989 and has since been expanded and refined by various researchers. TAM aims to explain and predict individuals' acceptance and usage of technology by examining the underlying factors that influence their behavior. The model posits that perceived usefulness (PU) and perceived ease of use (PEOU) are the key determinants of technology acceptance (Marangunić & Granić, 2015; Surendran, 2012). Perceived usefulness refers to the extent to which an individual believes that using a particular technology will enhance their job performance or make their tasks easier. Perceived ease of use*,* on the other hand, refers to the degree to which an individual believes that using the technology

will be effortless and free from complexity (Marangunić & Granić, 2015).

TAM suggests that individuals' attitudes towards using technology are influenced by these two factors. Positive attitudes towards usefulness and ease of use are more likely to result in a higher intention to use the technology, which, in turn, leads to actual technology adoption and usage. TAM has been widely applied and validated in various domains, including e-commerce, healthcare, education, and many others. It has served as a foundation for the development of subsequent models and frameworks, such as the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh & Zhang, 2010). Items used in this research were adapted after Lai & Li (2005) with examples of items such as "I can accomplish my daily tasks more easily using mobile apps" for perceived usefulness factors and "Overall, I believe mobile apps are easy to use" for perceived ease of use factor. The internal reliability of TAM has been demonstrated to be at a very good level, with a Cronbach's α of 0.94 for the perceived usefulness factor (M = 2.90, SD = 1.63) and a Cronbach's α of 0.94 for the perceived ease of use factor (M = 2.26, SD = 1.71).

Attitude towards the use of mobile applications

To test the attitude towards the use of mobile applications we use 3 items adapted after Lai & Li (2005) with examples of items such as "In my opinion, it is desirable to use mobile apps" or "Overall, my attitude towards mobile apps is favorable". The internal reliability of the attitude scale has been demonstrated to be at a very good level, with a Cronbach's α of 0.97 (M = 2.31, SD = 1.33).

Intention to use mobile apps

To test the intention to use mobile apps we again used 3 items adapted after Lai & Li (2005) with examples of items such as "I will use mobile apps on a regular basis in the future." or "I will frequently use mobile apps in the future.". The internal reliability of the scale has been demonstrated to be at a very good level, with a Cronbach's α of 0.87 (M = 2.31, SD = 1.14).

Consumer profile

The section on consumer profile comprised questions aimed at evaluating the consumer profile through a combination of Likert scales and descriptive single-choice questions. Prior to their

inclusion in the survey, these questions underwent a pretest in an earlier stage and were subsequently refined based on preliminary analysis. Some questions were rephrased to enhance comprehension, while others had their response options adjusted to better align with the research objectives. The consumer profile questions were divided as follows:

- one 7-Likert item evaluating the consumers' openness to use new apps developed by brands: "How interested are you in using an application for online warranty management of purchased products instead of the papers received from the store? Please use the scale from 1 to 7, where 1 means "not at all interested" and 7 means "totally interested"."
- one 7-Likert item evaluating consumers' openness to use warranty management apps instead of traditional warranty management: "How important is it to you for a store to have online shopping apps? Please use the scale from 1 to 7, where 1 means "not at all important" and 7 means "very important".
- one single choice question evaluating the payment habits ("In general, how do you usually pay for the products you purchase?") with the following type of answers: "cash", "card", "mobile or internet banking", and "meal vouchers".
- one single choice question evaluating the loyalty cards usage ("Do you usually use loyalty cards or apps specific to the stores where you shop?") with answers as "I don't use loyalty cards", "Sometimes", "Most often", and "Yes, every time".

Demographic questions

Finally, we collected gender, age and education for the demographic information.

Results

The presentation of the findings is structured into two main sections: (1) an analysis of the consumer profile, encompassing descriptive and preliminary results, and (2) hypothesis testing.

Descriptive results

The examination of the consumer profile involved an analysis of respondents' shopping habits and their attitudes towards digital applications. When considering consumers' receptiveness to using

loyalty cards, 50% of the respondents reported utilizing them frequently, while 28.6% indicated occasional usage. The remaining 21.4% confirmed using loyalty cards consistently. In terms of payment methods, 71.4% of the participants reported using cards for payment, 21.4% utilized mobile banking apps, and only 7.1% preferred cash transactions. These findings underscore a clear inclination among consumers towards modern payment methods as opposed to traditional ones. When it comes to the importance consumers place on shopping apps for stores, there is a strong indication of high interest among them (M = 6.19, SD = 0.98). Regarding the adoption of modern warranty management solutions, again we found a high interest (M = 6.11, SD = 0.89) in using an app instead papers received from the store.

Research Hypotheses

H1. *There is a correlation between the motivation indicators and the acceptance of technology.*

In order to examine the relationship between motivation indicators and the adoption of technology, Pearson Correlation analysis was conducted. The results revealed that there were no significant correlations between any of the motivation indicators and the acceptance of technology (Table 2). This suggests that the motivation factors assessed in the study do not appear to have a direct influence on the willingness or likelihood of individuals adopting new technologies.

H2. *There is a correlation between the motivation indicators, attitude and intention to use mobile apps*

Pearson correlation analysis was conducted to explore the relationship between motivation indicators and attitudes towards mobile apps, as well as the intention to use mobile apps. The results revealed several noteworthy findings. Firstly, a positive correlation was observed between attitude and indicators such as dominance (r = .40, p < .05), engagement (r = .39, p < .05), and the preference for difficulty (r = .42, p < .05). This suggests that individuals with a more favorable attitude towards mobile apps tend to exhibit higher levels of dominance, engagement, and a preference for challenging experiences. Secondly, in terms of the intention to use mobile apps, positive correlations were found with indicators such as dominance (r = .39, p < .05), engagement (r = .43, p < .05), flexibility (r = .42, p < .05), and status orientation (r = .50, p < .05). This implies that individuals who express a stronger intention to use mobile apps also tend to

display higher levels of dominance, engagement, a preference for flexible experiences, and a focus on social status. These findings suggest that certain motivation indicators play a role in shaping both attitudes towards mobile apps and the intention to use them. By identifying these correlations, it provides valuable insights into the factors that influence individuals' adoption and usage of mobile apps. Results are presented in Table 3.

H3. *Motivation indicators are predictors for technology acceptance.*

A linear regression analysis was conducted in order to determine the significant predictors associated with the two factors of technology acceptance. The findings of the study revealed that when it came to the perceived usefulness factor, both engagement ($R^2 = .22$, $p < .05$) and desire to learn ($R^2 = -.24$, $p < .01$) emerged as significant predictors. In other words, individuals who exhibited higher levels of engagement and a stronger inclination towards learning were more likely to perceive the technology as useful. Conversely, when examining the perceived ease of use factor, it was found that none of the motivation factors were predictors for ease of use. Results obtained for each predictor can be seen in Tabel 4.

H4. *Motivation indicators are predictors for attitude and intention to use mobile apps*

A multiple linear regression analysis was conducted to identify the predictors for both attitude and intention to use mobile apps. The results have shown that engagement ($R^2 = 0.19$, $p < 0.05$) and Eagerness to Learn ($R^2 = -0.20$, $p < 0.05$) were predictors for attitude towards mobile apps. On the other side, engagement ($R^2 = 0.18$, $p < 0.01$), fearlessness ($R^2 = -0.21$, $p < 0.01$), and Eagerness to Learn ($R^2 = -0.14$, $p < 0.05$) were significant predictors for the intention to use mobile apps in the future. Results are presented in Tabel 5.

Conclusions and discussions

Today's society for Generation Z has built a favorable environment for digitization, which is a necessary element in the context of how everyday life is carried out. Therefore, the acceptance of technology in their lives is not only a significant factor that influences social interactions but also contributes to the entry into the task and increased engagement. Through predictors such as desire to learn, pride in performance and

commitment to the task, this openness and acceptance of technology in everyday life contributes to the improvement of the social experience but also to the efficiency of communication, increasing the level of involvement. Over the years, technology has brought with it a higher level of dominance and has also been a challenge for Gen Z to keep up with social changes. Because this generation presents a lower level of attention, they need a higher level of commitment to their daily routines and tasks, these changes in their behaviors and emotions contributing to increased task performance. Our results reinforce the idea that there is a correlation between motivation and the adoption of technology in the lives of Generation Z. This research also comes with new insights in the field of openness to the use of technology, while most of the task demands focus more on digitized approaches.

First, the present study provides new insights linking Gen Z's attitudes toward technology and dominance, commitment, and preference for difficulty. According to our results, technology is an important aspect that today's society needs to consider if they want to improve the quality of life of Generation Z. The results are consistent with the demands of this generation showing that digitization at this time has a significant contribution. However, commitment and willingness to learn are the factors that determine the perception of technology use. As previous research has shown, this can be explained by the fact that when Gen Z faces new tasks, they show a desire to learn and persist in the task, these elements influencing them to perceive even more and correctly utility of technology.

Second, our research highlights the significant predictors of technology acceptance, ease, and intention to use technology, such that commitment, pride of performance, and willingness to learn are necessary conditions for increasing technology acceptance. The use of these technological elements can have multiple contributions to the performance of life, as they facilitate access to various services that are considered important for this generation. Because these factors influence not only the acceptance of technology but also the intention to use the technology in certain ways. However, what may be an important predictor of technology acceptance towards work tasks is the commitment and willingness to learn that consumers perceive in handling new situations. Having a positive impact on this generation's learning performance will keep them coming back because of their positive experiences with certain technology

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elements. With a serious commitment to the task, a Gen Z consumer will become a loyal consumer and, further, a consumer who will identify with the technology.

The findings of this research also have some important psychoeducational implications for performance enhancement and social adaptation. The economic market should focus on developing user-friendly digital services that are easy to use and require minimal effort. This may include designing learning aids that are intuitive and simple, providing clear instructions and support. This can help them develop trust and loyalty to embrace the technology, and thus lead to nurturing the success of digital applications.

So, Gen Z consumers should develop the cognitive and instrumental efforts needed to use technological services, this can contribute to decision-making and eliminate the fear of the new or unknown for this technological field, the development of technological services being centered on the consumer and efficiency and performance. Understanding the relationship between the willingness to learn and the openness to accept technology enables the development of effective and accurate strategies and tools for Gen Z consumers. Technology can also enable the construction and design of innovative learning experiences that correlate with Gen Z interests and motives , influencing the development of a more motivating and effective social and educational space. In conclusion, digitization is not just a periodic current, it represents a necessary solution that makes consumers resist in a competitive environment, technology being perceived as an opportunity to gain persistence and motivation in work tasks.

APPENDIX

Table 2. Correlation between motivation indicators and technology acceptance

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
BE	44.4	9.71	-																		
DO	40.0	9.32	0.532**	—																	
EN	45.9	8.96	0.578**	0.698***	—																
EZ	47.0	10/.1	0.674***	0.830***	0.849***	—															
FX	45.2	7.98	0.807***	0.769***	0.772***	0.859***	—														
FL	45.2	8.88	0.639***	0.721***	0.765***	0.849***	0.790***	—													
FU	39.6	8.25	0.763***	0.554**	0.601***	0.661***	0.767***	0.638***	—												
IN	46.2	7.85	0.782***	0.517**	0.642***	0.648***	0.739***	0.714***	0.725***	—											
KA	46.6	9.52	0.622***	0.606***	0.843***	0.806***	0.708***	0.744***	0.530**	0.686**	—										
LS	52.3	11.00	0.739***	0.747***	0.848***	0.871***	0.846***	0.845***	0.549	0.703**	0.869***	—									
LB	45.3	8.49	0.542**	0.813***	0.771***	0.874***	0.689***	0.763***	0.553	0.505	0.717***	0.773***	—								
SP	44.2	8.61	0.612***	0.769***	0.756***	0.772****	0.809***	0.822***	0.740	0.743***	0.719***	0.752***	0.761***	—							
SE	42.2	8.24	0.610***	0.791***	0.519**	0.715***	0.707***	0.619***	0.693	0.609***	0.515*	0.569*	0.719**	0.797**	—						
SK	45.0	8.94	0.784***	0.683***	0.790***	0.773***	0.790***	0.733***	0.797	0.800**	0.785***	0.818***	0.731***	0.831***	0.629	—					
ST	46.4	11.1	0.514**	0.837***	0.795***	0.896***	0.748***	0.732***	0.427	0.544**	0.704***	0.826***	0.792***	0.680***	0.620	0.618*	—				
WE	40.1	8.54	0.561**	0.609***	0.646***	0.745***	0.668***	0.663***	0.485	0.699	0.720***	0.702***	0.610***	0.622***	0.560	0.567*	0.782***	—			

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
ZS	46.0	9.62	0.640***	0.793***	0.799***	0.898***	0.819***	0.887***	0.608	0.766	0.777***	0.836***	0.790***	0.829***	0.730	0.698***	0.873***	0.822***	—		
PE	2.90	1.63	0.023	0.330	0.358	0.146	0.213	0.234	0.069	0.245	0.220	0.219	0.046	0.351	0.186	0.232	0.277	0.222	0.236	—	
PEU	2.26	1.71	0.101	0.299	0.242	0.078	0.151	0.228	0.111	0.238	0.107	0.100	0.013	0.318	0.194	0.160	0.212	0.145	0.257	0.805***	—

Notes: ***p < .001, **p < .01, *p < .05

BE - Perseverance; DO - Dominance; EN - Engagement; EZ - Confidence in Success; FX - Flexibility; FL - Flow; FU - Fearlessness; IN - Internality; KA - Compensatory Effort; LS - Pride in Productivity; LB - Eagerness to Learn; SP - Preference for Difficult Tasks; SE - Independence; SK - Self-Control and Self-Discipline; ST - Status Orientation; WE - Competitiveness; ZS - Goal Setting; PE - Perceived usefulness; PEU - Perceived ease of use

Table 3. Correlation between motivation indicators, attitude and intention to use mobile apps

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
BE	44.4	9.71	-																			
DO	40.0	9.32	0.532**	—																		
EN	45.9	8.96	0.578**	0.698***	—																	
EZ	47.0	10/.1	0.674***	0.830***	0.849***	—																
FX	45.2	7.98	0.807***	0.769***	0.772***	0.859***	—															
FL	45.2	8.88	0.639***	0.721***	0.765***	0.849***	0.790***	—														
FU	39.6	8.25	0.763***	0.554**	0.601***	0.661***	0.767***	0.638***	—													
IN	46.2	7.85	0.782***	0.517**	0.642***	0.648***	0.739***	0.714***	0.725***	—												
KA	46.6	9.52	0.622***	0.606***	0.843***	0.806***	0.708***	0.744***	0.530**	0.686**	—											
LS	52.3	11.00	0.739***	0.747***	0.848***	0.871***	0.846***	0.845***	0.549	0.703**	0.869***	—										
LB	45.3	8.49	0.542**	0.813***	0.771***	0.874***	0.689***	0.763***	0.555	0.505	0.717***	0.773***	—									

	M	SD	BE	DO	EN	EZ	FX	FL	FU	IN	KA	LS	LB	SP	SE	SK	ST	WE	ZS	ATT	ITU
SP	44.2	8.61	0.612***	0.769***	0.756***	0.772****	0.809***	0.822***	0.740	0.743***	0.719***	0.752***	0.761***	—							
SE	42.2	8.24	0.610***	0.791***	0.519**	0.715***	0.707***	0.619***	0.693	0.609***	0.515**	0.569**	0.719***	0.797***	—						
SK	45.0	8.94	0.784***	0.683***	0.790***	0.773***	0.790***	0.733***	0.797	0.800**	0.785***	0.818***	0.731***	0.833***	0.629	—					
ST	46.4	11.1	0.514**	0.837***	0.795***	0.896***	0.748***	0.732***	0.427	0.544**	0.704***	0.826***	0.792***	0.680***	0.620	0.618***	—				
WE	40.1	8.54	0.561**	0.609***	0.646***	0.745***	0.668***	0.663***	0.485	0.699	0.720***	0.702***	0.612***	0.622***	0.560	0.567**	0.782***	—			
ZS	46.0	9.62	0.640***	0.793***	0.799***	0.898***	0.819***	0.887***	0.608	0.766	0.777***	0.836***	0.790***	0.829***	0.730	0.698***	0.873***	0.822***	—		
ATT	2.31	1.33	0.272	0.402*	0.387*	0.273	0.363	0.313	0.229	0.369	0.157	0.285	0.130	0.417*	0.320	0.322	0.369	0.254	0.349	—	
ITU	2.31	1.14	0.312	0.387*	0.433*	0.270	0.418*	0.301	0.200	0.376	0.228	0.330	0.163	0.449*	0.330	0.350	0.378	0.278	0.361	0.868***	—

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

BE - Perseverance; DO - Dominance; EN - Engagement; EZ - Confidence in Success; FX - Flexibility; FL - Flow; FU - Fearlessness; IN - Internality; KA - Compensatory Effort; LS - Pride in Productivity; LB - Eagerness to Learn; SP - Preference for Difficult Tasks; SE - Independence; SK - Self-Control and Self-Discipline; ST - Status Orientation; WE - Competitiveness; ZS - Goal Setting; ATT - Attitude towards mobile apps; ITU - Intention to use mobile apps.

Table 4. Predictors of Perceived Usefulness and Perceived Ease of Use

	Predictor	Estimate	SE	95% Confidence Interval		p
				LL	UL	
PU	BE	.001	0.09	-0.20	0.20	0.99
	DO	0.07	0.10	-0.14	0.30	0.44
	EN	**0.22***	0.09	0.02	0.43	0.03
	EZ	-0.11	0.17	-0.49	0.26	0.51
	FX	0.03	0.15	-0.31	0.37	0.83
	FL	0.19	0.12	-0.09	0.46	0.16
	FU	-0.19	0.11	-0.44	0.06	0.11
	IN	-0.04	0.13	-0.34	0.26	0.77
	KA	-0.01	0.09	-0.22	0.20	0.92
	LS	-0.15	0.13	-0.45	0.14	0.28
	LB	**-0.24***	0.10	-0.46	-0.02	0.03
	SP	0.01	0.16	-0.35	0.37	0.94
	SE	0.14	0.12	-0.13	0.42	0.26
	SK	0.17	0.19	-0.25	0.59	0.39
	ST	0.06	0.12	-0.20	0.32	0.63

	WE	0.07	0.08	-0.11	0.25	0.34
	ZS	-0.12	0.15	-0.47	0.23	0.45
PEU	BE	0.16	0.09	-0.04	0.37	0.11
	DO	0.14	0.10	-0.09	0.36	0.20
	EN	0.18	0.09	-0.03	0.40	0.08
	EZ	-0.20	0.17	-0.59	0.19	0.28
	FX	-0.05	0.15	-0.40	0.29	0.74
	FL	0.20	0.13	-0.09	0.48	0.15
	FU	-0.15	0.11	-0.41	0.10	0.21
	IN	-0.08	0.14	-0.39	0.23	0.57
	KA	0.05	0.10	-0.17	0.27	0.61
	LS	-0.30	0.14	-0.60	0.01	0.05
	LB	-0.22	0.10	-0.44	0.01	0.06
	SP	0.07	0.16	-0.30	0.44	0.68
	SE	0.03	0.12	-0.25	0.31	0.81
	SK	0.11	0.19	-0.32	0.54	0.58
	ST	0.13	0.12	-0.14	0.39	0.32

WE	-0.01	0.08	-0.20	0.17	0.86
ZS	0.03	0.16	-0.33	0.39	0.85

Notes: *p < .01, *p < .05

BE - Perseverance; DO - Dominance; EN - Engagement; EZ - Confidence in Success; FX - Flexibility; FL - Flow; FU - Fearlessness; IN - Internality; KA - Compensatory Effort; LS - Pride in Productivity; LB - Eagerness to Learn; SP - Preference for Difficult Tasks; SE - Independence; SK - Self-Control and Self-Discipline; ST - Status Orientation; WE - Competitiveness; ZS - Goal Setting; PE - Perceived usefulness; PEU - Perceived ease of use

Table 5. Predictors of attitude towards mobile apps and intention to use mobile apps

	Predictor	Estimate	SE	95% Confidence Interval LL	95% Confidence Interval UL	p
ATT	BE	0.10	0.07	-0.06	0.26	0.22
	DO	0.05	0.08	-0.13	0.23	0.54
	EN	**0.18***	0.07	0.01	0.36	0.03
	EZ	0.03	0.13	-0.27	0.35	0.78
	FX	-0.04	0.12	-0.32	0.23	0.72
	FL	0.08	0.10	-0.14	0.31	0.43
	FU	-0.17	0.09	-0.38	0.03	0.08

	IN	-0.01	0.10	-0.26	0.23	0.88
	KA	-0.10	0.07	-0.28	0.06	0.19
	LS	-0.11	0.10	-0.35	0.13	0.33
	LB	**-0.20***	0.08	-0.38	-0.01	0.03
	SP	0.09	0.13	-0.20	0.39	0.48
	SE	0.06	0.09	-0.15	0.29	0.50
	SK	0.09	0.15	-0.25	0.43	0.57
	ST	0.02	0.09	-0.19	0.24	0.79
	WE	0.03	0.06	-0.11	0.18	0.62
	ZS	-0.05	0.12	-0.34	0.23	0.65
ITU	BE	0.07	0.05	-0.04	0.19	0.17
	DO	-0.01	0.05	-0.14	0.11	0.83
	EN	**0.18****	0.05	0.05	0.30	0.01
	EZ	-0.07	0.10	-0.30	0.15	0.46
	FX	0.08	0.08	-0.11	0.28	0.36
	FL	0.10	0.07	-0.06	0.26	0.20
	FU	**-0.21**	0.06	-0.36	-0.06	0.01
	IN	-0.07	0.07	-0.25	0.10	0.36
	KA	-0.06	0.05	-0.19	0.06	0.29
	LS	-0.15	0.07	-0.33	0.02	0.08
	LB	**-0.14***	0.05	-0.27	-0.01	0.03
	SP	0.02	0.09	-0.19	0.23	0.82

SE	0.11	0.07	-0.04	0.27	0.14
SK	0.16	0.11	-0.08	0.42	0.16
ST	0.04	0.06	-0.11	0.19	0.56
WE	0.03	0.04	-0.06	0.14	0.44
ZS	-0.01	0.09	-0.22	0.19	0.91

Notes: **$p < .01$, *$p < .05$

BE - Perseverance; DO - Dominance; EN - Engagement; EZ - Confidence in Success; FX - Flexibility; FL - Flow; FU - Fearlessness; IN - Internality; KA - Compensatory Effort; LS - Pride in Productivity; LB - Eagerness to Learn; SP - Preference for Difficult Tasks; SE - Independence; SK - Self-Control and Self-Discipline; ST - Status Orientation; WE - Competitiveness; ZS - Goal Setting; ATT - Attitude towards mobile apps; ITU - Intention to use mobile apps

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GAMIFICATION APPROACHES IN FOSTERING OF MODERN EDUCATIONAL ECOSYSTEMS

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Abstract: *A new impetus for the development of information technology in the educational process was given by the COVID-19 coronavirus pandemic and the quarantine imposed to prevent the spread of the disease. Due to the quarantine and the war in Ukraine, the educational process has moved to the online space, which has created conditions for remote learning using media content. Media education is designed to prepare students for life in the new information environment, to teach them to fully perceive different types of information, to understand and master the means of communication based on interactive forms of communication. It also improves the quality of information perception, students' engagement in interactive classes and the engagement of all participants in the learning process in the online environment. Thus, today's realities require new approaches and teaching tools that should be implemented by modern higher education institutions in the era of Education 4.0. In order to implement new approaches to the organization of high-quality online learning, it is necessary to adhere to the Concept of Digital Transformation of Education and Science, namely the Effective Usage of Digital Technologies in the Educational Process. In the context of long-term digital learning and the lack of live communication with students, as the result the new problem occurs - decrease of motivation to learn. For solving this problem teachers need to develop and apply new approaches to the organization of online learning. One of the approaches is implementation game-based educational technologies, namely gamification the*

educational process. Gamification is the process of using game design principles and mechanics in non-game contexts, such as education, to make the learning process more engaging and effective. Gamification is used to deepen learner engagement and motivation, enhance their learning experience and improve academic performance. Virtual gamified teaching is an effective approach to studying process in case if the right platform, studying material and tools are used. One of the approaches to gamification is the development and use of a set of video lessons with a virtual teacher, which helps to draw students' attention to important points of the lecture and diversify the explanation of infographic objects.

Keywords: *digital technologies; gamification; virtual teacher; interactivity.*

Introduction

The concept of gamification is popular today and is used in various ways. One of the most powerful of them is learning and acquiring new skills, improving one's own abilities, switching concentration, etc. Such training can be carried out in groups, at universities (classical education, higher education), in the process of acquiring special skills in short-term courses, during independent study of various disciplines, foreign languages, new practices, etc. A separate area is corporate training for company employees. Games generally help to change a person's state of mind - their mood, sense of self in different roles, teamwork, etc. That is why, in training, games allow you to acquire knowledge and practical skills in a particular area more quickly and efficiently. However, the systematic use of gamification meets such goals as unlocking new abilities of game participants, introducing new creative methods of generating new ideas, and acquiring new knowledge and skills. If gamification is introduced into the educational process, it is necessary to take into account its features and formats. The active introduction of distance and blended learning with the use of remote teacher-student communication (for example, in the context of the COVID-19 pandemic and wartime force majeure) requires new approaches to the introduction of game elements into learning management systems.

The environment of a learning management system has its own rules, roles, limitations and opportunities, and this partially coincides with the game environment. For students of various types of education, professional games related to their future profession and game

elements that will promote their activity in the learning environment are also important. Gamification has been used in the educational process for a long time and means the integrated use of game elements in education in accordance with the methodology for obtaining certain competencies.

Analysis of recent research and publications. Game elements have long been used in learning, both offline and online. The popular trend of gamification allows participants to create special characters, helps to form game thinking and introduce dynamic games. It is important to create active situational tasks, case studies, simulations, etc. for training. When analyzing professional disciplines, it is important to simulate future professional activities [1]. Among the different studies on gamification in e-learning, we can distinguish the following areas

- Identification of gamification processes and their impact on learning processes and outcomes,
- Psychological studies of the impact of gamification processes on learning outcomes,
- Development of gamification design models for the information environment,
- Development of educational games and gamification modules for the e-learning environment,
- Development of models for the evaluation of gamification tools and processes used in the electronic information environment.

If we talk about the areas of application of gamification in the learning process, it is advisable to distinguish between learning in an educational institution through an electronic information educational environment, corporate training, self-study using special platforms, etc. Let us consider the main definitions and approaches to the organization and implementation of gamification. Gamification in e-learning is the process of integrated use of game elements to gain new experience, test new methods, forms of organization, simulate various functions and actions implemented in the electronic information and educational environment [1-3]. Simple elements of gamification have been introduced in help systems for a long time (the famous paperclip in MS Office or another character that could be chosen by the user [4]. Interestingly, this approach was helpful for some users, while for others it only caused irritation). Such approaches ease the situation in circumstances that are not clear to the user, and reminders help them make the right decision about what to do next and how to do it. In

modern office applications, there are no game characters, although we believe they can also help in some cases. From this point of view, we believe that it would be advisable to retain such tools. On the other hand, the results of experiments on the personification of various objects (for example, geometric shapes) make it easier for the user to find information and understand their next steps in the electronic environment [5]. For example, in the Duolingo app, a game character motivates the user to continue and helps them. The character appears only after completing microtasks. In addition, such applications have many game characters that speak, answer, and confirm the correctness (Fig. 1) [6].
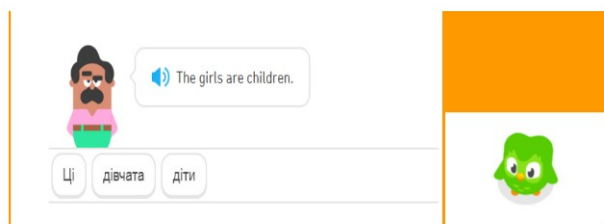
Fig. 1. An example of a game character [6] The application also implements the method of small steps and achieving micro-goals.

Gamification in education is aimed at increasing the motivation of students and pupils to acquire new knowledge and skills. Discussions about the introduction of game-based methods for different age groups have been going on for a long time. The game is the main tool for children and is already becoming an additional tool. Similarly, for adult higher education students, gamification is a tool for learning, but not the main method of learning [7]. The introduction of e-learning has contributed to the intensification of various studies and the introduction of gamification in various educational electronic systems. A number of problems with such use have not only remained, but also increased. Among them are:

- Low level of controllability of educational processes,

- Inappropriate motivational approaches.

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● Low level of control over educational processes,

● inappropriate motivational approaches,

● technical problems,

● insufficient levels and number of supporting technical staff,

● lack of close and high-quality connection between gamified elements of the general environment and individual lessons, disciplines, etc.

During the COVID-19 pandemic, distance learning has gained many opponents, due to the immediate need for its use by teachers without sufficient qualifications, lack of adaptive teaching methods, students' readiness to perceive information in new formats, etc. Game moments can become a trigger for students' interest and an impetus for increasing their own activity in learning. Increasing the efficiency, effectiveness, motivation and engagement of students in e-learning can be achieved through the use of game mechanics and game dynamics. The development of e-learning and gamification in the educational environment is not only related to challenges such as the pandemic and martial law. Game elements are used to support home learning, asynchronous learning, in various non-formal education courses, in distance and blended learning. The essence of the main approach to creating gaming services is that pupils and students learn best when they not only get acquainted with and absorb theoretical material, but also when they actively play with the help of special gaming services. This approach is based on the theory of motivation and the state of flow support. Game situations allow you to focus on a specific task and get the best results while being in the flow of the learning space [7-10]. The most common and generally accepted definition of gamification for learning can be formulated as follows: it is the organization of gamified educational processes using game thinking, mechanics, cases, special motivational mechanisms to obtain high-quality programm learning outcomes. That is, it involves people in a non-game context

[9]. If we consider business trends in the development of gaming, the goals of game-based learning are to engage employees in order to increase their productivity, improve their skills, personal development and create innovations [11]. The educational model, which is based on the goals similar to those of a business model, for example, Alex Osterwalder's Business Model Canvas, is focused on acquiring high-quality knowledge and skills that can be monetized and presented at a higher level in the form of various types of professional implementation. Elements of gaming should be tied to the goals of learning in general and studying a specific discipline, taking into account practical cases for future professional activities. First of all, this applies to professionally oriented disciplines. However, practical cases can also be used in classical disciplines such as mathematics, physics, Ukrainian language, and culture. The gamification canvas model consists of nine sections that break down the key elements in the development of gamification projects.

Methodology

Gamification is the process of introducing game elements to test and improve performance and achieve success. The well-known comprehensive model of gamification in education includes learning processes, target areas, accumulation of points and bonuses, performance of various learning roles and formation of a learning profile, and, most importantly, obtaining learning outcomes as a set of knowledge and skills that are formed and consolidated not only in traditional processes but also during educational games. Figure 2 shows a general model of e-learning supported by gamification. Such a model should be based on educational goals, form key indicators, and have clear rules for the target behavior of learners, which are presented in their profiles. The accounts or profiles of learners and players contain results (indicators). Each game has its own activity cycles, which are tied to the learning periods.

Educational model				
Educational objectives	Applicant profiles	Target behaviour	Game rules, gaming at different levels	Activity cycles
Key indicators		Electronic resources and their use, message	Game situations of the discipline	

		dynamics		
Costs		Deployment		Support

Fig. 2. Educational model of gamification (improved by [11])

Problem-based Learning (PBL) models involve obtaining points and badges, forming a leaderboard, which encourages participants to become more active and continue their work in the EEIS. The game involves the introduction of emotionally positive and dynamic mechanics. There is a well-known formal approach to game design and game research by Hanicke R., Leblanc M. and Zubeck R. - MDA Framework). The template divides the game into three elements: mechanics, dynamics, and aesthetics [12-13]. This approach involves the introduction of special modules for activity monitoring, mechanical scoring of activity, and dynamic presentation of results using various design approaches. However, the context of the game at the discipline level should be formed by the teacher himself with the help of the elements he proposes. This can be an environment for creating crossword puzzles and quizzes or a testing environment, set deadlines for completing tasks, etc. The main thing is to remember to follow SMART principles when creating a gamified environment at different levels. Namely, the definition of a specific goal, the measurability of gamification goals, the availability of a team for implementation, the realism and time constraints of both the introduction and implementation of gamified educational processes [14].

Student learning in eLearning requires support for motivation to learn, to participate in social learning networks, as well as the interest of teachers and the management of the educational institution in the active work of both students and teachers.

The goal of introducing a comprehensive gamification system is to engage motivated students in games that simulate professional work, allow them to conduct experiments in accordance with the topic of study, and enable them to gain a new level of competence. Gamification built into learning systems also allows you to create a feedback loop based on the analysis of data on student actions and learning outcomes. This feedback can be used to adjust the educational process and improve game elements. A gamification system can be represented by three levels: components, mechanics, and dynamics. The component level allows you to organize gamification processes that engage players. It forms the dynamic monitoring of player activity. Dynamic monitoring involves the use of dynamic game elements. It is

important that all elements should be integrated into a single system and have functional outlines. Elements can be represented, for example, by time limits, scores, emotional contour, plot contour, progress contour, social interaction contour [15]. Processes for engaging applicants in the game include completing tasks, giving chances, organizing competitions, cooperation, feedback, accumulating points, evaluating results, etc.

Fig. 3 shows three levels of creating a gamified system.
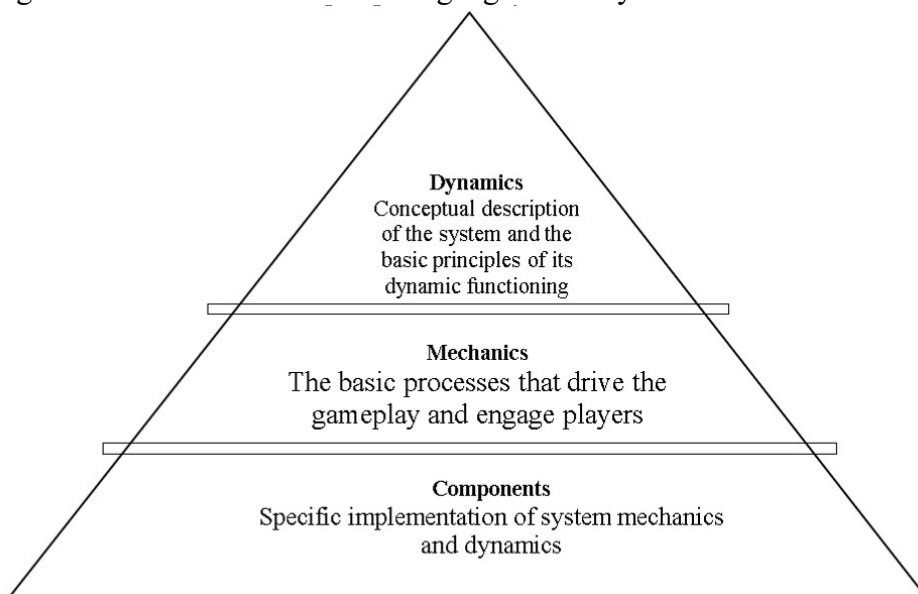
Fig. 3. Elements of a gamified system [15]

Processes for moving and engaging students in the game include completing tasks; giving chances; organizing competitions; cooperation, feedback; accumulating points; evaluating results, etc. Examples of the use of gamified systems include special courses on Moodle, Coursera, and individual gamified software applications. Such solutions can be the basis for creating a comprehensive gamified learning management system. Various classifications of gamification processes (gamification) indicate that it has penetrated various spheres of life. The main reasons for this are based on people's emotions and the formation of the feeling "The game is easy and fun!".

Conclusion
Known gamification methods involve covering various aspects of learning with gamification processes to positively influence students' motivation and learning outcomes. However, an analysis of the

implemented gamification software modules on individual educational platforms and in learning management systems shows that they are fragmented and do not cover all the identified properties. In addition, the proposed methods do not take into account the peculiarities of the educational process at the university in distance and blended learning. The purpose of improving gamification processes is to increase the level of students' motivation to learn, their activity, and practical skills in performing game exercises aimed at mastering specific topics of the discipline. In this process, it is important to develop a sense of satisfaction with working in an e-learning environment and an understanding of the need for their own activity, which should be taken into account and evaluated.

The new generation of students actively uses microlearning on modern platforms and expects similar tools in the information environment of their university.

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THE REALITY OF PRACTICAL TRAINING PROGRAMS FOR TEACHERS IN LIGHT OF TECHNOLOGICAL DEVELOPMENT AND CONTINUOUS MODERN INNOVATIONS: CHALLENGES AND OPPORTUNITIES

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Abstract: *To meet labor market demands, teachers must stay updated with technological advancements as technology has become a crucial part of life. To remain relevant, they must engage in specialized training programs. The success of these programs relies on trainees' basic technological skills. To attain effective educational results, educators must recognize the influence of technological advancements and innovations on the relationship between instructors and students. This study investigated the most successful design techniques for practical teacher training programs in the age of the technological revolution. It recognizes the problems and opportunities associated with adopting new technological developments in educational operations. By analyzing the current state of training programs for teachers, this study seeks to identify the obstacles faced in acquiring modern technological skills and the subsequent benefits to educational systems. In addition, practical recommendations were provided to address these challenges. Furthermore, this study will investigate the main components that should be included in the content of training programs, considering the technical skills expected by both teachers and learners. Drawing from previous studies on teacher training in modern technology, this study hopes to offer unique insights and recommendations for future programs. The opportunities offered by technological developments to enhance the quality and effectiveness of practical training programs have been explored, including online and blended learning, virtual simulation, augmented reality, data-driven assessment, collaboration and communication tools, personalized learning experiences, access to open educational resources, and mobile learning. The integration of these components into practical training programs equips teachers with the skills necessary to effectively integrate technology into their teaching practices,*

ultimately improving the quality of their education and learning outcomes.

Keywords: *training programs; technological skills; interaction; educational goals; learners; teaching function; effective educational outcomes; design mechanism; continuous modern innovations.*

An explanatory introduction to the purpose of the research title

Technology has occupied a central and important place in all areas of life of all ages. Currently, those who do not find ways to keep up with technological changes can no longer keep up with the changes and requirements of the labor market in many professions, unless they participate in programs tailored to a specific field, to provide continuous vocational training that will enhance the position of the trainees in the labor market and thus ensure the need for their expertise. However, as is clear, the prerequisite for benefiting from these programs is that trainees must have a minimum level of basic technological skills so that they can be trained to acquire modern technology skills specific to a field in itself.

The educational field is one of the most important sectors that must determine the impact of technological development and modern innovations on it, especially as it is based on the interaction between the teacher and the learner to achieve the educational goals related to teaching learners the skills that will enable them to integrate into society and thus in the labor market, which is constantly changing. It is based on the development of modern technology and innovation. We must not forget that learners are always looking forward to everything new and are always up-to-date with the latest trends in modern technology. Therefore, will a teacher with modest technological skills and information be able to keep up with the needs of the learners and thus carry out his "teaching" function by achieving effective and long-term educational outcomes? (Alkhalidi, 2018) (Al-Shihabi, 2008)

The great importance of this question, and the statement of solutions to the problem it raises, is the main motive for this research, which aims to answer the following question: What is the best design mechanism for practical training programs for teachers in the era of the technology revolution, taking into account the challenges and opportunities that will appear by applying educational activities that include the latest innovations of modern technology that are compatible with the educational field?

Therefore, the main objective of this research is to " analyze the reality of practical training programs for teachers, theoretically, in the era of continuous technological changes, by highlighting the benefits that will be achieved for educational systems, taking into account the obstacles that may appear in different stages of teachers' acquisition of the skills of modern technology and their application within the course of the educational process ".

Therefore, the content was designed to include the most important elements that achieve the research goals, which are as follows:

- The impact of modern technological developments on practical training programs for teachers.
- Challenges and obstacles faced by practical training programs for teachers in the information revolution era.
- Practical recommendations to address obstacles teachers may face in practical training programs.
- Opportunities for technological development and recent innovations can improve the quality and effectiveness of practical training programs for teachers.
- These components must be included in the content of practical training programs for teachers according to the technological skills that must be present for teachers and learners at the same time.

Previous studies on the topic of research
Many recent educational studies have focused on the impact of the information revolution and e-learning tools on the course of the educational process to determine the best ways to benefit from the positive aspects of this revolution in terms of the output of educational systems. Therefore, searching for ways to train teachers to acquire technological skills is necessary to keep pace with these changes, that is, updating training programs to match the data of this age.

As examples of studies that dealt with the field of teacher training on the skills of modern technology, the following two studies are discussed: the first, conducted by Muhammad Samia Abdullah Issa and Al-Siddiq Mukhtar Othman, was published in the Journal of Graduate Studies at Tow Niles University in 2019. This study aimed to propose a vision for the optimal use of technological innovations in professional educational development. The study used descriptive and verification methods, and the theories were tested on a sample of 250 male and

female secondary school teachers in Khartoum, the capital of Sudan. The study found that teachers were highly motivated to use modern technology in the educational process. Therefore, the effective use of modern technological techniques in the educational process will ensure that the educational process keeps pace with the changes of the times, and to ensure teachers' ability to develop professionally in an effective manner, it is necessary to design appropriate training programs, including skills for modern technological technologies.

In light of these results, the researchers made the following recommendations:

- Training teachers on the use of modern technological techniques in the educational process according to a scientific vision, with clear goals and content.

- Establishing a department of modern technology in education within the Ministry of Education.

- Providing schools with modern technical tools.

The second study we will be reviewing is an article by Van Wyck Khopede Mbabazi Chikasanda, Kathrin Otrel Cass, John Williams, and Alastair Jones, titled "Enhancing teachers' technological pedagogical knowledge and practices: a professional development model for technology teachers in Malawi". It was published in 2013 in the twenty-third issue of the" International Journal of Technology and Design Education" 23, pages 597–622. The article dealt with writing about educational professional development trends and the mechanism of designing and implementing teacher training programs aimed at expanding teachers' knowledge and skills of the nature of technology and also enhancing their technological educational practices. The research also included the stages of designing and implementing a teacher-training program on the skills of using modern technology. The researchers mentioned that the program was divided into four stages, where each stage provided topics for discussion and reflection, paving the way for the last stage, which focused on training teachers practically on several skills, under Information that was provided to them in the initial stages of the program. It is worth noting that the training program also focused on training teachers on creative thinking methods, which is necessary to use modern technology tools in educational activities. The program focused on the need to follow up teachers' reactions to the information and skills that will be used to

enhance their horizons in setting aside and developing traditional ways of thinking and methods in education to encourage them to implement new practices in their classrooms. Through this program, teachers collaboratively explored new concepts, in particular, by reading research and scientific studies that were carefully selected. All stages of the program were accompanied by continuous evaluation processes that allowed recording and examining trainees' opinions about all the skills and experiences they went through within the various stages of the program. This showed that, although the teachers had experience and technological skills, they focused on following traditional teaching strategies to teach educational materials. This was explained by the fact that teachers fear stepping out of the safety zone represented by the traditional methods of education. Despite their training in the skills of modern educational technology and displaying positive results in the educational process, the researchers recommended taking gradual steps to expand their horizons and ways of thinking in conjunction with training programs. If making effective changes to teaching strategies is something he seeks, realistically.

Terms and definitions

According to the thesaurus, a training program refers to a course designed to train specific skills. (Vocabulary.com). According to UNESCO, the Institute of Statistics, a Teacher training program is "any pre-service or in-service teacher-training program that is accredited or sanctioned by the relevant national education authorities or equivalent authorities." (UNESCO, the Institute of Statistics, n.d.)

Education technology or EdTech refers to the educational process in which technology is used in education. Technical programs and devices are used in the context of the educational process to improve learning environments and outcomes. The inclusion of modern technology tools in education strategies that can arouse the interest of the learner to motivate him to actively participate in the classroom, as well as the scientific skills that the learner intends to acquire through curricula and formal courses within an educational system, will acquire additional skills related to information technology. (Al-Shihabi, 2008)

The EdTech app has many benefits for learners, teachers, and educational institutions. For learners, one of the most important benefits is improving their participation in educational activities and motivating them to participate and search for learning topics, to facilitate their acquisition of new educational experiences, and commensurate with their learning mechanism, type, and speed of

learning, because it gives learners access to more diverse educational resources, and thus prepares them to accept any changes that will happen in the future, not those that are happening in their present time.

While it saves time and effort, it also allows them to better follow the progress of all their students, while on a personal and professional level, it allows them to exchange (pedagogical expertise and experiences), collaborate with their colleagues, and see the latest educational studies.

These benefits, if achieved by teachers and learners, will be reflected in the educational facility by increasing its efficiency, reducing waste of material and human resources, improving educational results, and reducing school dropouts.

EdTech is a fast-growing and ever-evolving field. Specific examples of how EdTech can be used in the classroom are Virtual Classrooms, Online Learning Platforms, Instructional Design, Educational Planning and Management Applications, Educational Assessment and Statistics Tools, and Gamification, which refer to the use of elements such as those used in electronic games in educational contexts. The educational game is designed on several levels, and as the student skips each level, he approaches finding a solution to the problem that represents the content of the lesson as a whole or only part of it (learning). It is an engaging yet fun way to achieve the effective learning of new concepts. (Florence Martin, Ting Sun, Carl D. Westine, 2020)

EdTech is a powerful tool that encourages various educational technology professionals to use it to improve educational processes. As it is linked to modern technology and its tools, it will continue to update and develop, so its impact will often increase, as will the reasons for its use in the coming years in the educational process.

Educational VR is a type of Virtual Reality used in educational environments that allows students to experience different environments and situations in a realistic and immersive way. Educational VR can be used to teach students interactively about different cultures, historical events, scientific concepts, and other topics that were previously taught theoretically, and students rely on repetition and research to learn about them. This tool can help learners develop different skills, such as problem-solving and critical thinking, by creating simulations that allow students to solve problems and make decisions in real-time. It also has an impact on developing the ability to create virtual learning

environments by using virtual reality, which allows learners to express their creativity. This helps them develop their imagination and develop new ideas. Therefore, this tool can be said to allow learners to develop their personality better if applied for proper use.

In addition, the use of virtual reality in educational activities helps learners learn more attractively and effectively. Because it provides them with a hypothetical experience that represents the phenomena or events that are the subject of the study, which makes learning more interesting, the learner will be able to retain this information and experience for a long time in his memory and retrieve them to be used when necessary.

Despite these advantages, however, to use the virtual reality educational tool, several obstacles must be overcome, such as its high cost for some schools. The difficulty in using it and the need to train teachers and learners to use it, especially because it is classified as a complex technology in preparation and management.

In addition, the availability of a limited amount of educational VR content is an obstacle to its adoption as an educational tool compared to other tools that are flexible and easy to use to be included in educational activities.

In general, educational virtual reality is a promising technology with the potential to revolutionize education. However, some challenges must be addressed before VR can be widely adopted in schools.

The impact of modern technological developments on practical teachers' training programs

Modern technological developments are among the most important factors that affect laboratory practicum programs. Thanks to rapid technological progress, advanced technologies and tools are being used in many areas of laboratory work. These developments have played a decisive role in improving the quality of practical training and enhancing its effectiveness. It is necessary to understand the impact of modern technological developments on laboratory practicum programs, and how to exploit these developments to elevate education and training in the fields of science and technology (Gage ،N., 1964). Recent technological developments may affect practical training programs for teachers in the following ways:

Facilitating access to advanced technologies: Provides training programs that include building technical skills for teachers to learn about the latest technologies and how to use them in education. They can acquire advanced technical skills, such as designing teaching plans through the various currently available applications, learning how to design content through interactive electronic games (gamification in education), VR for education, educational robotics, and using artificial intelligence to design interactive educational activities, among others.

Expanding interactive learning: new technologies enable teachers to design educational activities that require active participation of learners in interactive and exciting learning experiences. Therefore, teachers must be trained in the skills of using multimedia such as virtual reality, augmented reality, and distance learning (which positively enhances interaction and practical experience for learners) so that they can later apply them in the educational environment.

Enhancing Collaboration and Participation: Modern technologies allow teachers to communicate and collaborate with colleagues and educational experts faster and more effectively. With teachers' possession of skills and knowledge that enable them to use modern technologies, especially those related to research and the use of educational applications, they will be able to share and exchange their educational experiences and present the obstacles they face in finding innovative and more effective solutions by benefiting from the experiences of others or from the results of the latest studies discussing similar phenomena, which were published on reliable educational platforms that promote collaborative learning and contribute to the exchange of knowledge and innovation.

Developing capabilities and skills related to data analysis and processing: Modern technologies allow for faster and more accurate data analysis using specially designed tools. These tools are necessary for the course of the educational process because of their ability to provide both the teacher and learner with accurate results in record time, which increases the effectiveness of the educational process, especially if it is applied in evaluation and educational design. Machine learning, deep learning, and statistical analysis techniques can be used to extract valuable patterns and insights from big data used in the educational process. (Popovici, D.V., Costache Colareza, C., 2023)

Continuing education that is particularly related to modern education technology and adopting a behavior based on continuous research and

curiosity to get to know everything new and interesting, especially for the group of learners, which facilitates the process of communicating with them and understanding their needs and ways of thinking, so that it becomes realistically possible to support them in achieving effective learning.

Recent technological developments have a significant impact on teacher training programs, providing new opportunities to enhance the educational experience and develop the skills of those in charge of the educational process and thus its beneficiaries. However, to keep pace with the rapid changes of our time, educational institutions must, through educational policies, support ways to take advantage of the advantages of modern technology. This requires the joint efforts of all beneficiaries of educational systems to bear the requirements of integrating modern technologies in the course of the educational process. The starting point is the inclusion of teachers in training programs based on the foundations of comprehensive quality, including technical educational skills in addition to traditional skills, and simultaneously providing material resources to provide all educational facilities with the latest modern techniques.

Challenges and obstacles facing practical training programs for Teachers in the era of the information revolution

The article, written in 2013 by Rebecca Ratcliffe for the Guardian, discusses the challenges and opportunities in professional development for teachers in the context of the information revolution. The lack of regulations and guidelines surrounding professional development through educational technology has contributed to reducing the effectiveness of teacher training programs on modern educational technologies. In addition, the following factors must be considered:

Lack of organization and guidance: The article indicates that there are no specific rules or regulations governing the technical professional development of teachers. This means that anyone can claim to provide teacher training, which leads to inconsistencies and uncertainty in the quality of the available training.

Allocating insufficient periods for teachers to acquire the basic technological skills that programs should emphasize in training teachers.

The directions and goals of educational policies dominated the educational goals of educational programs instead of reflecting the personal and professional needs of trainees.

Lack of financial and human resources capable of activating trainees' participation in various training programs on the skills of modern educational technology.

Relying on local training programs or educational institutions of average quality, even without experts or specialists in modern educational technologies. Notably, internal training programs may provide trainees with a better opportunity to acquire skills because they provide the opportunity to train within a well-known environment, which facilitates the emergence of existing skills and capabilities. Therefore, if similar programs are supported by trainers and appropriate tools, their outputs of similar programs may be significantly improved.

Training programs in the shadow of information technology are needed to contain academic research skills and critical thinking methods, regardless of whether the training is inside or outside the educational institution; thus, trainers in this field must be sought. (Vaughan, N. D., Cleveland-Innes, M., Garrison, D. R, 2013)

The need for training programs to contain basic modern technological skills, in addition to those related to the educational field, also requires the use of trainers in this field.
Similar teacher training programs should include collaborative activities and provide trainees with the opportunity to participate in activities related to the exchange of experiences with various educational institutions, because it is a type of direct application of the desired skills, especially through learning about the experiences of others.
In addition, one of the most important challenges is ensuring that similar programs can support continuing professional development. (Ratcliffe, 2013)

All previous challenges must be overcome and included in the training programs because they exceed the teacher's professional educational needs to facilitate the learner's attainment of more effective learning outcomes. Each skill that the teacher masters correctly increase his chances of effectively delivering it to the learner.

The researcher emphasized the need for better organization, increased investment, and professional development opportunities based on research and sensitivity to the context in which trainees learn and their professional and individual needs. Therefore, she emphasized that

collaborative learning, internships, and research participation could enhance the quality of professional development and ultimately benefit student learning outcomes.

Opportunities that technological developments and recent innovations can provide to improve the quality and effectiveness of practical training programs for teachers

Josephine Wolff wrote an article discussing the opportunities and challenges created by the use of technology in various aspects of society. From his point of view, the most important of these opportunities and challenges are as follows.

By increasing the complexity of the basics of the various professional fields and facilitating work in them, it is necessary to resort to additional skills related to other fields.

The necessity of monitoring and organizing the information flowing through various means of communication and search engines and rethinking the rules governing the flow of global data.

Emphasizing that technology has two aspects, one is positive and the other is negative, and awareness of the difference between them must be made, which allows positive use of information technology.

The emergence of two streams regarding the impact of the information technology revolution on the future of humans, where the first stream sees it as a tool for human progress and the other sees it as beyond human control. Scholars argue that a purely optimistic or pessimistic view is not sufficient to address the complexities of our relationship with technology.

Modern technological tools have effects and results that cannot always be expected. In particular, some modifications were made to the inputs. Anticipating and understanding the mechanisms of these effects of changing inputs are crucial for making correct and safer decisions.

Control of private sectors and emerging companies in the development of modern technology.

Information technology has become a reason for countries to compete to find innovative updates that enable them to excel and distinguish themselves, and thus control technology politically.

To understand the impact of technology on our lives, we must have knowledge and skills of various technological skills; therefore, by

projecting the data provided by this research and others in the field of education, we find that modern educational technologies might come with the following opportunities that can enhance the quality and effectiveness of practical training programs for teachers:

- Online and blended learning.
- Virtual Simulation and augmented reality.
- Data-driven commentary and analytics.
- Cooperation and communication.
- Personal learning experiences.
- Access to Open Educational Resources (OER): Facilitating teachers' access to various open educational resources enables them to design teaching strategies that include interactive educational plans based on combining traditional and modern teaching methods using various educational technology tools. OER platforms allow teachers to adapt and customize resources to meet their own needs, thus saving time and effort in lesson planning and curriculum development. Access to diverse and updated resources enhances the quality and effectiveness of our internship programs.
- Mobile learning and micro-learning: Through devices that support this type of education, teachers and learners become able to participate online in experiments, events, and educational activities from anywhere the Internet is available, which allows access to special educational applications. This makes modern educational technology suitable and flexible for continuing professional and educational development.

Integrating the skills associated with realizing these technological opportunities into practical training programs will expand access, improve participation, and support teachers' continuing professional growth. Therefore, it is essential to provide appropriate support, resources, and training to ensure that teachers can use these technologies effectively and maximize their potential to enhance hands-on experiences.

These components must be included in the content of practical training programs for teachers according to the technological skills that must be present for teachers and learners at the same time
Both educators and learners require specific technology skills; therefore, practical training programs for educators must encompass these skills. The following components should be included in the content of these programs.

Educators must possess a solid base of digital literacy, encompassing fluency in computer usage, operating systems, and prevalent software applications. It is also imperative that they acquire fundamental technical skills such as Internet navigation, email communication, and file management. This bedrock knowledge empowers teachers to effectively incorporate technology into their instructional methods. (Boudreau, 2020)

To improve learning results, instructors must be educated on the pedagogical integration of technology. Understanding the use of digital tools and resources in teaching techniques is required. Key tactics include selecting appropriate digital tools, devising technology-enhanced classes, and measuring student learning by using technology-based methodologies.
Educators should be trained in various educational technology tools and platforms that can support teaching and learning. It may encompass virtual learning environments, learning management systems, digital content creation tools, collaboration platforms, and educational applications. Training should focus on how to use these technologies successfully to engage students, create interactive learning experiences, and tailor instruction. (Wolff, 2021)

In today's technologically driven world, educators must grasp the concept of digital citizenship and impart knowledge of responsible and ethical technology usage to students. This entails teaching them about online safety, respecting privacy, and behaving courteously on the Internet, as well as developing the skill to critically evaluate digital content. Teachers must be prepared to address digital citizenship concerns and foster a constructive digital environment in the classroom.

To effectively use data generated through technology-based assessments and learning analytics, educators must develop data literacy skills. This includes the ability to interpret and analyze student data to make informed educational decisions and personalize learning experiences. Training should prioritize the use of technical tools for formative and summative assessments, tracking student progress, and delivering timely feedback.
To effectively cater to the varied needs and styles of students, educators should prioritize their knowledge of personalized learning styles and adaptive learning techniques that exploit technology. Their training should emphasize the implementation of adaptive learning platforms, data-guided differentiation, and instructional methods that

facilitate personalized learning experiences. (Vaughan, N. D., Cleveland-Innes, M., Garrison, D. R, 2013)

Educators must understand various digital technologies to promote cooperation within the education community. Video conferencing, online debates, document sharing, and educational social media are some examples of this. Facilitating successful online collaboration and communication is critical for educators seeking to increase learners, instructors, and parents' involvement and engagement.

In the realm of educational technology, practical training programs must emphasize lifelong learning and professional growth. Educators should be encouraged to continually improve their knowledge and understanding of developing technologies, pedagogical approaches, and successful strategies for incorporating technology into their education. Resources and opportunities for continual professional development in the use of technology in education should be made accessible to support ongoing progress.
Educators will be successfully prepared with important technological abilities if these components are included in the educator training programs. Educators will be able to support the development of 21st-century pupils' abilities by properly incorporating technology into their teaching techniques. As a result, students will be well prepared to succeed in a world dominated by technology. (Wolff, 2021)

Conclusions
Technology has become an integral part of all aspects of life and has significantly impacted the field of education. To keep up with technological changes, teachers must acquire and develop their technological skills through practical training programs. However, these programs face various challenges and obstacles, including a lack of organization and guidance, limited resources, and the need for continuous professional development.
Despite these challenges, there are numerous opportunities for technological development and recent innovations to improve the quality and effectiveness of practical training programs for teachers. These opportunities include online and blended learning, virtual simulation, and augmented reality, data-driven feedback and analytics, collaboration and communication tools, personalized learning experiences, access to open educational resources, mobile learning, and microlearning. By integrating these components into training programs, educators can enhance their teaching methods and engage their students more effectively.

Practical training programs should encompass essential technological skills for both teachers and learners. These skills include digital literacy, pedagogical integration of technology, proficiency in educational technology tools and platforms, an understanding of digital citizenship, data literacy, personalized learning approaches, collaboration and communication skills, and a mindset of lifelong learning.

To maximize the potential of technology in education, it is crucial to address challenges, provide adequate support and resources, and ensure continuous professional development for teachers. By equipping educators with the necessary technological skills and fostering a positive learning environment, practical training programs can empower teachers to create engaging and effective educational experiences that meet student's needs in the ever-changing digital age.

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INNOVATION FOR ALL: UNLEASHING THE POWER OF ASSISTIVE TECHNOLOGY IN SPECIAL EDUCATION IN ARABIC SPEAKING COUNTRIES

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Abstract: *In this study, we look at how special education teachers are increasingly using assistive technology (AT) to help children with disabilities. Our research focuses on the available literature on AT implementation in special education in Arabic-speaking nations. Our analysis includes a look at the advantages, disadvantages, and prospective applications of AT in this setting. The study's findings shed light on a number of major topics that emerge from the literature. For starters, it highlights the importance of personalised and student-centered methods to AT implementation. Recognizing each student's unique needs and abilities means that AT interventions are personalized to optimize their impact. Furthermore, the study emphasizes the vital relevance of providing adequate training and continuous support to both teachers and students who use AT. Adequate training provides educators with the skills and knowledge needed to properly apply AT, while continual support ensures its continued effectiveness in the classroom. Furthermore, the evidence demonstrates AT's tremendous potential to improve outcomes across a wide range of academic and functional areas. Students can overcome barriers, learn key skills, and actively participate in their educational path by utilizing AT technologies. Finally, this paper explores the implications of these findings for future special education research and practice. The findings of the literature study serve as a platform for future research and show the importance of continuing to investigate the influence of AT on students with disabilities in Arabic-speaking nations. This study adds to the growing body of knowledge about assistive technology in special education, particularly in Arabic-speaking countries. It is a great resource for educators, policymakers, and researchers, emphasizing the significance of student-centered approaches, training, and the potential of AT to improve results for students with disabilities.*

Introduction

Assistive technology (AT, hereafter) has become an increasingly important tool in the field of special education for meeting the needs of students with disabilities. AT includes things like computers, tablets, and cell phones that disabled individuals use to help them carry out their daily activities (Cook & Hussey, 2002). The use of AT in special education is beneficial for students with a wide range of disabilities, including those related to mobility, cognition, sensory processing, and language (Bryant & Bryant, 2003). The purpose of this study is to take a comprehensive look at the present state of research on AT in special education, covering its benefits, drawbacks, and applications.

The introduction of AT into special education has been shown to be beneficial for students with disabilities in a variety of ways. A significant benefit of AT is its ability to encourage the development of cognitive and motor skills (Beukelman, 2008). Students with disabilities who use AT show gains in reading, writing, and communication (Cress & Chen, 2015). For students with disabilities to succeed in the long run, they must learn to work with others, advocate for themselves, and be self-sufficient, all of which can be facilitated by the use of AT (Furniss & Biswas, 2012). Students with impairments have the extra benefit of being able to fully engage in general education courses because to the use of AT in special education (McCarthy, 2013). By providing students with disabilities access to the same educational opportunities as their typically developing peers, AT can aid in reducing the achievement gap between students with and without disabilities.

While the use of AT in special education has the potential to yield many benefits, there are also many challenges that must be surmounted. Because of the need for tailored and student-cantered approaches, AT implementation can be challenging (Bryant & Bryant, 2003). To ensure that each student receives the most beneficial AT solutions, educators must work closely with students and their families. One barrier to AT's widespread adoption in special education is the lack of consistent funding for it (Cook & Hussey, 2002). Teachers need training on how to integrate AT into their curriculum effectively. Students also need guidance on how to effectively advocate for themselves and use AT on their own.

Review of major literature in general
The research literature documents both the benefits of AT for students with disabilities and its drawbacks in the classroom. Customized technologies have been shown to aid this student demographic by Angelo (2000) and others by piquing their interest in learning and providing them with additional support. In their research, Murray and Rabiner (2014) found that students who used AT reported greater gains in knowledge and skills. Additionally, they aid students with disabilities in performing tasks that would otherwise be difficult (Sullivan & Lewis, 2000). Nelson et al. (2013), on the other hand, investigated ways to improve students' intellectual and language development. Multimedia AT (MAT) was found to improve academic achievement in a study conducted by Howard-Bostic et al. (2015). NcNicholl et al. (2019) conducted a systematic review of the use of AT by college students with disabilities and found four main themes: AT as a facilitator of academic engagement; barriers to effective AT use can hinder academic participation; the transformative possibilities of AT from a psychological perspective; and AT as a facilitator of participation. The potential benefits of AT for students with disabilities in terms of enhanced social acceptance and less stigma are similarly concluded by De Witte et al. (2018) and Asongu et al. (2019).

Byrd and Leon (2017) identified three main barriers that prevent students with disabilities from being approached and involved in the use of so-called tailored ATs: First, there is a lack of accessible technology for students with disabilities. The high cost of AT and the unpredictability of its funding both function as barriers to the provision of AT to students with disabilities. Third, not enough teaching is given on how to use digital tools and resources, which is a major barrier for students with impairments. Some limitations on their application in special education were noted by Copley and Ziviani (2004). Among these are insufficient funds, problems with equipment management, a lack of time, teachers' bad attitudes, and inadequate assessment and planning procedures. Murray and Rabiner (2014) and Howard-Bostic et al. (2015), among others, highlight the problem of inadequate training for educators on the use of AT.

Potential Applications of AT in Special Education
When discussing the educational needs of pupils who have some kind of impairment, the term "special education" is typically used. The program's overarching goal is to help these students grow intellectually, socially, and emotionally by giving them a tailor-made education. The field of special education research is expanding, with

recent studies looking at topics including the function of evaluation in shaping lessons and the effects of technology in the classroom. The application of Universal Design for Learning (UDL) principles, as demonstrated by the research of Rose and Meyer (2002), can increase the accessibility of educational materials for students with disabilities, hence improving their academic performance. Wiener and Dobler (2007) conducted research on the role of technology in special education and found that assistive technologies like text-to-speech software and voice recognition technology are helpful for students with impairments. Studies on the application of individualized teaching in special education have yielded positive results, showing that it can be an effective method for catering to the wide range of demands that students with disabilities have (Tomlinson, 1999). When it comes to assessment, Thurlow, Ysseldyke, and Moch (2002) discovered that using assessment data to influence instructional decision-making and boost students with disabilities' academic outcomes.

There is great promise for AT to promote the learning and development of students with disabilities across a wide range of academic and functional domains, despite the limitations connected with its implementation. Literacy, numeracy, and even executive function can all benefit from the use of AT (Cress & Chen, 2015). Self-advocacy, social skills, and independent living can all benefit from the use of AT. The use of AT into special education programs with the goal of enhancing children' academic performance has gained popularity in recent years. Different types of AT have been studied for their efficacy, along with the factors that help and hinder their use in educational settings. The study of how students with disabilities might benefit from mobile technology and apps is an exciting new topic. Johnston and coworkers (2012), for instance, discovered that iPads helped autistic youngsters with speech and attention. Another study that demonstrated an iPad software to be helpful in enhancing social communication skills in autistic children was conducted by Hume and colleagues in 2013.

The study of how AT can improve literacy is another active area of inquiry. Reading comprehension and fluency were found to be enhanced when students with reading challenges used text-to-speech software, according to research by Arndt and colleagues (2015). Students with dyslexia who used dictation software had greater gains in writing ability, according to research by Fidalgo and colleagues (2019). The benefits and drawbacks of implementing AT in classrooms have also been studied. According to research by Okolo and colleagues

(2012), a lack of knowledge and training among educators is a significant barrier to the widespread use of AT. Choi et al. (2018), on the other hand, discovered that teacher training and support aided in the adoption of AT in schools. Recent studies have shown that AT can be a useful tool for helping students with disabilities succeed in school. To guarantee successful implementation, however, AT in schools may require supplementary teacher assistance and training.

The use of virtual and augmented reality as AT in special education is another field of study. Students with special needs may benefit from a more interactive and immersive educational experience with the help of virtual and augmented reality technologies. Researchers Anderson and colleagues (2018) showed that autistic pupils' spatial skills and problem-solving abilities improved with VR training. It has been shown that students with disabilities who use AT see positive changes in their social and emotional well-being as well as their academic performance. Zhang (2017) reported that social robots helped autistic youngsters with their communication and emotional development. Ramdoss et al. (2011) discovered that video self-modelling intervention helped students with disabilities become more socially and communicatively adept. Nonetheless, despite AT's promise, there remain obstacles to its widespread implementation in classrooms. According to research by Zainuddin and Perera (2018), a lack of money is a significant impediment to the widespread implementation of AT in educational settings. Vasa et al. (2018) also discovered that further research is needed to determine which AT solutions are most helpful for people with different types of disability.

Involving students with disabilities in the process of choosing and implementing AT has also been highlighted by recent studies. Students' happiness and use of AT improved when they were included in the decision-making process, according to research by Wu et al. (2019). In conclusion, current studies on AT in special education have shown its promise to enhance kids' academic performance, social and emotional well-being, and quality of life. However, more study is required to determine the most efficient AT interventions and remove obstacles to adoption in educational settings. Students with disabilities can benefit the most from AT if they are actively involved in the process of choosing and implementing this tool.

AT In Middle Eastern Countries
Few studies have been conducted on the topic of AT in special education in the Arab world, but this is beginning to change. Alshehri

and Alzahrani (2019) conducted research to better understand how educators in Saudi Arabia feel about using AT. The study indicated that while educators generally viewed AT favourably, barriers to its widespread implementation existed, notably a dearth of appropriate training and funding. Al-Saggaf et al. (2016) conducted research into how students in Saudi Arabia with visual impairments make use of assistive technologies. Students with visual impairments who used assistive technologies like screen reading software showed significant gains in reading and writing ability, according to the study.

Alghamdi et al. (2018) looked at how students with learning difficulties in the United Arab Emirates make use of assistive technologies. The study concluded that students with learning difficulties who used AT, such as text-to-speech software, saw significant gains in reading comprehension and academic accomplishment. Despite the obvious advantages, the Arab world faces challenges when it comes to embracing AT. Some of these are things like not enough money or knowledge about AT. Evidence suggests that the use of AT in special education can be successful in enhancing learning outcomes for children with disabilities, although research on its usage in the Arab world is currently scarce. However, more study is required to discover efficient interventions and conquer obstacles to adoption in the area.

There have been a number of reports on the effectiveness of incorporating AAC into special education in Saudi Arabia in recent years. Students in Saudi Arabia who have learning problems are the focus of a study by Al-Azawi et al. (2018). Reading comprehension and academic performance were found to improve significantly for children with learning difficulties who used assistive technologies such as electronic dictionaries and text-to-speech software. Al-Gahtani, et al. (2016) conducted research on the use of mobile apps for students with autism in Saudi Arabia. Researchers found that teaching autistic pupils to use mobile apps like "social stories" and "communication apps" improved their ability to interact with others.

Despite the obvious advantages, there are still barriers to the widespread use of AT in Saudi Arabia. According to research conducted by Alshehri and Alzahrani (2019), educators in Saudi Arabia confront numerous challenges when it comes to implementing AT. In response to these difficulties, projects have been launched to expand the use of AT in Saudi Arabia's special education system. The Saudi Ministry of Education, for instance, has initiated a number of

programs to equip educators with knowledge and tools to implement AT in the classroom. A lot more work needs to be done to remove obstacles to the use of AT, but there is evidence that it can help students with disabilities in Saudi Arabia learn more effectively. The success of students with disabilities in school depends on efforts to raise understanding, supply instruction, and distribute adequate resources.

Alkharusi and Al-Tobi (2019) conducted research into the same topic but in the neighbouring country of Oman, where many pupils with visual impairments attend school. Students with visual impairments were found to benefit from the use of AT like screen readers and magnifiers, according to the study. The use of AT in Omani special education for students with intellectual disabilities was also studied by Al-Said and Al-Abri (2018). Students with intellectual disabilities were found to benefit from the usage of AT, such as augmentative and alternative communication devices, in terms of their ability to communicate and interact with others. Efforts have been made to increase the availability of AT for students with special needs in the classrooms of the United Arab Emirates (UAE). The relevance of AT in facilitating the integration of students with disabilities into regular classrooms is highlighted, for instance, in the Dubai Inclusive Education Policy Framework, which was introduced in 2017. Alghazo et al. (2018) conducted research into the integration of AT into UAE special education for kids with impairments. Researchers found that students with impairments who used assistive technologies like screen readers and voice recognition software had significant gains in both academic performance and autonomy. In the United Arab Emirates (UAE), Saudi Arabia, and Oman, there is a growing body of literature on the application of AT in the field of special education. Although there are barriers to the widespread use of AT in education, it is crucial that students with disabilities have access to the devices they need to be successful.

AT in Egypt
Several recent Egyptian studies have examined the utility and efficacy of AT tools and services in inclusive and specialized classrooms. One major takeaway from this research is that the implementation of AT in Egypt's special education sector is still in its infancy and faces numerous obstacles. Educators' and parents' lack of familiarity with the benefits of AT, the scarcity of appropriate devices and services, and the inability to secure adequate money all work against its widespread implementation in Egypt's special education system (Abd El-Ghaffar et

al. 2019). Elgendy (2018) came to a similar conclusion: inadequate teacher preparation is a major barrier to the successful integration of AT into Egypt's special education system.

Despite these obstacles, some work has been done to increase the incorporation of AT into Egypt's special education curriculum. Special education students in Egypt, for instance, can now access AT equipment and services thanks to a new initiative by the country's Ministry of Education and Technical Education (Ministry of Education and Technical Education, 2021). Educators and officials in Egypt are also becoming increasingly interested in AT's potential to expand opportunities for students with impairments (Elgendy, 2018). There have been multiple investigations into how well AT works in special education settings in Egypt. Research by Elhussein et al. (2019), for instance, demonstrated that AT interventions can improve the academic performance and engagement of students with visual impairments in Egypt's mathematics classroom. Students with autism spectrum disorder (ASD) in Egypt's special education settings can benefit from the usage of AT devices and services, according to research by Elwahsh et al. (2018).

Despite the studies' encouraging results, more investigation into AT's utility and efficacy in Egypt's special education context is clearly warranted. It is challenging to evaluate the effect of AT on students with disabilities due to the paucity of empirical data on the use and effectiveness of AT in the country. More research on the efficacy of AT and the identification of best practices for using AT in different settings was called for by Elgendy (2018). Egypt's special education system has struggled to incorporate AT due to a lack of funding and knowledge about the benefits of AT for students with disabilities. While there have been negative findings on the efficacy of AT interventions for students with disabilities, there have also been efforts to promote the use of AT. More study is required to assess the effectiveness of AT on students with disabilities and to determine the most effective ways to implement AT in a variety of Egyptian educational contexts. To improve the usage and efficacy of AT in special education in Egypt, it is crucial that instructors obtain training and support in how to use the technology effectively.

AT in Jordan
Over the past decade, there has been a growing demand for AT in Jordan, prompting researchers to examine the effectiveness of AT interventions in the country's special education institutions. These

studies have found, among other things, that the implementation of AT in special education in Jordan is still in its early stages and confronts a number of obstacles. The lack of money for AT programs, the restricted availability of AT devices and services, and the lack of awareness and knowledge among educators and parents are just some of the obstacles to the use of AT in special education in Jordan (Abu-Hamour & Abu-Saad, 2016). Al-Sa'di (2018) came to a similar conclusion, stating that inadequate training and support for teachers using AT is a major barrier to the successful implementation of AT treatments in special education in Jordan. Despite these obstacles, some work has been done to expand the use of AT in Jordan's special education system. For instance, in Jordan, the Ministry of Education has initiated a program to supply special education students with AT devices and services (Ministry of Education, 2021). Educators and politicians in Jordan have also shown a growing interest in AT as a means of expanding opportunities for children with impairments to participate fully in the classroom setting (Al-Sa'di, 2018).

Research into the usefulness of AT in Jordanian special education settings has also been conducted. Studying the role of AT in the literacy development of students with dyslexia in Jordan, Al-Taani (2018) discovered that AT interventions can improve students' reading and writing skills. Similarly, Abu-Rmaileh and Abu-Zhaya (2019) discovered that students with autism spectrum disorder (ASD) in special education settings in Jordan benefited from the incorporation of AT devices and services into their daily routines. Despite these encouraging results, the studies also show that more investigation into AT and its effectiveness in Jordanian special education settings is needed. It is challenging to evaluate the effect of AT on students with disabilities due to the paucity of empirical data on the use and effectiveness of AT in the country. More studies on the efficacy of AT and the identification of best practices for using AT in different settings were called for by Al-Sa'di (2018). Several obstacles have impeded the implementation of AT in special education in Jordan, including a dearth of funding and a general lack of understanding on the part of teachers and parents. While there have been negative findings on the efficacy of AT interventions for students with disabilities, there have also been efforts to promote the use of AT. The effectiveness of AT for disabled students and the identification of best practices for its use in various settings in Jordan need for more study. To improve the usage and efficacy of AT in special education in Jordan, it is crucial that instructors receive training and support in how to use the technology effectively.

AT in Yemen

As a result of being one of the region's poorest countries, special education in Yemen has had limited access to AT. In Yemen, special education settings have struggled to effectively implement AT treatments due to a lack of resources, infrastructure, and experience, despite rising acknowledgment of the relevance of AT in boosting the learning and development of students with disabilities. Only a small number of studies have looked at where AT stands in special education in Yemen right now. In Yemen, Al-Sakkaf (2017) surveyed special education teachers to gauge their level of familiarity with and understanding of AT. The survey indicated that while most educators were familiar with the concept of AT, their understanding of its many forms and uses was limited. The study also emphasized the difficulties special education instructors in Yemen face in implementing AT interventions due to a lack of resources and training opportunities. The views and opinions of Yemeni parents of disabled children about AT were also investigated in a study by Al-Worafi et al. (2019). The study revealed that parents in Yemen knew very little about AT and its benefits, and that there were substantial financial hurdles to gaining access to AT devices and services. The research also showed that more education and training programs for parents and caregivers are needed to help them make the best use of AT.

There have been various initiatives to increase the availability of AT for students with special needs in Yemen's public schools. One such partnership is between the World Health Organization (WHO) and the Ministry of Education in Yemen to promote the use of AT in special education and to offer related training and resources (WHO, 2021). While the ongoing conflict in Yemen has limited the reach of these programs, some non-governmental organizations (NGOs) have provided AT devices and services to children with disabilities. A lack of funding, facilities, and trained professionals hinders the implementation of AT in special education in Yemen. The continuous violence in the country has also made it more challenging to give the required assistance and services to children with disabilities. Some efforts, however, are being made to spread the word about AT and raise awareness among teachers, parents, and other caretakers. There needs to be more investigation on the efficacy of these interventions and the best ways to implement AT in the specific setting of Yemen.

AT in Qatar, Kuwait and Iraq

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In Qatar, Kuwait, and Iraq, there is a dearth of studies examining the role of AT in special education. However, a number of studies have highlighted both the obstacles and possibilities associated with AT's widespread adoption in these nations. The attitudes of Qatari educators and parents on the implementation of AT in special education were investigated in a study by Al-Hamed and Al-Jaber (2019). The research showed that both educators and parents understood the value of AT in helping students with disabilities learn. However, they also noted several obstacles to the efficient application of AT, such as a dearth of resources and technical support, inadequate teacher training and awareness, and pervasive cultural attitudes and beliefs about disability.

Aljassar et al. (2021) conducted research in Kuwait to find out how students with visual impairments use AT to help them succeed in school. Researchers showed that students who used AT like screen readers and braille displays had dramatic gains in their academic performance. However, the study also highlighted the difficulties students and teachers face in gaining access to and using AT devices, such as the high cost of devices and the lack of readily available technical support. Al-Bayati et al. (2019) conducted research in Iraq to explore the barriers and benefits of incorporating AT into special education. The research uncovered a number of barriers, such as inadequate money and resources, a lack of proper regulations and guidelines for the use of AT in special education, and a lack of awareness and expertise about AT among teachers and parents. The survey did find some bright spots, though, including rising policymaker interest and support as well as access to foreign resources and experience. Overall, the scant study into AT's usage in special education in Qatar, Kuwait, and Iraq reveals that, while there are chances for the effective implementation of AT, there are also substantial problems that must be addressed. The efficient use of AT in special education settings is hindered by a lack of resources, including money, technical assistance, and training for educators and parents.

AT in Saudi Arabia
A brief summary of AT's application in Saudi Arabia is provided by Al-Ateeq and Al-Beeshi (2019). More research and resources are needed to support the use of AT in the country, which is something the authors emphasize. Although it's informative, the article doesn't delve deeply into the benefits and drawbacks of implementing AT in Saudi Arabia. Children in Saudi Arabia who have autism spectrum disorder (ASD) were the focus of a scoping review by Alahmadi et al. (2021). Based on their findings, the authors argue that more research and

resources are needed to effectively employ AT with children who have ASD. The essay sheds light on the difficulties children with ASD have in gaining access to AT in Saudi Arabia, however it solely addresses this particular impairment.

Students with impairments in Saudi Arabia have access to a comprehensive overview from Al Sobhi and Ahmad (2020). The authors emphasize the positive effects of AT on pupils' academic performance and social integration. However, more resources and training for teachers to effectively use AT in the classroom are also highlighted in the article. Insights into the current level of AT use in special education in Saudi Arabia are provided in this article; however, the article does not include an analysis of the obstacles and potential benefits of adopting AT in the country. Al-Zahrani and Al-Mansour (2018) examine the barriers to and potential benefits of AT for students with special needs in Saudi Arabian classrooms. While there is a growing recognition of the importance of AT in the United States, the authors argue that there are still significant challenges that must be addressed. These include a lack of resources, a lack of awareness among educators and families, and a lack of training and support for using AT. In this essay, we take a close look at the current condition of AT in Saudi Arabia's special education system and highlight crucial areas for development. You can learn more about the government's initiatives to promote the use of AT in special education on the website of the Ministry of Education Saudi Arabia (2021). The website emphasizes the government's dedication to supplying kids with disabilities with AT devices and services, as well as providing teachers and families with training and assistance. The webpage is helpful, but it doesn't go into detail on the benefits and drawbacks of adopting AT in Saudi Arabia's special education system. The results of these research shed new light on the accessibility technology landscape in Saudi Arabia. Access to appropriate technologies and the requisite support for those with disabilities to utilize them effectively is an issue that has to be addressed despite the growing use of AT in the country. Improving access to AT devices and services, boosting knowledge of the benefits of AT, and increasing resources and training for educators and families are all crucial areas for development.

Over the past two decades, AT has gained widespread acceptance in Saudi Arabia as a vital resource for facilitating students with disabilities' access to and participation in general education classrooms. Researchers have looked into the usefulness of AT tools and services in a variety of special education settings around the country. These

studies have found, among other things, that the availability and implementation of AT in special education settings in Saudi Arabia remain problematic areas for improvement. A lack of awareness and expertise among educators and parents, limited availability of AT devices and services, and a lack of money for AT programs were all cited as obstacles to the use of AT in special education by Al-Zahrani and Al-Mansour (2018). These findings were repeated by Al-Ateeq and Al-Beeshi (2019), who pointed out that a lack of skilled personnel and scarce resources pose serious obstacles to the efficient implementation of AT in special education in the country. Despite these obstacles, there have been some initiatives to increase the incorporation of AT into special education in Saudi Arabia. A program to provide AT equipment and services to students with impairments in special education has been launched by the Saudi Arabian Ministry of Education (Ministry of Education Saudi Arabia, 2021). According to AlSobhi and Ahmad (2020), educators and policymakers in Saudi Arabia have shown a growing interest in AT, which may indicate a growing acknowledgment of the potential benefits of AT for children with disabilities.

There have been multiple investigations into AT's usefulness in Saudi Arabia's special education programs. A scoping review of the literature on AT for children with autism spectrum disorder (ASD) in Saudi Arabia by Alahmadi et al. (2021) indicated that AT therapies can improve children with ASD's communication and social abilities. Based on their comprehensive assessment of research on AT for students with disabilities in Saudi Arabia, AlSobhi and Ahmad (2020) concluded that AT has the potential to boost students' academic and social performance. Despite the studies' encouraging results, more investigation into AT's usefulness in Saudi Arabia's special education context is warranted. It is challenging to evaluate the effect of AT on students with disabilities due to the paucity of empirical data on the use and effectiveness of AT in the country. More studies, according to Al-Ateeq and Al-Beeshi (2019), are needed to determine the efficacy of various forms of AT and to determine best practices for their application in various contexts.

In addition, the studies analyzed indicate that teachers and other special education professionals could benefit from additional training and professional development in order to make the best possible use of AT in the classroom. According to Al-Zahrani and Al-Mansour (2018), many Saudi Arabian teachers aren't properly trained on how to use AT devices and services, which hinders their capacity to effectively

integrate AT into their classrooms. AlSobhi and Ahmad (2020) came to a similar conclusion, observing that many Saudi Arabian educators struggle with AT owing to a deficiency of training and assistance. Therefore, it is crucial that special education teachers be given the resources they need to learn how to incorporate AT into their lessons. This includes instruction in the use of AT devices and services, as well as guidance on how to most effectively incorporate AT into classroom instruction. Teachers' familiarity and comfort using AT for students with special needs can be improved by participation in workshops and other professional development opportunities.

Educators, policymakers, and researchers are all key players in the field of special education, and the evaluated papers highlight the importance of working together. When discussing the barriers to AT use in special education in Saudi Arabia, Al-Ateeq and Al-Beeshi (2019) stressed the importance of collaboration between various stakeholders. Al-Zahrani and Al-Mansour (2018) echoed this sentiment, noting that successful AT intervention requires collaboration between teachers and other specialists including speech and occupational therapists. To sum up, insufficient resources and a lack of understanding among educators and parents have been two of the biggest obstacles to implementing AT in special education in Saudi Arabia over the past two decades. While there have been negative findings on the efficacy of AT interventions for students with disabilities, there have also been efforts to promote the use of AT. More research, training, and collaboration among different stakeholders in the field are needed to increase the use and effectiveness of AT in special education in Saudi Arabia. These initiatives have the potential to boost the educational and social outcomes for students with disabilities by increasing their access to and participation in mainstream classrooms.

AT in Oman
The role of AT in facilitating the education of students with disabilities in Oman has grown significantly in recent years. The government of Oman has taken action to increase both access to and understanding of AT. However, more study and funding are required to fully implement AT in Oman's special education system. The dearth of study and awareness on the problem was observed in a review of the literature on AT use in special education in Oman by Al-Mahrooqi et al. (2022). To better understand the current state of AT use and to identify the gaps and difficulties that need to be addressed, they suggested conducting additional research.

Despite the obstacles, Oman has seen some positive results with the use of AT in special education. For instance, Al-Mahrooqi et al. (2021) discovered that students with learning difficulties in Oman benefited greatly from the implementation of AT. They advocated for training and assistance for both instructors and students, as well as the use of assistive software and hardware to facilitate education. However, special education teachers still face obstacles when trying to incorporate AT into their lessons. According to Al-Harthy (2019), a scarcity of AT devices and inadequate training and support for educators were two of the biggest obstacles to adoption. They advocated for the necessity of further training and assistance, as well as the creation of policies and guidelines to facilitate the use of AT in special education. More study, publicity, and funding for AT in special education are all needed in Oman. Access to and use of AT in special education in Oman could benefit from the establishment of laws and guidelines, as well as from increased training and support for teachers and students.

AT in the UAE
Students with disabilities can benefit greatly from AT in the classroom since it allows them to overcome obstacles and reach their full potential. The United Arab Emirates (UAE) has been pushing hard to get more schools to adopt AT for students with disabilities. The current landscape of AT in special education in the United Arab Emirates will be analysed critically, along with the potential and obstacles that exist in this subject. The government of the United Arab Emirates (UAE) has made many measures to promote the use of AT in the classroom. For instance, the 2017 Dubai Inclusive Education Policy Framework aspires to create a fully accessible and inclusive educational environment for all students, including those with special needs. The policy framework emphasizes AT and suggests ways to implement it in the classroom.

Several groups in the UAE advocate for the inclusion of AT in special education, complementing the efforts of the government. For instance, the Abu Dhabi Rehabilitation Centre (ADRC) offers evaluations of AT and training for parents and educators of disabled children (Abu Dhabi Rehabilitation Centre, n.d.). Support for students with ASD can also be found through the Dubai Autism Centre (DAC) in the form of through services and resources (Dubai Autism Centre, n.d.). Despite these gains, several obstacles remain in the way of AT's usefulness in UAE special education. The widespread lack of knowledge and

understanding among teachers and parents is a significant barrier. Sulaiman, et al. (2020) found that many teachers lacked knowledge about accessible technology and its successful use in the classroom. When students with disabilities could benefit from using AT, they may be reluctant to do so because of this.

The restricted supply of AT in the UAE is another difficulty. Some groups and service providers do offer AT evaluations and instruction, but the selection may be limited or the costs too high for some people (Alqahtani et al. 2021). Because of this, schools and families may be hampered in their efforts to gain access to and benefit from AT. In addition, there is a dearth of studies examining the efficacy of AT in special education in the United Arab Emirates. While there are studies of AT's application elsewhere, more studies tailored to the UAE are needed (Sulaiman et al. 2020). This would aid in determining how best to employ AT tools and practices for students with disabilities in the UAE classroom. Despite these obstacles, however, the UAE presents an opportunity to successfully implement AT in special education. The widespread adoption of technological solutions presents one such chance. Increased access to online education and digital resources in the UAE as a result of the COVID-19 epidemic may open up fresh avenues for the implementation of AT (Alqahtani et al. 2021).

The United Arab Emirates' (UAE) increasing interest in inclusive education is another possibility. For instance, the Dubai Inclusive Education Policy Framework (2017) argues that all students, regardless of their background or physical capabilities, deserve access to the same high-quality educational opportunities. Students with disabilities can benefit greatly from using AT in general education settings, and this emphasis on inclusion makes a compelling argument for its usage in special education. Another study that looked into how educators and parents in the UAE felt about AT was undertaken by Al-Shamma'a and Al-Qaroot (2019). Researchers found that educators generally viewed AT favorably and believed it had the potential to improve student learning and classroom inclusiveness. Parents, on the other hand, were more wary and worried about AT's price and availability. Although progress has been made in implementing AT in special education in the UAE, there are still some obstacles that must be removed. Lack of teacher training in the usage of AT is one such issue. Studies have shown that many educators lack the expertise to successfully incorporate AT into their classrooms. Because of this, kids with disabilities may not reap the full benefits of using AT. The price and accessibility of AT also pose a challenge. Many educational facilities

may lack the financial means to purchase AT, despite its obvious benefits. This can lead to disparities in the availability of AT for children with impairments, which in turn can worsen existing educational disparities. To rephrase, AT may prove useful in facilitating the education and growth of students with special needs in the United Arab Emirates. There are prospects for its expansion and integration in the school system, despite various hurdles to its effective usage, such as limited awareness and availability of AT and a lack of research on its usefulness in the UAE environment.

AT in Sudan
Despite some recent progress, AT is still in its infancy in Sudan. In spite of this, there has been some development in recent years regarding the accessibility of AT tools and programs. The government of Sudan has taken measures to increase accessibility to AT for individuals with disabilities as a result of this recognition. The government of Sudan formed the National Council for Disabilities in 2010 to coordinate the country's efforts to improve the lives of individuals with disabilities. In addition to the government, a few of NGOs and private businesses in Sudan offer AT equipment and services. For those who are blind or visually impaired, resources including Braille printers, screen readers, and other AT equipment are available at the Khartoum Centre for the Rehabilitation of the Blind (KCRB) (El-Bashir et al. 2019).

However, substantial obstacles remain in the creation and use of AT in Sudan. According to research by El-Tahir and Hassan (2019), the adoption of AT in Sudan is hindered by a number of factors, including a lack of AT competence among professionals, a scarcity of appropriate devices, and prohibitive costs. Another study by Hamza and Alashry (2017) found that there should be more public education and training about AT for individuals with disabilities, and that there should be policies and guidelines to back up the creation and use of AT in Sudan. Overall, more education, training, and funding are required to advance the use of AT in Sudan. People with disabilities in Sudan need the government, non-governmental organizations (NGOs), and private sector to work together to overcome these obstacles and expand availability of AT and related services.

Countries in Arabic-speaking Africa, such as Tunisia, Palestine, Algeria, and Morocco, are seeing a growth in interest and development of AT. Some literature from the past decade is listed below for your perusal: Mobility aids, hearing aids, and communication aids were

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reported to be the most commonly requested pieces of AT by the respondents of a survey conducted by Ben Slama et al. (2018) in Tunisia. Khemakhem and Karray (2019) dug into the topic of incorporating AT into regular classrooms for intellectually disabled pupils. AT, such as multimedia materials and interactive whiteboards, was found to increase students' participation and engagement in classroom activities for those with intellectual disabilities. Masmoudi et al. (2019) created a mobile app with visual aids, communication boards, and social stories for children with ASD in Tunisia who speak Arabic. According to research by Alareeni et al. (2020), there is a need for education and advocacy, as well as a shortage of resources, which prevents Palestinians with disabilities from making use of AT. In Palestine, a web-based software developed by Khader et al. (2016) was used to successfully treat Arabic-speaking infants with speech sound problems.

Ammor et al. (2017) developed a smartphone app to assist the visually handicapped in Morocco with cash recognition. According to studies conducted by Ennaji et al. (2020), persons with hearing loss in Morocco are primarily using hearing aids and cochlear implants as their primary types of AT. Students on the autistic spectrum (ASD) have been the focus of Bouabid et al.'s (2020) investigation of the efficacy of AT. Students with ASD were found to benefit greatly from AT, such as communication aids and visual timetables, in terms of both increased communication and decreased challenging behaviours.

According to Elzbieta and Abou-Zahra's (2020) survey of web accessibility in Arabic-speaking African countries, few sites make use of the guidelines available to them. Mahamane et al. (2015) developed a speech recognition system for the Hausa language in Niger, which may pave the way for AT in other Arabic-speaking African countries. Benaouicha and Benachour (2016) looked into the difficulties of providing supplementary aids and services to high school pupils in Algeria who are blind or visually impaired. They concluded that the primary obstacles to efficient AT implementation were a lack of funding and insufficient teacher preparation. Despite the growing interest and advancement of AT in Arabic-speaking African countries, significant barriers remain in terms of resources, device availability, expert and public knowledge, and training. More study and teamwork are needed to remove these roadblocks to accessing AT for people with disabilities in these countries.

Conclusion

In conclusion, in Arabic-speaking countries, AT has become an essential component in fostering inclusive education for students with disabilities. Accessible technology has the ability to aid students with disabilities in their academic and social pursuits, despite some obstacles such as limited resources, lack of awareness and training, and problems in identifying acceptable solutions. According to the research that was analysed, numerous Arab-speaking countries have made efforts to incorporate AT into special education. The United Arab Emirates (UAE), Tunisia, and Morocco are just a few examples of countries that have set up centres and programs to offer AT services to students with impairments. Sudan, Palestine, and Egypt are just a few of the countries that have begun including AT in their special education curriculums.

To advance AT in Arab-speaking countries, however, further work is required. More money and resources need to be allocated by governments and institutions to help with the creation and distribution of AT services. Teachers, parents, and students would all benefit from increased familiarity with AT devices and software if awareness campaigns and training programs were put into place. Furthermore, more study is required to examine the efficacy of AT interventions and to determine the best solutions for various disabilities and settings. Finally, it must be stressed that AT is not a replacement for good pedagogical methods or for addressing the underlying causes of disability. Therefore, AT should be incorporated into special education as part of a holistic strategy that also includes early detection and intervention, individualized lesson plans, and fully inclusive classrooms. By taking this stance, Arab-speaking nations may guarantee that its disabled citizens have full participation in and benefit from the educational system. When partners in Arab-speaking nations work together, the future of AT is bright, and the lives of students with disabilities can be greatly improved.

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THE IMPACT OF THE NEW TEACHING STRATEGY ON COMMUNICATION IN THE TEACHING OF NATURE AND SOCIETY

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Abstract: *The interdisciplinary nature and society teaching provides the teacher with many opportunities in the selection and application of different forms and forms of communication during the teaching process. Depending on the content of learning, the goal and tasks of teaching that we plan to accomplish during the lesson, methods and forms of work, we can plan different forms of communication in teaching. In order to be able to talk about the forms of communication in the teaching of nature and society, we must first know what constitutes teaching communication and what are its basic elements. Social changes in the 21st century require new competencies, and a special emphasis is placed on learning to learn, that is, the development of learning strategies that will equip young people for life and enable their further development through lifelong learning. Since communication is a complex, circular process, in order to better understand it, we must analyze its basic components. A simple communication model consists of the source or sender of the message, the message or the content of the message, the channel or medium for transmitting the message, and finally the recipient as the final destination of the communication process. These four components influence each other in such a way that from the content of the message, the recipient or the medium through which the message is sent, we adapt the other components in order to convey the message in the most effective way.*

Key words: *interdisciplinarity, changes, teacher, student, interaction.*

Introduction
Social changes in the 21st century require new competencies (such as interpersonal competences, competences in natural and social sciences, technological competences), and a special emphasis is placed on learning to learn, that is, the development of learning strategies that will equip young people for life and enable their further development through lifelong learning. Accordingly, the educational goals change, as well as the role of teachers and students in the teaching and learning process. Learning and teaching models, created in the last thirty years, such as the models of self-regulated learning, Zimmerman (Zimmerman, 1989), the transactional model of the teaching-learning process Hewitt (Huitt, 2003), the model of interpersonal behavior of teachers Wubbels, Creton and Hoijmeiers (Wubbels, Creton and Hooymayers, 1985) and the like, assume that classroom activities should reflect real (life) learning rather than traditional academic tasks; that competence involves expertise rather than natural ability; that learning is constructive and self-regulating and not reproductive, and a social, cultural and interpersonal process, not just a cognitive one (Shuell, 1996).

In addition, newer models recognize the two-way nature of the teaching-learning process and explore the structure of different cognitive, motivational and social components and their multiplicative interactions in real-life situations Pintrich (Pintrich, 2000), emphasizing that the classroom context becomes crucial for understanding the teaching process and its consequences , that is, the context plays an important role in improving the understanding of what and how the student learns Turner and Meyer (Turner and Meyer, 2000). Jerome Bruner, as one of the leading theorists of constructivism, defines learning as a process in which the student actively constructs and builds new ideas or concepts based on current or previous experience, and the teacher's role in teaching is to encourage students to discover the rules and principles in content they learn by engaging them through appropriate teaching activities Kearsely (Kearsely 1994). It is clear from the above that constructivist learning theories emphasize that interaction is a key component of learning Anderson (Anderson, 2003).

Historically, until the mid-eighties of the last century, the literature on teacher-student interaction mostly dealt with aspects of teaching

Pianta, Hamre and Stuhlman (Pianta, Hamre and Stuhlman, 2003), while in the last thirty years the interest of researchers has shifted towards the relationship between students and teachers. Some earlier work on classroom interaction focused primarily on verbal communication by Flanders (Flanders, 1970, 1974), Giddan, Lovell, Haimson, and Hatton (Giddan, Lovell, Haimson, & Hatton, 1968). The fact is that most of the interactions in the educational process are realized through verbal communication, but the teacher has different roles during the interaction: educational, motivational, evaluative, managerial and social, so interaction is understood as a broader concept than communication. Duran (Duran, 2000) defines communication as "an actual relationship between two or more individuals in which they mutually influence each other." In the literature on education, there is still no precise definition of interaction as a multifaceted concept, but the most accepted definition is offered by Wagner (Wagner, 1994), according to which interaction is "a reciprocal event that requires at least two objects and two actions." Interaction occurs when these objects or events mutually influence each other". In recent times, interaction has been discussed very intensively in the context of distance learning, so three types of interaction are discussed: student-content, student-student and student-teacher Anderson (Anderson, 2003).

Educational communication is a central and important factor in the entire educational process. We define communication as "transmitting a message from one person to another so that they can understand it and, in a discussion, check it and, if necessary, act on it" (Vilotijevic, 1999). "For educational communication, we can say that it occurs as an interaction between two or more people, or one person with an inanimate source, in some process for the purpose of transmitting messages (information, notices) and creating conditions for the optimal (self) realization of a personality" (Matijevic, 2002). In the electronic encyclopedia Wikipedia (Wikipedia), communication is defined as a process that involves the exchange of information and uses a system of symbols to convey messages.

Feedback allows the teacher to assess the quality of his work based on the experience his students have about it. By receiving appropriate feedback, the teacher is able to motivate students to participate more actively in the learning process by encouraging their ideas, suggestions, and questions. Timely feedback enables both students and teachers to timely identify shortcomings in teaching, influence didactic,

methodical and communication skills, and recognize ways to make the teaching process more effective.

Robert Gagne emphasizes that every learning must have feedback if we want it to be complete. The learning and teaching process is a stimulus-response relationship, a communicative relationship between teacher and student in an interactive Jem circle (Yam, 1986).

Learning and teaching processes, that is, the teaching process, is based on mutual communication between teachers and students. Regardless of whether this communication is indirect or direct, verbal or non-verbal, in the teaching process we recognize the basic components of the communication process.

In traditional teaching, we most often meet teachers who give the main speech during the lesson while the students write down and remember what the teacher is talking about. In the modern teaching process, the teacher sees himself as helping students in the process of acquiring knowledge, understanding new ideas and practical application in everyday activities. The results that teachers achieve by communicating with their students in this way are more permanent and of better quality. Teaching aids used by the teacher are an important element in the process of communication in teaching. There is a well-known maxim: "What I hear, I forget; what I see, I remember: what I do, I know." Pictures, posters and practical demonstration of the content affect the improvement of the quality of communication. Using these tools, the teacher graphically and succinctly summarizes the most important facts, presents diagrams or schemes.

Teaching strategies refer to methods, procedures, ways of communicating and implementing actions in the teaching process. In didactics and methodologies, "the strategy includes methods and procedures, that is, the way of activating the participants of the educational process to achieve the tasks of upbringing and education" (Bognar, Matijevic, 2002). In methodology, teaching strategy implies "the teacher's ability to choose a certain methodical solution according to the specific situation, based on his knowledge, experience and assessment of the specific situation, including the student's right to participate in choosing the best strategy in the way that the teacher introduces as the best way to interact with students in continue" (Antic, according to De Zan, 2005). Much depends on the way of communication in class, what kind of learning strategy will be implemented in the class. The greater or lesser activity of students in the process of communication in class determines the results in the

quality and quantity of acquired knowledge. The relationship or level of interaction between the teacher and the students, as well as between the students themselves, also determines the teaching strategy.

In order to create a quality learning and teaching strategy, we must know the possibilities and limitations of all forms of teaching, the ways of achieving communication and the methods used by teachers during the teaching process.

How to create the most effective learning strategies and at the same time use all the advantages of certain forms of communication? In the literature, we find a large number of described techniques that facilitate the learning process and its effectiveness (Matijevic, Bognar, 2002; Matijevic, 1999). Thus, we find that modern teaching models can include: learning by research, learning by playing, learning by discovery, learning by solving problems, experiential learning. Each of these models provides a framework for teaching through communication in different ways.

Certain strategies are more suitable for working with a larger group, while certain learning strategies are more suitable for working in a group, pair or individually. (Matijevic, 1999) gives the following classification of strategies depending on the size of the group being worked with:

- Frontal form of work with a large number of students: oral presentation, demonstration with exercises, discussion, discussion, questions with agreements, video.

- Work in groups of five to ten students: seminar, workshop, game, brainstorming, "buzz" of groups, excursion, role playing, "breaking the ice", simulation, case study.

- Individual form of work: creating projects, tutoring (mentoring), open learning, i.e. distance learning.

This author also enumerates the criteria needed for choosing the appropriate learning strategy, namely: educational and educational goals, nature of the learning content, students' psychophysical characteristics and previous experiences, geographical location of the school, economic conditions, teacher's attitudes and competence.

The interdisciplinary nature and society teaching provides the teacher with many opportunities in the selection and application of different

forms and forms of communication during the teaching process. Depending on the content of learning, the goal and tasks of teaching that we plan to accomplish during the lesson, methods and forms of work, we can plan different forms of communication in teaching.

Depending on the teaching content and type of lesson, communication in the nature and society lesson can take place in several ways. Most often, communication takes place between teachers and students or between students themselves. Certain forms of teaching work and methods we use in a certain class form a framework in which certain forms of communication appear. Also, the way in which we communicate in class largely depends on which form of work or method we will use. These elements of the teaching process are interdependent and appear as a whole.

Communication in the teaching of nature and society does not differ in many ways from the way of communication in classes of other subjects. There are certain specificities, which to the greatest extent are related to the diversity of objects in which we can realize the teaching of nature and society, and they have an impact on the way communication is achieved.

In the literature, we come across numerous types of communication that differ according to classification criteria, and which depend on the number of participants in the communication process, the media that participate in that process, etc.

Bognar and Matijević (2002) talk about intrapersonal, personal and apersonal, then verbal and non-verbal, personal and apersonal, one-way and two-way, immediate, telecommunication, authoritarian and democratic communication. They also mention mentoring, multimedia, visual, computer communication.

Communication in the frontal form of work
The main feature of the frontal form of work is the work of one teacher with a large number of students. The teacher addresses the entire class at the same time, presents the same material, interprets, explains, demonstrates to everyone at the same time. He asks questions to everyone in the class, and the student who answers does so in front of the whole class (Vilotijevic, 1999). The teacher is mostly active, while the students are passive recipients of the teaching content. This kind of direct contact requires immediate, interpersonal communication that takes place in the teacher-student relationship. Communication is most often achieved verbally, which is certainly followed by non-verbal

communication. "One-way communication dominates, only occasionally supplemented by conversation or students' non-verbal feedback to the teacher about how much they understand him or how motivated they are to carefully follow his presentation" (Bognar, Matijevic, 2002). Prodanović and Ničković (1974) point out the occurrence of didactic diffusion in contact and communication between teachers and students as a negative feature of the frontal or, as they call it, collective form of teaching work. Contact and communication in the collective form of teaching work is characterized by their significantly more extensive than intensive development.

The biggest disadvantage of this form of work is that communication, which is realized in classes where the frontal form of work is applied, is usually one-way, in the direction from the teacher to the student, and often authoritarian. In this way, the student is mentally and verbally passive and a feeling of inferiority is imposed on him. During the lesson, cooperation between students is not recommended, but each student does the task on his own. Intrapersonal communication also appears in this form of work, where communication takes place within the student himself. In the frontal form of work, communication is not achieved in an equal way between the participants in the teaching process. There is a lack of timely feedback, the activity and motivation of students are reduced to a minimum, as well as the development of speaking skills and the power of observation.

The frontal form of teaching and communication that is realized within this kind of organization of the teaching process is related to traditional teaching according to Comenius' paradigm. This form of work still prevails in our schools after three centuries.   The general communication model is presented most often as a circle that ends with feedback (Vilotijevic, 1999).

Communication in group form of work
The group form of teaching work arises as a result of the desire to overcome the shortcomings of the frontal form of work, which are the small thinking activity of students and inadequate feedback. "Students' group work represents a social form of work that is characterized by internal dynamics and didactic values." This social form of work makes it possible to remove some of the shortcomings of students' frontal work: greater opportunities for students to communicate, certain opportunities to respect individual differences among students, and the development of some positive personality characteristics (cooperation,

acceptance of interlocutors, culture of dialogue, punctuality, independence, etc.)" (Bognar, Matijevic, 2002).

In the course of the lesson in which we apply the group form of work, depending on the phase of the lesson, we will notice different ways of communicating. Articulation of the class of group form of teaching is suggested by many didacticists in a similar way:

- In the introductory part of the class, which is characterized by frontal organization of the class (Vilotijevic, 1999), the teacher gives notes about the content to be worked on in groups, an agreement is made and work tasks are taken over (Bognar, Matijevic, 2002). After that, the teacher forms groups in which students will work. In this part of the class, the teacher's verbal, direct communication with the whole class dominates, interpersonal and most often one-way if the students do not ask questions related to the content of the work or the organization of groups. The monologue method dominates because the teacher addresses the students, as well as the writing method if the teacher writes down the tasks for the groups on the blackboard.

The next part of the lesson is characterized by group work in which students solve the task without the direct help of the teacher. "The group is an organizationally closed community that does not have permanent direct work contact with the teacher, but discontinuous communication. That is why this form is classified as direct teaching" (Prodanovic, Nickovic, 1974). Depending on the size of the group, the quality of the achieved communication of the group members also depends. Didactics most often recommend groups of 3 to 6 or 5 to 7 students. "It is reliable that richer communication will occur in a group of three members than in a group of six members" (Bognar, Matijevic, 2002). However, Mori (1959) believes that a group of three students is unacceptably small, motivation in a small group is at a lower level, the spirit of competition is less present. He points out the advantages of a group of four members, where such a group is easily mobile, communication between group members is easier. When working on a joint task, students in the group communicate with each other verbally and non-verbally, directly and two-way. In groups that function without rivalry between members, symmetrical communication is realized, and where group members do not feel equality, asymmetrical interaction is realized. One member of the group, usually the leader of the group, assumes a dominant role and communication in the group is reduced to a minimum.

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Communication in pair work

Work in pairs is a form of teaching work in which two students participate in the creation of the same task. "Activities in pairs achieve much more intense communication than in larger groups of students." There, both members must participate in the conversation, that is, they oppose their opinions. Introverted students more easily decide to tell their thinking to another student than to the teacher" (Bognar, Matijevic, 2002). In order for the work in pairs to lead to the expected results, it is necessary for the students to achieve good communication. This implies that they "express their opinion openly, respect their partner's opinion, prove their thesis, do not get angry with their partner, but respect and listen carefully" (Vilotijevic, 1999). Communication between students in pairs is interpersonal, two-way, immediate, verbal. If the pair is not made up of students of equal abilities, there may be asymmetry in communication where the better student will take the lead and the weaker student will withdraw from the work. Ničković and Prodanović (1974) call this phenomenon "the tyranny of the superior partner". Research has proven that students achieve better results by working in pairs than by working individually. This effect is achieved thanks to "plus communication", which Stevanović (2004) describes as communication in which the result is greater than the investment or the output is greater than the input.

Communication in the individual form of work

Definitions of the individual form of teaching work come down to describing individual work as an independent activity of students in the process of acquiring knowledge. "Individual work in teaching, learning and teaching starts from the psychological fact that each student is different from another student" (Sehovic, 2006). This form of teaching work arises as a need to maximally activate the student's thinking and bring out his abilities. "More than any other form of teaching work, the individual form exposes the student to all of his working abilities and provides him with very favorable opportunities to learn about his values and weaknesses." In this way, if it is properly didactically directed, this form of teaching work represents an inexhaustible source of positive motives for work and creativity, self-control and comparison with the achievements of other students in work" (Prodanovic, Nickovic, 1974). "By working alone, the student develops his independence, gains self-confidence and develops a love for work." The teaching of nature and society is very suitable for the application of an individual form of work, because it is based on interesting, authentic, obvious and accessible content for the age of the students" (Lazarevic, Bandjur, 2001). During the implementation of the course

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nature and society, a number of contents can be processed by individual student work: performance of practical works, work and observation in the school garden, entering data into tables, displaying data and drawing schemes, graphs, work on a geographical map.

Conclusion

Creating a quality learning and teaching strategy requires knowledge of the possibilities and limitations of all forms of teaching, ways of achieving communication as well as the methods used by the teacher during the teaching process. Modern models of work in teaching provide a good framework for the implementation of teaching through communication in different ways. Here, we primarily mean learning through research, learning through play, learning through discovery, learning through problem solving, experiential and other learning. Certain learning strategies are more suitable for working with a large group, while certain learning strategies are more effective when students work in a small group, pair or individual work. In order for the teaching process to be effective, Matijević also proposes criteria for choosing an appropriate learning strategy, such as: educational and educational goals, the nature of the learning content, the student's psychophysical characteristics and experiences from the previous period, the teacher's attitudes and didactic-methodical competence, etc.

The interdisciplinary nature and society teaching gives the teacher the opportunity to choose and apply different forms and forms of communication in the implementation of the teaching process. Depending on the teaching content, and therefore on the determination of the type of lesson, the form of teaching work and the method we use, a framework is formed in which appropriate forms of communication appear.

In order for communication to be successful, the role of the teacher is extremely important, and it consists in preparing students for non-verbal and indirect communication, enabling them to interpret codes for the exchange of information. Also, it is the teacher's duty to remove distractions from the communication process as much as possible in order to make the message as clear as possible to the students. This is most often achieved through explanations and instructions that the teacher gives verbally or in writing before starting the broadcast or participating in some communication process.

Statement
The authors have equally contributed to the paper.

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

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TEACHING TECHNIQUES AND METHODS TO DEVELOP CRITICAL THINKING IN ELEMENTARY SCHOOL

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Abstract: *The term "critical thinking" is often used to describe skills compatible with teaching-learning, but also applicable at work, in the family, and the circle of friends. Both attitudes and capacities are needed to carry out the critical thinking training process. Skills are those required in interacting with people and processing information correctly to achieve credibility of data and maintain clarity in communication. Critical thinking takes place in the context of solving problems and interacting with the people around them, so critical thinkers must adapt to both contexts. This type of thinking must be formed and developed from childhood. For this purpose, the teaching staff plays an important role, because it directs the development of students' thinking. Through the instructional-educational process, the teaching staff offers students the chance to develop this thinking. The learning methods and techniques applied by the teacher will direct the development process. We analyzed different methods and techniques through which critical thinking is developed, we described how to integrate and deploy them in the educational process.*

Introduction
The process of critical thinking is based on the establishment of opinions and actions. The formation of opinions is based on information received, analyzed based on previously accumulated knowledge, and the acceptance of a conclusion, which forms the basis of the decision. Critical thinking advances in several directions, but R. Ennis presents a general structure of the critical thinking process (Ennis, R., 1993).

Richard Paul believes that critical thinking involves the use of basic intellectual skills that can be used to achieve self-centered or fairness-

centered results. As basic intellectual skills develop, the individual may learn to spot the mistakes of one's thinking or may gain experience in making the opponent's thinking be seen from a negative posture (Elder, L., & Paul, R. 2005). Critical thinkers with "strong sense" tend to be correct. They use thinking responsibly and ethically, strive to understand and appreciate the point of view of others, are willing to listen to discussions with which they do not necessarily agree, and when faced with a superior argument change their perspective. (Paul, R. W., 1992) Critical thinkers strive to develop essential characteristics of the mind. These are interconnected intellectual habits that lead to self-discipline: intellectual integrity, intellectual autonomy, intellectual empathy, intellectual courage, fairness, perseverance, and intellectual modesty.

Characteristics of critical thinkers
Critical thinkers evaluate information according to certain criteria and use a logical procedure. Finally, he will develop a supporting point, using his knowledge of supporting his opinion in a discussion. Uses appropriate manner and rhetorical strategies.

The school is the institution that provides formal education and that considers not only the accumulation of some competencies but also their quality, focusing on the quality of thinking. Thus, to progress in the level of thinking, students must encounter increasingly complex (age-specific) problems that require flexibility, perseverance, and communication with others. It is critical thinking that helps this progress (Roman, A. F., 2019).

Sandra Love and Rebecca Stobaugh present some qualities and characteristics of critical thinkers (Love, S., Stobaugh, R., 2018):

- Shows an open mind to new ideas.

- Get involved in deciphering and solving problems.

- Analyzes, rationalizes, and evaluates information.

- Collaborates with the people around him, and works well in a team.

- Reflect on the information received.

- Apply the acquired knowledge in everyday life.

- Thinks critically and creatively.

- Communication is clear and concrete.

CHARACTERISTICS OF CRITICAL THINKERS
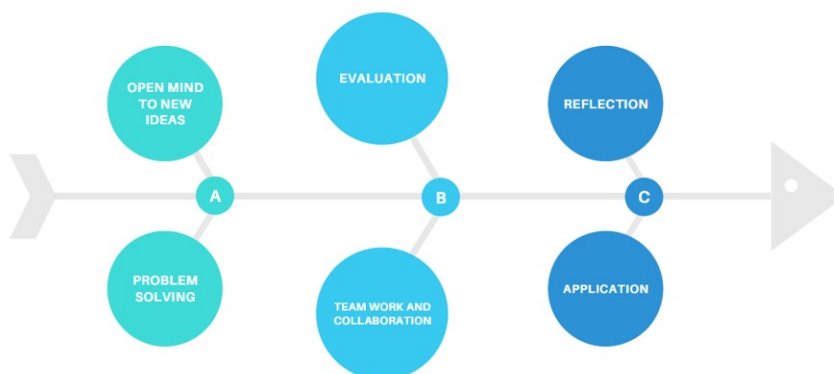
Fig. Nb. 1. Characteristics of critical thinkers

Critical thinking also consists of interacting with other people, which is done within the framework of solving a problem. The skills of critical thinkers are characterized by a set of strategies and techniques that form order in the process of critical thinking. The order is not rigid or sequential, because critical thinking is not characterized as such, it is inert in the use of strategies and techniques, thus they may be used in different sequences, ending with the same result (Torkos, H., Roman, A.F., 2019).

Critical thinkers try to better understand what others are saying. I acquire different skills, for example: identifying conclusions, assumptions, premises, and logically structuring information to reach a conclusion (Cottrell, S., 2005). In inference-based activity, critical thinkers actively induce claims and arguments through questions such as: Why? What do you want to say? Can you give me an example? What does this entail? And so on At this stage, the thoughtful critic analyzes the credibility of the source the speaker used. It will pay attention to the objectivity of the quality of the source and the information.

Methods and Techniques that develop critical thinking in School
Analyzing the concept of critical thinking, the following basic components are highlighted: the cognitive process, the ability to

support one's opinion through arguments, deepening and reflecting on information, evaluating information, and solving problem situations.

Each individual acquires at birth a set of skills that will be developed over the course of life, through education. The child learns to express what he feels and believes, and along the way of education, he must be guided to develop his skills and way of thinking. Critical thinking is a finality of thinking as a natural way of interacting with ideas and information. Cognitive development and learning interact through the practical assimilation of information (Cucoș, C., 2014).

Children, through thinking, build mental structures generated by correlating actions with accumulated knowledge. They look for the meaning of every event that happens in the world around them. The teaching staff has the role of creating educational events that the student will analyze and explore (Roman, A. F., 2020). We will present some techniques by which critical thinking can be developed.
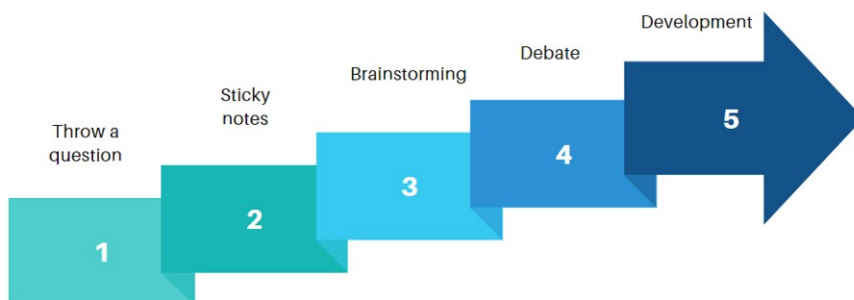
Fig. Nb. 2. Critical thinking development techniques

Throw a question is an interactive evaluation/self-evaluation method by which students are determined to communicate what they have learned, through a game of throwing a ball from one child to another. The method can be used in assessment lessons, in the stages of updating knowledge, or in providing feedback.

Sticky notes. By expressing the knowledge on the notes, it is possible to observe how the students interpret and think about the received information. The teacher expresses a mathematical exercise and the students have to solve the exercise on a sticky note, using only words and pictures. Notes are posted on the board and everyone's different

way of thinking is observed. This method is very similar to brainstorming, which is another method suitable for developing critical thinking (Love, S., Stobaugh, R., 2018).

Brainstorming recognized as the "storm of ideas", or "storm in the brain", motivates the critical spirit by highlighting one's ideas regarding a theme proposed for development. Within the method, the student has the opportunity to freely express ideas, solutions, and opinions, suppressing students' inhibition and increasing the free assault of ideas. This interactive method stimulates self-evaluation by allowing each student to express his opinion in the way he considers it correct, ideas that will then be processed and used to solve the proposed problem (Bocos, M., 2013).

Debate. Philosopher Karl Popper, who specializes in the formation and development of critical thinking, promoted the idea of debates. This program proposed by Popper, is carried out in different countries of the world and is carried out by the International Association of Education through Debate, which is a real success for students interested in debates (Salăvăstru, D., 2009).

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 pro and con arguments. The two teams will be called affirmers and deniers. The number of students in a team is determined, 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.

Methods and instruments used in research
The main method used in the research was observation, and the instrument was the observation sheet. Each instrument, has at least 5 items observed:

- Problem-solving skills, more specifically how students' approach and solve problems independently, also, looking for evidence of critical thinking skills such as analyzing information, making logical connections, and evaluating different solutions.

- Questioning techniques, or the types of questions asked by both the teacher and the students.

- Classroom discussions and interactions, observing if students actively engage in conversations, expressing their thoughts and

opinions, if they are encouraged to question and challenge ideas, because this can indicate the development of critical thinking and self-evaluation skills.

- Reflection activities, where I have observed the opportunities where pupils are given time to reflect on their own learning. This can be through activities like journaling, self-assessments, or reflective prompts. Also, whether students are encouraged to evaluate their own strengths, weaknesses, and progress.

- Decision-making, by observing situations where pupils need to make choices or decisions, if they are encouraged to consider different options, weigh pros and cons, and justify their choices and also observing instances where critical thinking is used to evaluate alternatives and make informed decisions.

Research questions
The present research is based on the following main questions:
- Which are the best methods and techniques to use in primary school in order to develop critical thinking?

- At what extent do these methods and their use impact the development of self-evaluation skills in primary school pupils?

Research findings
The importance of critical thinking in the development of self-evaluation

The involvement of children in the evaluation process, through self-evaluation, is a natural extension of the student-centered approach to learning characteristic of primary education. Reflection and assessment can encourage an understanding of objectives, improve intrinsic and extrinsic motivation, and provide a realistic assessment of learning gaps (Towler, L., Broadfoot, P., 1992). Once started, the process is likely to lead to a positive influence on learning style. teaching and management in creating a more truly democratic partnership between teachers and children. It should lead to improved continuity between stages of education. Self-assessment in learning is one of the main goals in achieving education, especially at early school age when the first skills for independence in learning are formed (Elder, A., 2014).

Meanwhile, critical thinking is a way of approaching and solving problems based on sound, logical, and rational arguments. This requires evaluating the information and choosing the right answer. This thinking is an active, coordinated, and complex process, similar to the skills of writing-reading, and speaking-listening, which requires a process of accumulating information that leads to well-reasoned decisions (Roman et al, 2020). So, critical thinking requires information and the evaluation of the information received, in order to form one's own opinion, in support of an opinion it is necessary to appreciate one's own knowledge and skills, to formulate and explain correctly what you think, and at the same time, to ask the right questions in order to accumulate new information.
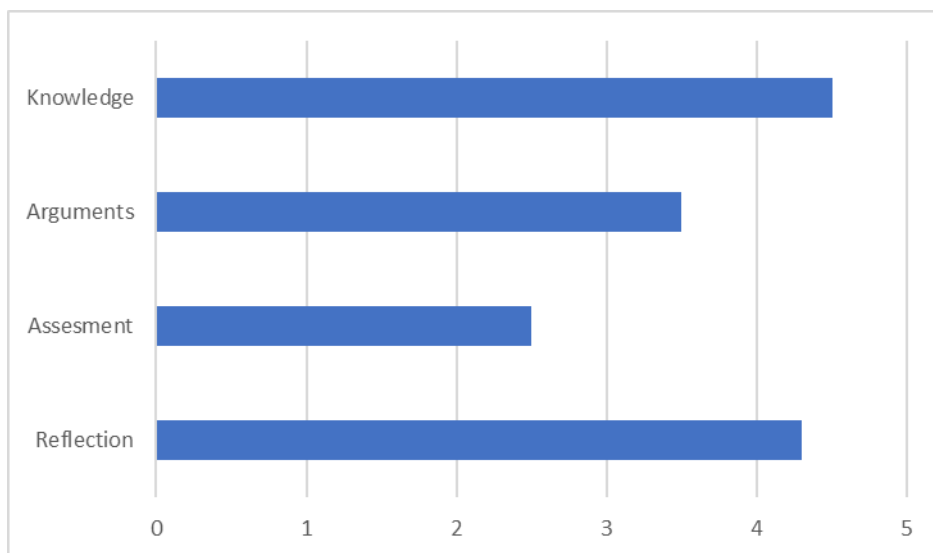
Fig. nb. 3. Criterions needed in critical thinking in order to develop self-assessment skills as observed in the classroom

As showed in the classroom, the best methods used in order to develop critical thinking, are as it follows:
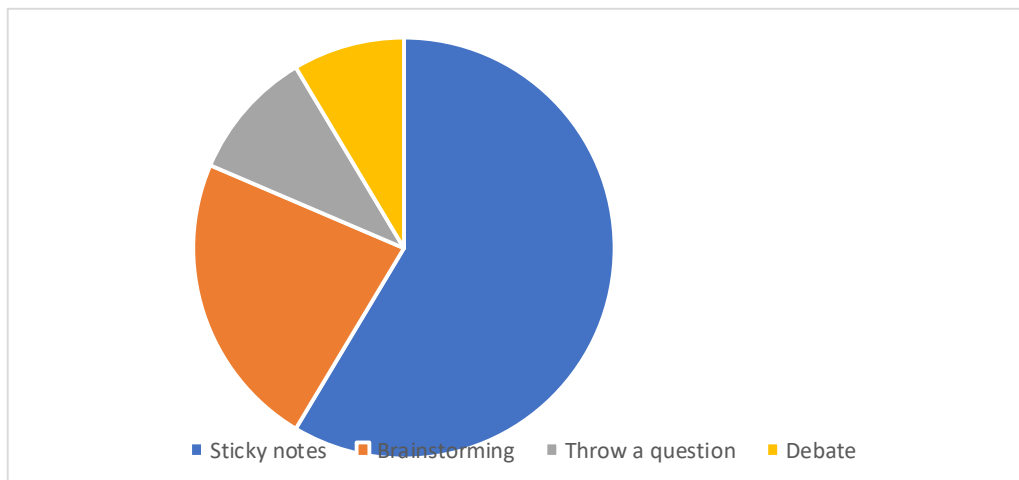
Fig. nb. 4. Critical thinking methods ranked in the classroom

Conclusions

The findings of this research highlight the importance of integrating critical thinking methods into primary school education. By incorporating strategies that promote critical thinking skills, such as problem-solving activities, open-ended questioning, and reflective practices, educators can enhance students' cognitive abilities and foster a lifelong love for learning. The research demonstrates that critical thinking methods play a vital role in the development of self-evaluation skills among primary school students. Through engaging in critical thinking processes, students become more self-aware, reflective, and capable of assessing their own work. This promotes personal growth, metacognitive awareness, and the ability to make informed judgments about their own learning progress. By nurturing critical thinking skills, primary schools empower students to take ownership of their learning. Students become active participants, rather than passive recipients, in the educational process. They develop the ability to set goals, monitor their progress, and make informed decisions, fostering a sense of agency and self-directed learning. The research indicates that critical thinking methods in primary schools have a positive impact beyond the classroom. The skills developed through critical thinking, such as problem-solving, decision-making, and higher-order thinking, are transferable to real-world situations. Students can apply these skills in various contexts, enabling them to become adaptable and successful individuals in the future. While the research demonstrates the positive impact of critical thinking methods

in primary schools, there is a need for further exploration and refinement of instructional practices. Future research could focus on evaluating the long-term effects of these methods on students' academic achievement, problem-solving abilities, and overall cognitive development. Additionally, the effectiveness of specific instructional approaches and the integration of technology in promoting critical thinking could be investigated. (Paul & Nosich, 2020)

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INVESTIGATING THE INFLUENCE OF COVID-19 ETHICS ON STUDENTS' INTEREST IN LEARNING CHEMISTRY

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Abstract: *This study discusses the influence of COVID-19 ethics on students' interest in learning chemistry. Five research questions and one null hypothesis guided the study. A descriptive survey research design was used to carry out this study. The population for this study consists of 2,644 chemistry Students in the 19 public secondary schools in Awka South Local Government Area of Anambra state. A sample size of 80 chemistry students was used for the study. The simple random sampling method was used to select eight (8) public secondary schools in Awka South Local Government Area. Therefore, 10 chemistry students were selected from each of the eight secondary schools. Twenty (20) item structured questionnaires on a four-point rating scale developed by the researchers were used for data collection. The instrument was validated by two experts. To determine the internal consistency of the instrument, the Cronbach alpha formula was used and a reliability coefficient of 0.87 was obtained. After the administration of the instrument to the respondents, the data obtained were analyzed using mean and standard deviation to answer the research question and z-test to test the null hypothesis at the significance level of 0.05. The findings of the study revealed that social distancing, use of face masks, regular washing of hands, use of hand sanitizers and restriction of movement are common COVID-19 ethics. Also, COVID-19 negatively affected students' chemistry learning and influences students' interest to a high extent. It was shown that COVID-19 ethics influenced more of male students'*

interest than their female counterparts as there was a significant difference between the male and female chemistry students on COVID-19 ethics on student interest in favour of the males. Thus, providing enough lesson time and provision of ICT and e-learning facilities are possible ways to improve students' interest in learning chemistry during the COVID-19 era.

Keyword: *chemistry; learning; covid-19; ethics; influence; students; interest*.

Introduction

Chemistry is a physical science related to the study of various atoms, molecules, crystals and other aggregates of matter whether in isolation or combination which incorporates the concept of energy and entropy in relation to spontaneity of chemistry process (Nnoli, 2022). Chemistry deals with the investigation of the properties of matter and the ways in which they interact, combine, change and uses to form new substances. Chemistry is equally very necessary for the management of our natural resource, provision of health facilities, adequate food supply and favorable living environment, therefore a country without chemistry knowledge cannot develop technologically (Nkwoma, 2020). Chemistry is concerned with the utilization of natural substances and the creation of artificial ones. As a practical subject chemistry requires various kinds of techniques by teachers in their lesson to enhance student's instructional gain (Oriahi, (2019). Hence, there is need for chemistry teachers irrespective of any pandemic or emergency to improvise the needed materials to avoid problems like scarcity of standardized materials. Thus, there is no excuse not to effectively teach chemistry due to non-availability of funds or insufficient standard equipment (Federal Ministry of Education 2017).

Covid-19 is the pandemic that attached the whole world in the year 2019. COVID-19 pandemic presents serious ethical challenges in the areas of resource allocation and priority-setting, physical and social distancing, public health surveillance, health-care worker's rights and obligations to conduct of clinical trials and these posed some problems in educational system (Nnoli, 2021). The era of covid-19 in turn are complicated by the diverse health systems and unique cultural and socio-economic contexts of countries. Consequently, there is a great need for guidance to ensure ethical conduct of research, decision making in clinical care, education, and public health policymaking at every level of the global covid-19 response (Kelley, 2021). Covid-19 is

an acute respiratory illness in humans caused by a corona virus, capable of producing severe symptoms and in some cases death, especially in older people and those with underlying health conditions. Covid-19 is the pandemic that attached the whole world in the year 2019. COVID-19 pandemic presents serious ethical challenges in the areas of resource allocation and priority-setting, physical and social distancing, public health surveillance, health-care worker's rights and obligations to conduct of clinical trials and these posed some problems in educational system (Shidiq et al, 2020). The era of covid-19 in turn are complicated by the diverse health systems and unique cultural and socio-economic contexts of countries. Consequently, there is a great need for guidance to ensure ethical conduct of research, decision making in clinical care, education, and public health policymaking at every level of the global covid-19 response.

In anticipating the spread of this virus, many countries impose a lockdown status. The enforcement of the lockdown status significantly affects not only the economy but also education sector. United Nations Education, Scientific and Cultural Organization (UNESCO) estimate that 107 countries have implemented school closures due to the COVID-19 virus, which affects 862 million children and adolescents or half of the global student's population (Shidiq, 2020). Children have milder symptoms of COVID-19, and their role in transmitting the disease remains unclear. However, the government proactively close schools to slow the transmission, reduce the burden of health care, or protect populations at risk. The COVID-19 pandemic adversely impacts the progress some governments were making about increasing the education budget. This is because education is an essential right for children, young and adults in emergencies and must be a priority from the very beginning of any and all emergency responses (Philani, 2020). Therefore, this is a crisis that requires urgent attention and collective action by all governments, stakeholders and communities. The outbreak of COVID-19 has compounded the plight of learners in countries affected and or emerging from conflict and disaster.

Despite the vital role and importance of chemistry, the interest rate in study in the recent COVID-19 era has reduces. Various factors may contribute to students' low interest in chemistry, such as students' background, poor performance, unqualified teachers and absenteeism from school (Almahdawi, 2021). On the other hand, ethics is defined as a branch of philosophy that involves systematizing, defending, and recommending concepts of right and wrong behavior (Paul & Elder, 2021). The field of ethics concerns matters of value. Ethics seeks to

resolve questions of human morality by defining concepts such as good and evil, right and wrong, virtue and vice, justice and crime (Singer, 2017).

Statement of the Problem

Students' interest towards chemistry which has been considered an important part of learning has been affected and changed in the previous days due to various unhealthy factors such as COVID-19 ethics. Due to restriction of movement to reduce the spread of covid-19, some students deviate their attention from the learning of chemistry and hence their interest in chemistry hindered. Declining interest in science has been causing problems in learning because it affects the focus of students in learning chemistry. The outbreak of COVID-19 has compounded the plight of learners in countries affected and or emerging from conflict and disaster. Despite the vital role and importance of chemistry, the interest rate in study in the recent COVID-19 era has reduces. Various factors may contribute to students' low interest in chemistry, such as students' background, poor performance, unqualified teachers and absenteeism from school (Almahdawi, 2021).

There is need to harness these challenges of students' interest in chemistry due to covid-19 pandemic by making chemistry education in Nigeria more functional and meaningful to both youths and society at large. One of the best ways to achieve this is to engage in E-learning ability in such a way that chemistry teachers shall use the opportunity to inculcate to them all they missed during the lock down. This would help to maintain the curriculum standard.

Hinged on these, this study tends to investigate the influence of covid-19 ethics on student interest in learning chemistry in Awka South Local Government Area. Therefore, this study sought to ascertain the following: The;

1. COVID-19 ethics.
2. COVID-19 ethics influence students learning of chemistry.
3. extent to which COVID-19 ethics influence students interest in chemistry.
4. gender difference in COVID-19 ethics on student interest in chemistry.
5. Possible remedies to improve students interest in studying chemistryduring COVID-19.

Research Questions

The following research questions guided this study:

1. What are COVID-19 ethics?
2. How do COVID-19 ethics influence students learning of chemistry?
3. To what extent has COVID-19 ethics influence students interest in chemistry?
4. What are the gender differences in COVID-19 ethics on student interest in learning chemistry?
5. What are the possible remedies to improve students' interest in study chemistry?

Hypothesis

There is no significant difference between male and female students' interest in learning chemistry.

Methodology

A descriptive survey design was used for the study. The study was carried out in secondary schools in Awka South Local Government Area in Anambra State. The population comprised of all chemistry students (numbering 2,644 students) in 19 public secondary schools Anambra State. The sample consists of 80 chemistry students drawn from 8 out of 19 public secondary schools in Anambra State. Therefore, 10 chemistry students were selected from each of the eight secondary schools. The instrument for data collection was 20 items structured questionnaire developed by the researcher on a four-point scale of strongly agreed, agreed, disagreed and strongly disagreed. The reliability was found to be 0.87. Validation of the instrument was done by the two lecturers from the Department of Science Education, Nnamdi Azikiwe University, Awka.

The questionnaire has two sections: Section A sought information on the bio-data of the respondents. Awka South Local Government Area in Anambra state. Section B questionnaire was intended to elicit the opinions of the respondents on the influence of COVID-19 ethics on students' interest in learning chemistry. It was further divided into sections containing item questions in accordance to the specific purpose of the study and research questions developed from the study. After the administration of the instrument to the respondents, the data obtained were analyzed using mean and standard deviation to answer the research questions while z-test was used to test the null hypothesis at the significance level of 0.05. A mean of 2.50 and above indicated that the respondents agreed with items on the questionnaire while a

mean below 2.50 indicated that the respondents disagreed with the items.

Results

To answer the research questions and test the hypothesis the collected data were analysed and presented as below:

Research Question One: What are COVID-19 ethics?

Table 1: Mean of responses on the COVID-19 ethics

S/N	ITEMS	N	SA	A	D	SD	$\bar{x}$	REMARK
1.	Social distancing is a way of preventing covid-19	80	57	13	4	6	3.51	Accepted
2.	The use of face masks is to prevent the spread of covid-19	80	44	16	15	5	3.24	Accepted
3.	Regular washing of hands to reduce the spread of covid-19	80	52	18	4	6	3.45	Accepted
4.	Using of hand sanitizers minimizes the spread of covid-19	80	46	23	10	1	3.43	Accepted
5.	Restriction of movement to reduce the spread of covid-19	80	40	13	17	10	3.04	Accepted
	TOTAL						**3.33**	

The data presented in Table 1 shows the responses on the COVID-19 ethics as shown in items 1-5 which are all having above 2.5 which is the acceptance point. This indicates that social distancing, use of face masks, regular washing of hands, use of hand sanitizers and restriction of movement are common COVID-19 ethics.

Research Question Two: How do COVID-19 ethics influence students learning of chemistry?

Table 2: Mean of responses on how COVID-19 ethics influence students learning of chemistry.

S/N	ITEMS	N	SA	A	D	SD	$\bar{x}$	REMARK
6.	I don't have freedom to meet my teachers during free periods in	80	13	44	13	10	2.75	Accepted

	schools							
7.	I do not have sufficient time to learn chemistry during covid-19	80	35	35	6	4	3.26	Accepted
8.	Our teachers did not cover the syllabus due to covid-19	80	64	7	5	4	3.64	Accepted
9.	Not attending classes for a long time makes me not to be serious	80	58	10	4	8	3.48	Accepted
10.	I don't have access to computer for the e-learning during covid-19	80	20	33	17	10	2.79	Accepted
	TOTAL						**3.18**	

The data presented in Table 2 shows the responses on how COVID-19 ethics influence students learning of chemistry as shown in items 6-10 which are all having above 2.5 which is the acceptance point. This indicates that COVID-19 negatively affected the students learning as they do not have freedom to meet their teachers during free periods in schools, do not have access to computer for e-learning, lacks time to learn chemistry, and make the teachers not to cover the syllabus.

Research Question Three: To what extent has COVID-19 ethics influence students' interest in chemistry?

Table 3: Mean of responses on the extent COVID-19 ethics has influenced students' interest in chemistry

S/N	ITEMS	N	SA	A	D	SD	$\bar{x}$	REMARK
11.	Due to the lockdown, I could no longer study by myself	80	32	28	14	6	3.08	Accepted
12.	I don't take	80	47	13	3	17	3.13	Accepted

	classes seriously anymore after the lockdown							
13.	I have forgotten a lot which I was taught	80	50	16	4	10	3.33	Accepted
14.	Some of my classmates have abandon school after the covid-19 pandemic	80	58	12	7	3	3.56	Accepted
15.	Series of lockdown in covid-19 makes me lost my interest in chemistry	80	43	26	5	6	3.33	Accepted
	TOTAL						**3.29**	

The data presented in Table 3 shows the responses on the extent in which COVID-19 ethics has influenced students' interest in chemistry is high as shown in items 11-15 which are all having 2.50 above points which is the acceptance point.

Research Question Four: What are the gender differences in COVID-19 ethics on student interest in learning chemistry?

Table 4: Mean Response of Covid-19 ethics Among Male and Female Chemistry Students on Students' Interest in Chemistry.

S/N	GENDER	N	Mean

1.	MALE	32	2.40
2.	FEMALE	48	1.80
	TOTAL	**80**	**2.10**

The data presented in Table 4 shows that COVID-19 ethics indicates more of male interest in chemistry than female in respect to COVID-19 ethics.

Hypothesis
There is no significant difference between male and female students' interest in learning chemistry.

Table 5: Z-test of the mean ratings among male and female students on the Covid-19 ethics on Students' Interest in Chemistry. (P< 0.05)

	Gender	N	Mean	Std Dev	Std Error	df	t	P	Remark
Students' interest in learning chemistry	Male	32	2.40	.78	.44604	78	1.345	.0009	S
	Female	48	1.80	.73					

S = Significant (p $<$ 0.05)

Table 5 reveals that the p-value is lesser than the level of significance (0.05) which then means that the null hypothesis will be rejected. Therefore, there is a significant difference between male and female students' interest in learning chemistry in favour of the males with respect to COVID-19 ethics.

Research Question Five: What are the possible remedies to improve students' interest in study chemistry?

Table 6: Mean of responses on the possible remedies to improve students' interest in studying chemistry during COVID-19

S/N	ITEMS	N	SA	A	D	SD	$\bar{x}$	REMARK
16.	Enough time should be given to teachers to cover-up the syllabus	80	54	15	9	2	3.51	Accepted
17.	By increasing teachers' remuneration	80	23	41	7	9	2.98	Accepted
18.	Ensuring the provision of computers by the government	80	14	21	32	12	2.44	Rejected

19.	Engaging the students in practical work in all classes were necessary	80	44	26	5	5	3.36	Accepted
20.	E-learning and ICT should be encouraged in school	80	62	7	8	3	3.60	Accepted
	TOTAL						**3.18**	

The data presented in Table 6 shows the responses on the possible remedies to improve students' interest in studying chemistry during COVID-19 as shown in items 16-20 which are all having 2.50 above were accepted, except item 18 which is having below 2.50 which is rejected.

Discussion

The findings of this study revealed that social distancing, use of face masks, regular washing of hands, use of hand sanitizers and restriction of movement are common COVID-19 ethics. This is in line with Shidiq (2020) who asserted that due to the COVID-19 virus, over 107 countries closed down their schools and restricted movements.

Also, the study revealed that COVID-19 negatively affected the students learning as they do not have freedom to meet their teachers during free periods in schools, do not have access to computer for e-learning, lacks time to learn chemistry, and make the teachers not to cover the syllabus. The findings agree with Almahdawi (2021) who averred that during the COVID-19 era, students found it difficult to learn in their various schools.

Moreover, the finding of the study showed that the extent to which COVID-19 ethics has influenced students' interest in chemistry is high. As the chemistry students used in this study agreed that they have challenges on covid-19 ethics in learning chemistry and due to lockdown, some students lose interest in chemistry. For teachers not being able to cover the syllabus due to covid-19 ethics and lockdown, it will surely influence students learning and interest in chemistry.

Results also revealed that due to the lockdown, students could no more study by themselves, they have forgotten all they were taught, and some of the students have abandon school. It was empirically concluded that COVID-19 ethics influence on student's interest influence more of male students' interest than their female counterparts as there was a significant difference between the male and female chemistry students' interest with result to COVID-19 ethics on student interest.

Finally, it was revealed that providing enough lesson time, increasing teacher's remuneration, engaging the students in online practical works and provision of ICT and e-learning facilities are possible ways to improve students' interest in learning chemistry during COVID-19 era. This is in line with Shidiq et al (2020) who recommended the need for on-lining learning during and after COVID-19.

Conclusion

The covid-19 pandemic has negatively and profoundly impacted our global system leading to the disruption of educational system and causing students to lose interest in chemistry, hinder production of goods, loss of business and employment. Also, financial distress is becoming economic landmarks of the pandemic and the near-term challenges are never-ending. The COVID-19 pandemic with the novel severe acute respiratory syndrome corona virus 2 (SARS-CoV-2) has resulted in a major global health crisis. This has put tremendous strain on healthcare systems around the world and naturally raises issues concerning the allocation of scarce resources. Addressing this need around the world raises practical and ethical issues for the scientific research community internationally, more especially to be more concern on harnessing the challenges of the ethics of this pandemic in interest of students in learning chemistry education.

Recommendations

Based on the findings of the study, the following recommendations were made:
1. Teachers should be given enough time to teach and finish the syllabus
2. E-learning should be implemented in schools
3. Government should provide adequate materials for school teachers to use in order to aid learning.
4. E-learning and ICT should be encouraged in schools.
5. The global ethics community should work together to address the ethical implications of the covid-19 pandemic on educational system.
6. Global Health Ethics team should works to strengthen educational environments communication, collaboration and cooperation in these endeavors.

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STUDIES ON UNIVERSITY STUDENT ATTITUDE IN DISTANCE EDUCATION: A SYSTEMATIC REVIEW

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Abstract: *In recent years, with the digital transformation, distance education has become a frequently preferred education option. In addition to technological elements, student and teacher factors are very important in distance education. In this study, a systematic review of studies investigating the attitudes and behaviors of university students in distance education was made. Prisma 2020 checklist was followed while reviewing studies. As a result of the reviews, 38 publications were included in this research. In the research, answers to 5 basic questions were sought. The studies compiled according to the researched subjects, the countries conducting the research, the year, the method used, and the data collection methods were listed. In conclusion, the most studied subject among the studies investigating student attitudes toward distance education was online education adopted. The year with the most publications was in the year 2020. This research is a useful guide for studies that want to study student attitudes in distance education.*

Keywords: *distance education; students' attitude; online learning.*

Introduction

Societies are experiencing digital transformation in many areas with the rapid progress of technological developments. Distance education is one of the important indicators of the digital transformation in education. It has been defined as the physical separation of the learner and the teacher in a separate place. (Simonson et al., 2019) In addition to traditional education, the fact that there is a physical separation in distance education has also caused many differences in the education period. Distance education has advantages and disadvantages for students and teachers. Researchers have conducted research in many areas of distance education. Student attitude, faculty management

skills, and the involvement of external stakeholders in the process of distance education are considered very important for the accurate realization of knowledge management and increasing quality (Markova et al., 2017). The Covid-19 period, which took place in the past years, has forced students to study with distance education. In a study emphasizing the importance of students' perspectives on distance education, it was seen that many factors such as computer self-efficacy, student interest, and behavior are related to this field (Sendogdu & Koyuncuoglu, 2021). This study is aimed to present the literature studies on the feelings, attitudes, and behaviors of university students toward distance education as a systematic review. Since distance education is a new field with digital transformation, it has been a matter of curiosity for this study in which fields researchers investigating students' emotions and attitudes work. Considering the spread of distance education, the importance of this review comes to the fore in terms of the analysis of the subjects that can be studied on student attitude. Only English articles and book chapters were included in this research. This systematic review was made in accordance with the Prisma 2020 checklist (Page et al., 2021). It consists of introduction method findings and discussion sections. The research includes research questions. Findings will be compiled according to research questions.

Method

While searching the literature, it was noticed that the titles of the publications were not always sufficient to understand the content. After that, each study was analyzed in detail and it was decided whether it was suitable for this systematic review.

1.1.   *Research Questions*

The following questions were included in this research.

Q1: What is the most common year of publication in research on student attitude toward distance education?
Q2: What is the name of the country with the most publications in research on student attitude toward distance education?
Q3: What is the most studied subject in research on student attitude toward distance education?
Q4: What is the most frequently applied method in research on student attitude toward distance education?
Q5: What is the most frequently used data collection method in research on student attitude toward distance education?

1.2. Design

Inclusion and Exclusion Criteria

In the literature review, it has been observed that there are many publications related to distance education. These publications were eliminated according to certain criteria. PubMed, ScienceDirect, Eric, and Google Scholar databases were used in the search. Studies published between 2013-2023 were examined. As a result of the searches made with the keywords "distance education university student", and "online education university student", an average of 30,000 articles were listed. These studies were listed in order of relevance. The last search was done on 20 May 2023. The fact that a study was carried out in distance education, that it was studied with university students, and that it had student attitude-oriented measurements was an important determinant for its inclusion in research. The inclusion criteria for the publications included in this study are summarized in Figure 1.
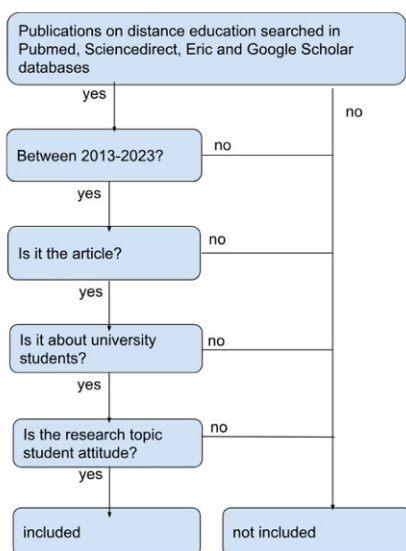
Figure 1 The inclusion criteria for the publications

Data Collection and Analysis

The number of publications was reduced to 90 by examining the compatibility of the subject title and summary, and the number of publications was limited to 38 by examining the final review and its compatibility with the subject in detail. Each study was reviewed by two authors to finalize the studies to be included in this review. A table has been created to evaluate the publications for this study's subject.

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Publications' pieces of information have been added to the table according to the criteria of year, country, subject, relative variables, data collection method, and measurement tools. This table has been very decisive to see the relevance of the study to the subject.

Article	Year	Country	Subject	Relative Variables	Method	Data Collection
(Wang et al., 2013)	2013	USA	Academic performance	Characteristics of students, self-regulated learning, technology self-efficacy	Quantitative-statistics	Survey
(Cho & Shen, 2013)	2013	USA	Academic performance	Intrinsic goal orientation and academic self-efficacy	Quantitative-statistics	Survey
(Kuo et al., 2014)	2014	USA	Satisfaction	Learner-instructor interaction, learner-content interaction, technology self-efficacy, self-regulation	Quantitative-statistics	Survey
(GOULIMARIS, 2015)	2015	Greece	Motivation	Satisfaction	Quantitative-statistics	Survey
(M. Zhou, 2016a)	2016	China	Online education adopted	Behavior control, self-determination	Quantitative-statistics	Survey
(KWAAH &	201	Ghana	Stress	-	Quantitati	Survey

ESSILFIE, 2017)	7				ve-statistics	
(Fojtík, 2018)	2018	Czech Republic	Academic performance	Abilities to manage studies	Quantitative-statistics	Survey
(HARSASI & SUTAWIJAYA, 2018)	2018	Endonesia	Satisfaction	Educational quality, visual quality, ease of use, student-instructor interaction	Quantitative-statistics	Survey
(Bryan et al., 2018)	2018	Omaha	Online education adopted	Student-instructor interaction, student-student interaction	Quantitative-statistics	Survey
(Pilkington, 2018)	2018	South Africa	Motivation	Gamification	Quantitative-statistics	Survey
(Neroni et al., 2019)	2019	Netherlands	Academic performance	Learning strategy	Quantitative-statistics	Survey
(Madge et al., 2019)	2019	South Africa	Using social media	Using WhatsApp	Mix method	Survey and interview
(Ajmal et al., 2019)	2019	Pakistan	Anxiety	Academic performance	Quantitative-statistics	Survey
(Alqurashi, 2019)	2019	Russia	Satisfaction	Learner-instructor interaction, learner-content interaction, learner-learner instruction, learner self-efficacy	Quantitative-statistics	Survey

(Villegas-Ch et al., 2020)	2020	Spain	Education improvement	Artificial assistant suggestion to the student	Quantitative- machine learning	Survey
(Tümen Akyıldız, n.d.)	2020	Turkey	Online education adopted	Time management, motivation and interaction	Qualitative	Focus group discussion technique
(Fidalgo et al., 2020)	2020	United Arab Emirates	Online education adopted	Time management, motivation, and language skills	Quantitative- statistics	Survey
(Lembani et al., 2020)	2020	South Africa	Online education adopted	Access to technology and digital divide	Quantitative- statistics	Survey
(Hebebci et al., 2020)	2020	Turkey	Online education adopted	Access to technology and interaction	Qualitative	Structured interview forms
(Arthur-Nyarko et al., 2020)	2020	Ghana	Challenges of distance education	Technological self-efficacy, financial situation, smartphone requirement	Quantitative- statistics	Survey
(Rotas & Cahapay, n.d.)	2020	Philippine	Challenges of distance education	Technological self-efficacy, financial situation, household responsibilities, technological	Mix method	Survey

				capability, interaction		
(Kedraka & Kaltsidis, 2020)	2020	Greece	Online education adopted	Learner-instructor interaction, academic capacity and learner emotions	Qualitative	Survey
(Yılmaz İnce et al., 2020)	2020	Turkey	Online education adopted	Technological capability	Quantitative-statistics	Survey
(Ho et al., 2021)	2021	China	Satisfaction	Instructor effort	Quantitative-machine learning	Survey
(Akour et al., 2021)	2021	United Arab Emirates	Online education adopted	Academic anxiety stress family	Quantitative-machine learning	Survey
(Rehab, 2021)	2021	Egypt	Test anxiety	General anxiety, life satisfaction	Quantitative-statistics	Survey
(Bataineh et al., 2021)	2021	Jordan	Online education adopted	Satisfaction, challenges of distance education	Mix method	Survey and semi structured interview
(Lee et al., 2021)	2021	United Kingdom	Satisfaction	Learner-instructor interaction	Quantitative-statistics	Survey
(Markova, 2021)	2021	Russia	Challenges of distance education	Technological capability, motivation, learner-instructor interaction,	Quantitative-statistics	Survey

				learner-learner interaction, quality of education and satisfaction			
(Gan & Sun, 2021)	2021	USA	Digital divide	Technological capability	Qualitative	Survey
(Di Giacomo & Di Paolo, 2021)	2021	Italy	Satisfaction	Interaction	Quantitative-statistics	Survey
(Cicha et al., 2021)	2021	Poland	Online education adopted	Technological anxiety, learner self-efficacy	Quantitative-statistics	Survey
(Alhazmi, 2022)	2022	Saudi Arabia	Challenges of distance education	Technological capability, education quality, health problems and ethical issues	Quantitative-machine learning	Survey
(Turan et al., 2022)	2022	Turkey	Satisfaction	Flexibility, self-regulated effort	Quantitative-statistics	Survey
(Šorgo et al., 2022)	2022	Slovenia	Stress	Satisfaction	Quantitative-statistics	Survey
(Zhang et al., 2023)	2023	China	Academic performance	Self-efficacy, academic commitment	Quantitative-statistics	Survey
(Lamanauskas & Makarskaitė-Petkevičienė, 2023a)	2023	Lithuania	Online education adopted	Quality of education	Mix method	Interview

(M. Zhou, 2016b)	2023	USA	Motivation	Self-determination	Quantitative-statistics	Survey

2. Findings

The findings are listed as follows according to the questions examined by the research. Microsoft Excel program was used while creating the charts.

Q1: What is the most common year of publication in research on student attitude toward distance education?

While the number of publications increased slowly after 2017, it increased rapidly as of 2020. It is seen in figure 2 that while there are publications in 2021, there is a decrease in the number of publications in 2022 and 2023.
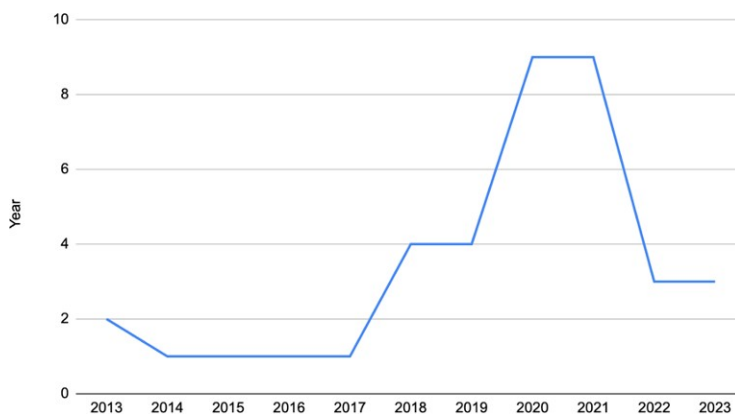
Figure 2 Studies on student attitude on distance education by years

Q2: What is the name of the country with the most publications in research on student attitude toward distance education?

In figure 3, When the publications investigating student attitudes in distance education are listed by country, there are 23 different countries. Especially, the USA is the most studied country. Names of other countries: Greece, China, Ghana, Czech Republic, Indonesia, Omaha, South Africa, Netherlands, Pakistan, Russia, Spain, Turkey, United Arab Emirates, Philippines, Egypt, Jordan, United Kingdom, Italy, Poland, Saudi Arabia, Slovenia, Lithuania.
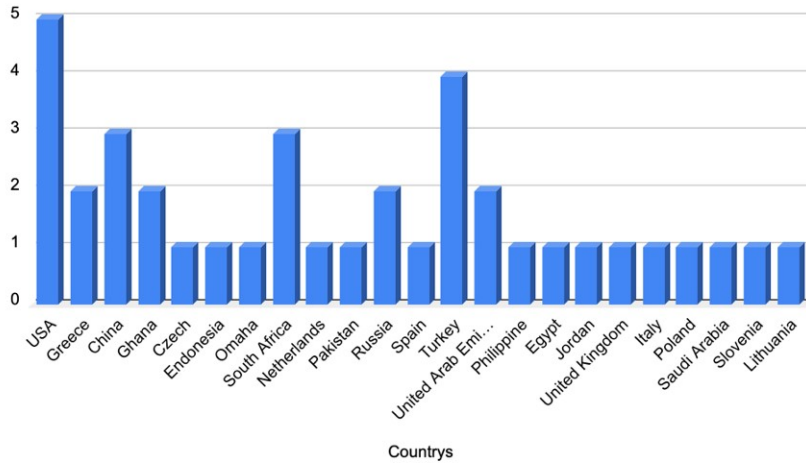
Figure 3 Studies on student attitude toward distance education by countries

Q3: What is the most studied subject in research on student attitude toward distance education?

Online education adopted has been another frequently studied topic. The subjects studied in studies on student attitude toward distance education are as follows in Figure 4: academic performance, satisfaction, motivation, Online education adopted, stress, using social media, anxiety, education improvement, challenges of distance education, test anxiety, and digital divide.
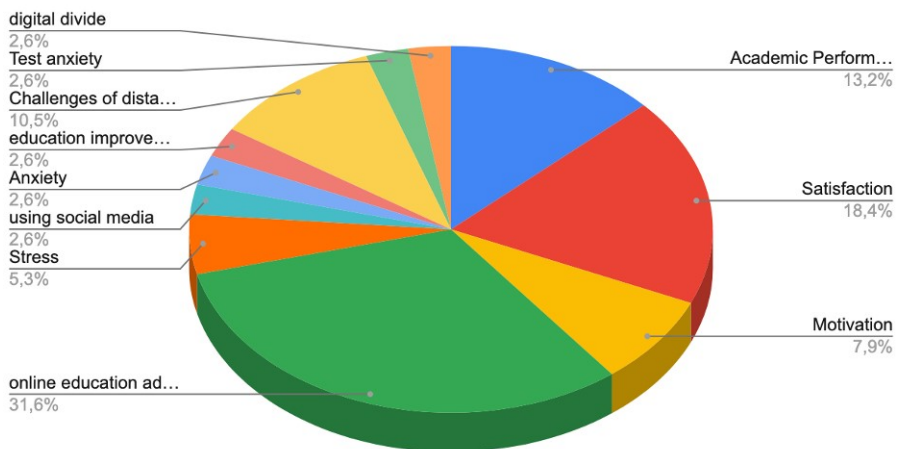
Figure 4 Studies on student attitude toward distance education by subject

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Q4: What is the most frequently applied method in research on student attitude toward distance education?

Studies investigating student attitudes and behaviors in distance education have mostly used studied quantitative-statistical methods with a rate of 68.4% in Figure 5. The other methods used in the publications are seen as quantitative-machine learning, qualitative, or mixed methods, each with a rate of 10.5%.
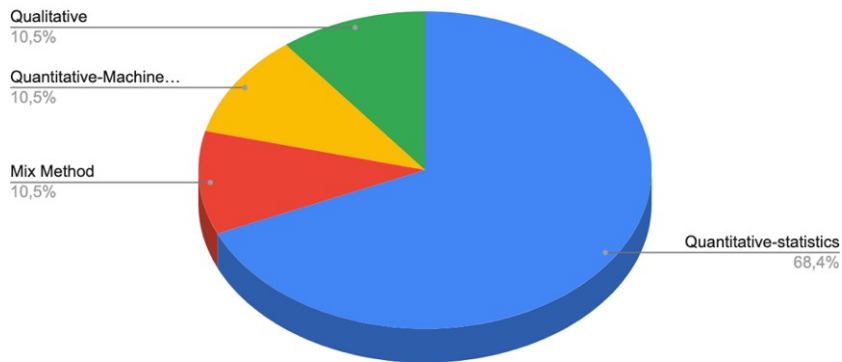
Figure 5 Studies on student attitude toward distance education by the methods

Q5: What is the most frequently used data collection method in research on student attitude toward distance education?

According to Figure 6, the survey was the most important data collection method with 86.6% of the studies on student attitude toward distance education. Other data collection methods are seen as focus group discussion techniques, structured interview forms, survey and semi-structured interviews, and Interviews, each with a rate of 2.6%.
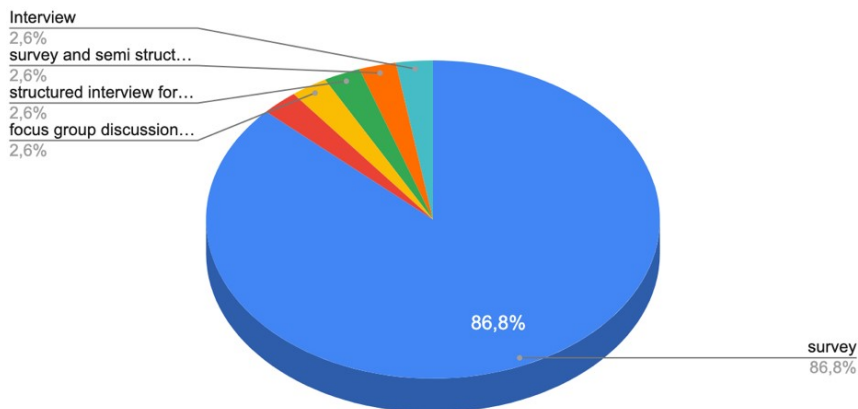
Figure 5 Studies on student attitude toward distance education by data collection methods

The studies on student attitude in distance education have been filtered according to the subject and classified as follows.

Online education adopted

Distance education has existed for many years, but students can be resistant to it for various reasons. In this context, the decision to use distance education has been widely studied. Zhou et al. examined students' intention to use distance education for planned behavior theory and self-determination and shared the conclusion that the findings include connectivity (M. Zhou, 2016a). According to a study conducted in South Africa, the digital divide, and technological inadequacies negatively affected students' decision to use distance education (Lembani et al., 2020). In a study conducted in Omaha, it was revealed that students' participation in distance education is related to learner-instructor interaction and learner-learner interaction (Bryan et al., 2018). During the Covid-19 period, there are many studies on student attitudes toward distance education. In a study conducted during the Covid-19 period, while anxiety, hopelessness, and lack of interaction were negative effects on students' decisions to use distance education, flexibility in time and place was seen as a positive effect (Tümen Akyıldız, n.d.). In another study conducted with students studying in Portugal, The United Arab Emirates, and Ukraine, time management, motivation, and English language skills negatively affected students' decision to use distance education (Fidalgo et al., 2020). In the publication examining the views of students on distance education in Turkey during the Covid-19 period, technological

inadequacy and limited interaction negatively affected the use of distance education tools (Hebebci et al., 2020). The interaction of students with the instructor, their academic qualifications, and their emotional state affected their intention to use distance education in a study that took place in Greece during the Covid-19 pandemic (Kedraka & Kaltsidis, 2020). Yılmaz et al have concluded that students' technological competencies negatively affected their intention to use distance education (Yılmaz İnce et al., 2020). Researchers, which aims to predict students' intention to use mobile learning platforms, with machine learning methods, the effects of factors such as fear of low grades, family conditions, stress and loss of friends, and sadness in students were observed on their intention to use mobile learning platforms (Akour et al., 2021). According to a study conducted with students studying in Jordan, it was concluded that students' dissatisfaction with distance education and technological inadequacy affect their decision to use distance education tools (Bataineh et al., 2021). In research conducted with students living in Poland during the Covid 19 pandemic, it was concluded that technological anxiety and self-efficacy were effective in the decision to use distance education tools (Cicha et al., 2021). The quality of education has been highly effective in student participation in the course through distance education
(Lamanauskas & Makarskaitė-Petkevičienė, 2023b).

Satisfaction
Satisfaction is the second most frequently studied subject. It has been examined a lot of variables that affect satisfaction as well as student satisfaction. In a study investigating the predictors of satisfaction in distance education for university students studying in Indonesia, it was seen that the quality of education, the ease of use of the interface, and the student-instructor interaction affect satisfaction (Harsasi & Sutawijaya, 2018). Alqurashi has investigated student satisfaction and learner-student interaction, learner self-efficacy, and learner-content interaction, He has concluded that these predictors are closely related to satisfaction. The study emphasized the need for a detailed examination of the reasons why the learner-student interaction is determinant (Alqurashi, 2019). In research investigating the predictors of satisfaction in online learning, it was concluded that while student-teacher interaction and learner-content interaction were seen as important factors, the learner-learner interaction had no effect (Kuo et al., 2014). Researchers, which carried out a student satisfaction estimation study with machine learning during the Covid-19 period, have concluded that the teacher's effort was an important predictor of

satisfaction (Ho et al., 2021). In another study investigating the distance education perspective of students during the Covid 19 period through satisfaction, it was concluded that satisfaction is related to instructor communication (Lee et al., 2021). They investigated students' perceptions of distance education through satisfaction; it was observed that students reported less interaction with the instructor and less distraction (Di Giacomo & Di Paolo, 2021). Turan et al., investigating the predictors of satisfaction in distance education shared the conclusion that the variables of gender, self-regulated effort, and flexibility have a positive effect on satisfaction (Turan et al., 2022).

Academic Performance
Academic performance studies are always included in publications on students in education. For distance education, studies have been conducted that measure the value of academic performance and examine the relationship between academic performance and many other variables. In research examining the factors affecting the academic success of students in distance education, it was concluded that a student's character, self-regulated learning, and technological competence are directly related to academic success (Wang et al., 2013). According to a study examining the variables affecting academic success in online learning, it was concluded that student internal goal orientation and academic self-efficacy are of great importance for academic success (Cho & Shen, 2013). A study investigating the advantages and disadvantages of distance education compared distance education and traditional education and concluded that students' ability to manage their studies is effective in student academic success in distance education (Fojtík, 2018). Neroni et al., have examined the relationship between academic performance and learning strategies, they have concluded that strategic management skills, time, and effort were important predictors of academic performance (Neroni et al., 2019). In a study conducted during the Covid-19 period, it was concluded that the predictors of self-efficacy and academic commitment were effective on the academic success of students (Zhang et al., 2023).

Challenges of Distance Education
Challenges of students in distance education and methods of coping with problems are among the other publications encountered in research. In a study investigating the difficulties experienced by Ghanaian university students in distance education, it was concluded that there were financial inadequacy and technological problems (Arthur-Nyarko et al., 2020). According to another study conducted

with Filipino students during the Covid-19 period, internet problems, insufficient course resources, electrical problems, learner-learner interaction, domestic problems, and mental and physical health problems were stated as the reasons for the difficulties experienced by students in distance education (Rotas & Cahapay, n.d.). Distance education challenges of students living in Russia during the Covid-19 period were expressed as learner-learner and learner-instructor interactions, self-evaluations, education quality, and motivation problems (Markova, 2021). Alhazmi has investigated what kind of problems students have with the changes in education methods that occurred during the Covid-19 period. The contents of distance education on Twitter were analyzed and the basic problems of distance education were collected under five headings as educational problems, social problems, technological problems, health problems, and attitude and ethical problems (Alhazmi, 2022).

Stress, Anxiety

Stress and anxiety problems in distance education are other frequently studied subjects. In a study conducted with stressed students in distance education, the causes of stress were determined as academic duties, exams, financial problems, and family problems (Kwaah & Essilfie, 2017). According to research conducted with distance education students in Pakistan, it was concluded that the anxiety level of the students and their academic performance were related (Ajmal et al., 2019). Rehab et al., have examined the effect of test anxiety of university students in distance education on general anxiety and satisfaction in daily life, it was concluded that there is a strong positive relationship between the general anxiety of students with test anxiety in distance education, and test anxiety negatively affects satisfaction (Rehab, 2021). In another study conducted with students living in Slovenia, it has been revealed that the satisfaction level of the students affects stress and as the satisfaction increases, the stress decreases (Šorgo et al., 2022).

Motivation

Motivation has been seen as an important factor for student participation in distance education. There was a positive correlation between student motivation and satisfaction according to a study measuring the relationship between the satisfaction and motivation of distance education students (Goulimaris, 2015). In a study that draws attention to the importance of competition for student motivation, it has

been concluded that gamification has a significant positive effect on motivation (Pilkington, 2018). Zhou and Zhang have investigated the effect of student intrinsic and extrinsic motivation on self-determination theory, it was stated that the effectiveness and usability of the instructional management system were correlated with motivation (Z. Zhou & Zhang, 2023).

Social Media
A study that talked about the contribution of students' use of social media tools in distance education to course development shared the conclusion that students' use of WhatsApp is important in learner interaction (Madge et al., 2019).

Education Improvement
It was shared that artificial assistants can be developed in accordance with distinctive details such as the student's learning style, motivation, character traits, and family characteristics in a study investigating the methods of improvement in the distance education system (Villegas-Ch et al., 2020).

Digital Divide
Researchers have investigated the digital divide for distance education students during the Covid 19 period, it was concluded that technological inadequacies are a major obstacle to distance education for most students (Gan & Sun, 2021).

3. Discussion

In this systematic review study, student attitude studies in distance education conducted in the last 10 years were examined in detail. Research questions were very important for the details of this study. Within the scope of the findings obtained, some comments can be made for the studies on student attitudes in distance education.

The most frequent use of statistical methods in data study methods analysis metdhıd can be associated with the high number of studies collecting data with questionnaires. On the other hand, the underutilization of machine learning can be seen as a deficiency in this field and may be an important tool for new researchers. The fact that the questionnaire is most frequently preferred in data collection can be explained by the distance of education and the lack of face-to-face communication with students. Although it is possible to measure the student's system usage behaviors in distance education with technical devices, it is not enough to follow the emotional state and student

attitude from technological records. In addition, the fact that there are many scales prepared for the attitudes and behaviors of students in distance education supports the data collection method with questionnaires. It is seen that statistical methods are the most frequently used method for measurement in studies examining students' distance education attitudes. It could be mentioned that machine learning studies have increased over the years. Osmanoğlu et al. investigated the emotion analysis of students in distance education, it was emphasized that it is important to better understand learners and how they feel, and it was proposed that machine learning techniques can be used for accurate prediction. In new studies that will investigate student attitudes in distance education, analysis and predictions with machine learning methods may be interesting and contribute to the scope of this subject (OSMANOĞLU et al., 2020).

As of the beginning of 2020, the Covid-19 disease has swept the world and many countries have started quarantine. Education has been one of the most affected areas by this pandemic. According to Pokhrel et al., approximately 1.6 billion students in more than 200 countries have been affected and distance education has been preferred over face-to-face education (Pokhrel & Chhetri, 2021). In parallel with this information, student attitude studies in distance education conducted in the last 10 years explain the increase in the rate of distance education preference during the Covid-10 in 2020 and 2021. The emotional load of the students should be considered in the studies carried out during Covid-19. According to Akour et al., factors such as fear of low grades, family problems, stress, loss of friends, and sadness during the Covid-19 pandemic affected the distance education processes of students (Akour et al., 2021). In this context, it can be concluded that the studies carried out during the pandemic show bias compared to the studies conducted in other years by highlighting the students' emotional states. The increase in the number of articles in 2020 and 2021 can be seen as meaningful with the transition to emergency distance education in the Covid-19. It could be said that there is a numerical bias in the studies included in this research in 2020 and 2021 due to the pandemic.

Among the compiled studies, it was seen that the most studied topic was the Online education adopted. Although some students have experienced distance education before, this experience can be new for many students. In this context, it is understandable that the question of whether students will accept a non-traditional educational environment is the most frequently studied topic. Studies investigating students' decision to use distance education have looked at whether the decision

to use distance education is related to the following topics: behavior control, self-determination, student-instructor interaction, student-student interaction, time management, motivation and interaction, language skills, digital divide, access to technology and interaction, learner-instructor interaction, academic capacity and learner emotions, technological capability, academic anxiety, stress, family, satisfaction, challenges of distance education, technological anxiety, learner self-efficacy, quality of education. Many factors can affect students' online education adopted. So much so that the effects of the social dynamics of the subject studied during the year in which the study was carried out should also be considered. Most studies investigating students' decisions to use online education platforms were conducted during the years of the Covid-19 pandemic. The fact that students must use online education platforms regardless of their preferences is quite understandable in studying this subject. Satisfaction was a relative variable that was also examined in studies investigating the Online education adopted. In studies investigating student satisfaction. The relationship between satisfaction and the following topics: learner-instructor interaction, learner-content interaction, technology self-efficacy, self-regulation, educational quality, visual quality, ease of use, student-instructor interaction, learner-learner instruction, learner self-efficacy, Instructor effort, flexibility, and self-regulated. According to table 1, while examining satisfaction, the interaction issue was mostly investigated. In particular, the subjects of learning content, learning instructor, and learner-learner interaction come to the fore. It has been stated that student satisfaction is directly related to learner-content interaction (Kuo et al., 2013). As a result of these studies, it can be mentioned that there is a relationship between student satisfaction with instructors and content in distance education. When examining academic performance studies, its relationship with the following subjects was often looked at: characteristics of students, self-regulated learning, technology self-efficacy, intrinsic goal orientation, and academic self-efficacy, abilities to manage studies, learning strategy, self-efficacy, academic commitment. While investigating the variables affecting the academic performance of the student, it was observed that student-oriented studies were carried out. It is seen that research working on 'Challenges of distance education' were carried out during the covid 19 period. It is understandable that this issue should be examined when societies struggle for a healthy life. So much so that there were many problems in the distance education process for this multi-factorial period. It has been seen that especially technological and financial self-efficacy are at the forefront of these problems. In studies on students' stress and anxiety in distance

education, it has been observed that stress in distance education is associated with academic performance, general anxiety, life satisfaction and distance education satisfaction. Psychological factors such as stress and anxiety are related to student attitudes toward distance education. In fact, the fact that this subject has been studied less among the studies investigating student attitudes in distance education shows that it is necessary to be studied by researchers. Subjects investigating student motivation, social media use, the digital divide, and education development in distance education have been less studied than other research topics. There is a need for new studies on these researchers for these topics, each of which can be important and effective. Considering that the most frequently studied topic is the Online education adopted, it is obvious that these topics and many details need to be examined separately. However, with these topics handled separately, induction can be made in the decision to use distance education.

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EXPLORING THE POWER OF PSYCHO-PEDAGOGY: INTEGRATING PSYCHOLOGY, EDUCATION, AND STUDENT DEVELOPMENT FOR EFFECTIVE LEARNING AND ACADEMIC SUCCESS

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Abstract: *The nucleus of education sciences is represented by the learning outcomes, because only through them can one judge an educational strategy or an effective educational method etc. Here, the aim of this study emerged, which is to shed light on the points of intersection between the three main axes of the educational process, pedagogy, psychology, and education, about enhancing learners' skills that have an impact on facilitating their access to more. High-quality learning outcomes in the long term. In educational settings, it is crucial to grasp psychological theories and incorporate them. This content examines psycho-pedagogy concepts, including the integration of psychology and education. Investigating the influence of issues like emotional management, active involvement in the classroom, and teacher-student relationships is a way to support both learner growth and academic performance through the educational process. It will also be discussed the potential psychologist's findings in educational contexts, emphasizing the importance of creating a comfortable, joyful classroom environment for academic success. Examining the intersection of pedagogy and psychology, the benefits of using positive psychology, immersive learning strategies, and mindfulness techniques are demonstrated to enhance learner engagement and motivation to learn.*

Keywords: psycho-pedagogy; psychology; pedagogy; effective learning; classroom engagement.

Introduction

The profound impact that psychopedagogy has had on teaching and learning processes has sparked a significant amount of attention in recent years. Psycho-pedagogy arose from the fusion of pedagogy with psychology, which allowed the study of educational phenomena and their interpretation by returning to psychology. Education is commensurate with the requirements of the classes in which they participate, and thus the possibility of achieving more effective learning outcomes has increased. This field expertly combines principles from psychology and education to boost student development and academic achievement. Teachers who give importance to the cognitive, emotional, and behavioral aspects of learners, are able to use effective strategies that cater specifically to their unique needs.

Employing psychological theories, concepts, and research findings is vital for harnessing optimal learning environments. By merging the fields of psychology and education, teachers can create a deeper understanding of student motivation, memory retention, cognitive processes, and effective assessment techniques. So that this knowledge can be used to develop and design educational curricula in an integrated manner with customized educational methods to enhance meaningful and lasting learning experiences.

In the educational context, psycho-pedagogy highlights the significance of acknowledging students' social and emotional well-being. Emphasizing that emotional management and relationships based on trust and mutual interaction between the learner and the teacher and the inclusion of active participation within the educational activities within the classroom have a direct impact on improving academic performance and enhancing the success of learners and their achievement of long-term learning compatible with their goals and needs, depending on the age group.

Comparative study between pedagogy, psychology, and psycho-pedagogy

Psychology is a science and specialists in this field are psychologists, and this science is based on a set of knowledge that can be verified by experiment and observation, and therefore specialists in this field do not take things for granted but rather observe and verify them to discover their essence by themselves. (Sathiy, 2021, p. 7) Psychology is concerned with the study of human behavior and mental processes, and like other sciences, it has philosophical origins through which

some phenomena such as rational thought, free will, and determinism were dealt with. While the techniques of introspection and cognitive processing appeared as an inevitable result of the development in the wake of early studies such as those carried out by William James and other functionalists. The biological study of the human brain has advanced our understanding of behavior mechanisms, with early attempts like physiognomy and phrenology influencing modern techniques. Psychology has diverse perspectives, including traditional behavioral, biological, humanistic, psychodynamic, and cognitive approaches. The number of specialized fields in psychology is constantly growing, including both basic and applied research. (Joseph G. Johnson, Ann L. Weber, Kevin Filter, 2011, pg. 31-32)

The word 'education' has several connotations of growth, feeding, treating, and caring. From educational literature, many definitions of the term emerge, such as: 'It is a process in which the adult generation transfers its social and historical experience to the emerging new generation to prepare it for work and life'. (Mona, 2023, pg. 10-12)

Educational psychology goes beyond the direct application of the principles of psychology to educational phenomena, by studying the psychological aspects of educational situations. It aims to help teachers develop their professional and personal knowledge and skills by facilitating an understanding of the essence of the educational process, especially about learning while teaching during formal teaching activities. (Sathiy, 2021, p. 9)

Educational psychology is concerned with studying the mechanism by which learning takes place in all stages of life, that is, it explains learning from the point of view of developmental psychology, bypassing formal learning to include all aspects of human life. Psychology has provided an explanation of human behavior from different perspectives according to the most well-known schools of psychology, which include behaviorism, psychoanalysis, Gestalt psychology, and humanistic psychology, on which educational psychology relies on studying how individuals learn in different contexts and across the course of life using a variety of methods. To study learning processes, including observation, experimentation, and inquiry.

Educational psychology is a fertile field for research to raise the quality of the educational path's outputs, because it analyzes the mechanism of human learning within different environments and for different goals, allowing for the development of more effective

teaching methods, and introducing teaching and learning theories based on educational foundations related to psychology in educational activities.

Understanding the foundations of psycho-pedagogy: psychology, education, and student development
Current issues and research apply psychological theory to educational practice. As such, this course will explore the fundamental themes in behavioral, developmental, and cognitive areas of psychology as they relate to education. Topics include learning, motivation, growth and development, cognitive processes, intelligence tests, measurements, evaluations, etc (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC) 2023)

In this course, students will explore the etiology, course, and prevalence of psychological disorders in childhood and adolescence. Particular focus is on the role of these issues in the development of the developing person within the context of family, school, and culture. Major clinical and empirical classification systems (DSM IV and the new DSM5) are examined, as are some of the diagnostic and assessment strategies used to aid the conceptualization and treatment of these disorders (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC) 2023)

The peculiarities of psycho-pedagogical training and its role in the preparation of future teachers for the preservation and strengthening of occupational health, the formation of their professional stress resistance, and the harmonization of personality are revealed in the article. The activity of the training group was described as aimed at the formation of skills of productive interaction and constructive overcoming of professional difficulties, the formation of strategies of protection against stress, the teaching of methods and techniques of self-regulation, and the formation of cyanogenic thinking. The dynamics of psychological indicators of the occupational health of future teachers who took part in the work of psycho-pedagogical training were checked (School of education, Online programs, 2020).

The role of psychology in enhancing teaching and learning.
Due to the birth of positive psychology in education, classroom engagement has flourished and played a remarkable role in the academic field. The other significant determining factor of success in education is motivation, which is in line with classroom engagement. Moreover, based on the constructivist approach, experiential learning

(EL) as a new method in education and a learner-centric pedagogy is at the center of attention as a result of its contributions to improving the value of education, which centers on developing abilities and experiences. The current review makes an effort to consider the role of EL in students' classroom engagement and motivation by inspecting its backgrounds and values. Subsequently, the efficacy of findings for academic experts in educational contexts is discussed (Kong, 2021).

This study investigated how teachers who support children with learning difficulties utilize psychologists' reports in their teaching practice. Previous research has examined teachers' preferences for how reports should be written rather than how they might be used. Semi-structured, qualitative interviews with 12 teachers (seven primaries, four high schools, and one preschool teacher) were undertaken and followed up with member checks and interrater reliability (School of education, Online programs, 2020)

From a psychological point of view, motivating learners and engaging them in the classroom are closely related (Yawen Han, Yongliang Wang, 2021); nevertheless, motivation consists of factors that are psychological and difficult to observe, while engagement involves behaviors that can be observed by others that are not simple to notice and estimate learners' motivation (Reeve, 2012)In other words, educators cannot concretely understand the fulfillment of their learners' basic mental necessities and enthusiasm for learning (Reeve, 2012). Nonetheless, Reeve asserted that, in contrast to motivation, learners' engagement is, by all accounts, a phenomenon that is distinctive and can be nearly noticed. Generally, educators can impartially consider whether or not a specific learner is engaged in the class exercises, such as problem-solving. (Kong, 2021)

The Principles of Effective Education
Understanding the impact of feelings on the learning process is of paramount importance because of its profound impact on creating the educational environment, so either you make it conducive to the learning process or not.
Emotions have an essential role in human function by affecting our attention, the way we memorize events or pieces of information, and how we look for solutions to problems.

Emotions are classified as positive or negative, and this characteristic is given by observing their effect on human development or the reactions of individuals. Positivity is not a passing thing practiced in

life; positivity and motivation are part of applied psychology and are called positive psychology. Applied psychology is a trend in psychology and part of it, using its scientific theories to apply them not only in the clinical field but also in daily, professional, emotional, educational, and therapeutic life, of course, as it extends to all aspects of life. Positive psychology can be a strong contributor to the field of education, educational institutions, the educational system in particular, and the student. Applied psychology is not limited to something that you hear as a patient but also to what you see so that you are an effective worker and have an active role in being positive in your life in the educational field.

The learner's personal qualities are classified in a pyramid that reaches its peak through the development of various skills and abilities based on several types of intelligence, the most important of which are mental, emotional, and social, which allows him to enhance his positive qualities. By bypassing the learner to a class stage, he approaches the top of the pyramid, and therefore, when he graduates from the educational system, they are considered elements of a strong personality that have been attained, allowing him to use them in his daily, professional, and practical life for the future.

In the teaching process, curiosity and enthusiasm are useful because of their ability to facilitate learning by increasing the learner's ability to participate in the learning process and motivating him to think and analyze information, which makes it easier for him to fix it and keep it in his memory for a long time and enable him to retrieve it to be used when needed While negative emotions, such as fear and anxiety, impede learning because they affect the learner's ability to pay attention and fix the initial information in his memory, he will not have the ability to retrieve and employ it in similar situations, and therefore learning is not achieved. To improve learners' learning experiences, it is necessary to recognize the nature and triggers of these sensations, whether negative or positive. The relationship between academic performance and emotional intelligence is undeniable. Learners with greater levels of emotional intelligence, which includes the capacity to perceive, comprehend, and control emotions successfully, typically outperform their peers in academics. Controlling their responses, dealing with difficult events, and keeping attention during the study all contribute to the development of long-term learning outcomes. It is also worth emphasizing that instructors play an important role in fostering a supportive and caring classroom atmosphere, particularly via the development of emotional intelligence and the incorporation of social learning into schooling.

To enhance learning well-being and resilience, it is important to implement different strategies involving teaching basic skills, such as thoughtful organization and expression of emotion, as well as showing perseverance and resilience when faced with obstacles. Another critical part is the establishment and maintenance of appropriate boundaries between teacher and learner.

A proactive and holistic approach to mental health is essential when developing a resilient education system. By prioritizing the emotional well-being of learners and providing them with the necessary tools and support.

Recognizing the influential role of emotions in the acquisition of knowledge is critical. To establish a conducive atmosphere for the development of the learner's personality, instructors and parents must first grasp the tremendous influence of emotions on the learning process. Enhancing learners' emotional intelligence not only allows them to regulate their emotions more effectively but also improves their overall well-being through the use of techniques that promote resilience and well-being, such as mindfulness practices and social and emotional learning programs.

We must prioritize emotional intelligence and well-being in education to provide learners with the indispensable skills needed to grow academically and personally.

The Role of Education in promoting student development and academic success
First, examining academic success via teacher reports provides important information regarding the student's academic behavior in the classroom, such as the ability to independently attend to and complete assignments. Second, the teacher report also provides information regarding the student's ability to independently grasp new information and complete classroom assignments accurately. Thus, teacher ratings provide a more comprehensive and representative sample of academic content (Gresham, F., Reschly, D. Carey, M. , 1987), as well as provide unique information on children's academic behavior. The method of using teacher ratings of children's academic success, however, has its limitations such as rater bias. For example, children who display good interpersonal skills are typically also rated higher in intellectual competence (Bjorklund, 2022). Thus, to obtain a comprehensive assessment of children's academic competence and to build on previous research, the current study examined both a teacher rating of academic success as well as individually administered

standardized achievement tests (Paulo A. Graziano, Rachael D. Reavis, Susan P. Keane, Susan D. Calkins, 2007)

Explores research, policies, and practices that promote a high-quality teacher workforce, and effective instruction. Topics include recruitment, retention, mentoring, induction, professional development, certification, value-added, merit pay, etc. Appropriate for students from different programs, including education, social/public policy, psychology, political science, sociology, business, and current and future teachers and school leaders (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023).

The quality of the student-teacher relationship was also related to greater academic success/productivity in the classroom and math and reading standardized test scores. This finding further solidifies the importance of having a positive relationship with teachers for children's academic functioning and is consistent with previous research (Pianta R, Steinberg M, Rollins K., 1995). Kindergarteners who had a positive relationship with teachers were more likely to complete assignments with thoroughness, accuracy, and in a timely way. This finding suggests that teachers have a motivational role in children's early academic success. Teachers who have a positive relationship with students are more likely to encourage these students to achieve, and in turn, these students may be motivated to achieve to please their teachers (Urdan, T. C. and Maehr, M. L., 1995). The fact that a positive student-teacher relationship was also related to better performance on math and reading standardized tests provides evidence that our finding is not simply due to a rater bias (Paulo A. Graziano, Rachael D. Reavis, Susan P. Keane, Susan D. Calkins, 2007).

Integrating Psychology and education for effective learning outcomes
This course introduces the essential theories and practices of cognition-based educational assessment and the focus will be on exploring the implications of recent developments in cognitive psychology and learning theories for educational assessment by reviewing available assessment examples and research assessment prototypes. It includes topics like what is the purpose of assessment, how can we design fair and valid assessments to elicit student cognition, how technologies can support the measurement of student cognition and learning processes, and assessment and social justice

and accessibility issues (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023).

If we look at the cognitive component of subjective well-being separately, we see that it has been consistently linked to school adaptation indicators such as perceived academic ability, positive attitudes toward school, school engagement, and the value of the importance of school. There are also theoretical approaches that support the connection between academic performance and satisfaction with life. As regards the affective component of subjective well-being, longitudinal studies have linked negative emotions with non-adaptive results at school and school failure. Regarding the positive affect indicator of subjective well-being, evidence exists, that points to positive emotions being associated with school success (Arantzazu Rodríguez-Fernández, Estibaliz Ramos-Díaz, Inge Axpe-Saez, 2018)

This course will expose students to the various ways in which mindfulness is being used to improve the health and achievement of students of all ages. Mindfulness-Based Stress Reduction (MBSR), which utilizes secularized practices from Asian and South Asian traditions for the remediation of various health concerns, has revolutionized behavioral medicine, and the scientific evaluation of MBSR has shed new light on the biomechanical pathways linking mind and body. This course will 1) explore the fundamental principles underlying mindfulness, 2) the scientific data on its effects, and 3) how mindfulness is being applied to clinical and educational settings to support healthy human development. Contemplative practices include all forms of meditation, including contemplative dimensions of yoga, tai chi, qigong, and other mind-body wellness activities. By far the most well-known contemplative practice in the U.S. today is "mindfulness." Mindfulness meditation was introduced into clinical medicine in the 1980s in the form of Mindfulness-Based Stress Reduction (MBSR) by Jon Kabat-Zinn and his colleagues at U Mass; since that time it has had a significant impact on psychoneuroimmunology, clinical medicine, and especially behavioral medicine. Both psychological theory and practice have slowly been transformed by new findings emerging from mindfulness research. Brain imaging studies of persons engaged in meditation suggest that focused mental activities can change cerebral blood flow (Newberg et al 2010), brain morphology, and neural circuitry, in addition to strengthening the immune system (Davidson et al 2003) and improving attention skills (Jha et al 2007). MBSR has been

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repeatedly documented to be effective in treating mental health problems, particularly depression, and anxiety, in numerous adult populations (Goyal et al 2014). Now, researchers are testing MBSR and other mindfulness approaches in children and adolescents as both a way to treat social-emotional dysfunction as well as to promote health and enhance (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023).

Strategies and approaches for implementing psycho-pedagogical principles in the classroom
Finally, and from the perspective of psycho-pedagogic guidance rather than scientific research, Skinner and Pitzer propose a perspective on school engagement that emphasizes its role in organizing the daily school experiences of children and youth, as well as their cumulative learning, long-term achievement, and eventual academic success. The proposed intervention is enriched by the inclusion of concepts such as "daily resilience," which focuses on the analysis of how students respond to mistakes, difficulties, or failures at school. The authors conclude that the same personal and interpersonal resources that promote engagement may shape students' reactions to challenges and obstacles, with academic coping being an especially important bridge back to re-engagement (Arantzazu Rodríguez-Fernández, Estibaliz Ramos-Díaz, Inge Axpe-Saez, 2018)

This course is about looking at elementary school classrooms and understanding children's experiences of school from a variety of perspectives, and from a variety of theoretical and methodological lenses from which the student can interpret children's educational experiences. This course is about developing the skills of observation, reflection, and analysis and beginning to examine some implications for curriculum, teaching, and schooling. This course requires you to spend time in an elementary school classroom (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023).

The purpose of this course is to expand the student's awareness of the multifaceted responsibilities and roles of school counselors in primary and secondary school settings. Through readings, class discussions, and guest lectures, it is intended that students will acquire additional competencies and a broader appreciation for professional issues confronted by school counselors and the varied responsibilities they have in helping students focus on academic, personal, social, and career development to achieve success in school and lead fulfilling lives. An important emphasis of this course will be

on school counseling from an ecological and multicultural perspective. Prerequisite: Students must be enrolled in the M. Phil. ED. in Professional Counseling Program (Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023)

The impact of psycho-pedagogy on student motivation, engagement, and overall academic Achievement
The independent contribution of emotion regulation to academic success, after accounting for children's intellectual functioning, the student-teacher relationship, and behavior problems—significant factors that the literature has shown to be important for academic functioning— supports Blair's (2002) assertion that emotion dysregulation disrupts cognitive processing of executive functions that are important for learning. Children with good emotion regulation skills are thus better equipped to handle the qualitative shift in the learning environment that occurs during kindergarten compared to children with poor emotion regulation skills. Future research may want to examine the extent to which specific executive functions (i.e. attention, working memory, and planning) are disrupted in children with poor emotion regulation skills (Paulo A. Graziano, Rachael D. Reavis, Susan P. Keane, Susan D. Calkins, 2007) .

Due to the significant relationship between emotion regulation and children's academic success across settings, we conducted mediational analyses to examine the quality of the student-teacher relationship and children's behavior problems as potential mechanisms by which emotion regulation affects academic success. Based on Rimm-Kaufman and Pianta's (2000) Ecological and Dynamic Model of Transition we expected that the transactional process evidenced by a positive student-teacher relationship would mediate the relation between children's emotion regulation skills and academic success. We also expected that the student-teacher relationship would be the most salient mediator, above and beyond the effects of an individual factor such as behavior problems (Paulo A. Graziano, Rachael D. Reavis, Susan P. Keane, Susan D. Calkins, 2007).

Intellectual, emotional, and behavioral development in the college years. Illustrative topics: developing intellectual and social competence; developing personal and career goals; managing interpersonal relationships; values and behavior. Recommended for sub-matriculation in Psychological Services Master's Degree program

(Penn, University of Pennsylvania, Courses A-Z, Education (EDUC), 2023).

Conclusions
Highlighting the strong potential of combining psychology, education, and student development, this in-depth analysis delves into the role they play in promoting successful academic learning. The focus is on the importance of merging pedagogy and psychology in educational settings to improve teaching and learning methods. By recognizing the influence of emotions on the learning journey and creating a supportive classroom atmosphere, educators have the ability to positively impact students' academic achievement and overall happiness.

Enhancing learner engagement and motivation, the valuable tools that emerge are positive psychology, immersive learning strategies, and mindfulness techniques. Furthermore, supporting learners' growth and academic achievements in the long term are the emphasis on emotional management, active involvement in the classroom, and the establishment of strong teacher-student relationships.

Moreover, the field of psycho-pedagogy acts as an essential link connecting psychology and education. This connection allows for the creation of individualized teaching techniques and effective educational strategies that cater to the distinctive requirements of learners. By emphasizing the cultivation of emotional intelligence in learners, psycho-pedagogy highlights the direct correlation between improved academic achievements and overall well-being.

Understanding and applying various strategies such as mindfulness-based stress reduction and the incorporation of emotional intelligence in teaching practices is crucial in implementing psycho-pedagogical principles in the classroom. Teacher-student relationships that are positive and the addressing of challenges and obstacles in academic settings are also highlighted as essential aspects that influence students' engagement and re-engagement in their educational journey. Contemplative practices are another strategy that can be employed.

Emphasizing emotional well-being, resilience, and social-emotional learning, this study supports a comprehensive and proactive approach to education. By integrating psycho-pedagogy, educators can foster student growth and achievement, cultivating an enriching and optimistic learning atmosphere.

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ROBOTICS EDUCATION IN ECE: TEACHERS' OPINION AND WAYS OF INTEGRATION

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Abstract: *Educational robotics in Early Childhood Education is proven to empower children to understand the basic functions of technology and become digitally literate. The article investigates the current opinion of teachers about educational robotics at preschool level. The study takes them through several stages of questioning: from what they understand robotics to be at preschool level, if they consider the integration of robotics elements useful, how easy they find the integration of these elements and how quickly they can integrate practical robotics elements into games didactic. With a well-done PhD process Educational Robotics can have maximum effectiveness throughout its life. The natural curiosity and way of thinking of the new generation are advantages that must be exploited. Numerous studies have demonstrated the effectiveness of robotic education in the early education of children, although all we have to do is guide the specialists to integrate it into the teaching-learning process.*
The results of the quantitative analysis carried out with the help of teaching staff are presented by category and the significant differences that resulted are highlighted as well as recommendations for the integration of robotics elements in ECE activities.

Keywords: *educational robotics; early childhood education; programming skills.*

Introduction

Robotic education is more and more promoted due to the beneficiaries it brings. Robotic education is promoted as a valuable tool today that has multiple advantages even starting from the early education of children. Numerous researches have shown that a very good knowledge of technology and making innovations in this field leads to economic prosperity. This is actually the engine that influences the teaching process so that as many children as possible and as early as possible are digitally literate, so that they understand everything that is involved in programming bots and everything that is new in this field. Robotic education has developed and is developing in parallel with the state education system, as long as there is always a demand in the labor market for a robotic education or less (digital) in addition to the main skills of the targeted job. Therefore, computer-based education will be present at all levels, clearly with early education. These influences in education are gradually changing pedagogical concepts so that preschoolers and scholars develop specific skills for future jobs. Robotic education is more and more promoted due to the beneficiaries it brings. Robotic education is promoted as a valuable tool today that has multiple advantages even starting from the early education of children. Numerous researches have shown that a very good knowledge of technology and making innovations in this field leads to economic prosperity. This is actually the engine that influences the teaching process so that as many children as possible and as early as possible are digitally literate, so that they understand everything that is involved in programming bots and everything that is new in this field. Robotic education has developed and is developing in parallel with the state education system, as long as there is always a demand in the labor market for a robotic education or less (digital) in addition to the main skills of the targeted job. Therefore, computer-based education will be present at all levels, clearly with early education. These influences in education are gradually changing pedagogical concepts so that preschoolers and scholars develop specific skills for future jobs.

Literature review

Robotics education provides students with hands-on experience in technological and mechanical systems, adapting to complex environments and applying knowledge in real-world situations. Emphasizing STEM education, robotics aims to empower learners and provide authentic learning, allowing them to take initiative as co-constructors of learning. Educational robots come in a variety of shapes, sizes, systems and functions. These characteristics are crucial

in determining curricula, instructional activities, and learning objectives.

Robotics education utilizes educational robotics technologies to teach students about robotics or other subjects. Recent research has shown potential for young learners and proposed methods for developing and implementing a curriculum. However, research for young children is still in its early stages, with previous studies focusing on technological properties of educational robots or curricula. Comprehensive studies on how young children interact with educational robots and what they learn through robotics education are needed.

Educational robots are categorized into three types: robotics kits, social robots, and toy robots. Robotics kits enable students to design, construct, and program robots, while social robots, classified as Socially Interactive Robots (SIR) or Socially Assistive Robots (SAR), use artificial intelligence and autonomous behaviors for communication and interaction with students. Toy robots are commercially manufactured for entertainment and play.

Robotic education can be a promising learning approach for the development of computational thinking (Papadakis, 2022; Papadakis and Kalogiannakis, 2019; Jung, Won 2018) so that the little ones can form certain thinking skills, as the specialists in the "computational thinking" field claim is a relatively new term in early childhood education that refers to a specific problem-solving thinking process involving various logical and analytical thinking skills" (Lee, Joswich, Pole, 2022), "computational thinking represents a type of analytical thinking that shares many similarities with mathematical thinking (e.g., problem solving), engineering thinking (designing and evaluating processes), and scientific thinking (systematic analysis)" (Bers, 2017) but also notions of computer programming (Otterborn, Schonborn, Hulten, 2019)

Robotics education has been shown to improve students' cognitive learning of STEM knowledge and problem-solving skills, soft skills such as teamwork and social skills, and affective domains such as attitudes and interests in STEM subjects and careers (Altin & Pedaste, 2013, Ching et al., 2019; Hudson et al., 2020). Because we are going through revolutions based on technology, teachers consider that robotics education, even in ECE, can develop:

- involvement and motivation through active participation in all kinds of activities;

- faster handling of objects through games with age-appropriate robotics parts;
- collaboration and social skills by participating in teams that build certain robots
- creativity and imagination expressed by creating your own robots (with recyclable materials, special cubes or other materials).

There are many reasons why robotics education is important to be developed from ECE, reasons that can be found in recent research on robotics education namely. The top skills of the 21st century are critical thinking, problem-solving, creativity, collaboration, communication, but also skills in fields directly related to technology such as programming, automation.

Robotic education is suitable in ECE because robots have attractive characteristics for children, they maintain their attention, concentration, which leads to a higher performance (Papadakis, 2022). Of course, the role of the teacher is also very important, because if they promote and are totally convinced of its advantages, then children who are trained by such staff will be much more inclined towards technology. Research has shown that teachers' negative attitudes towards technology also develop negative attitudes for children (Papadakis, Vaiopoulou, 2021). An increasing number of countries have clear policies and frameworks for the introduction of programming at an early age. For example, there are, for now, as an experiment, Scratch courses (Department of Preschool Education, University of Crete) in which future preschool teachers present a myth or other activities using programming languages. Thus, but understanding very well what programming means, they can promote programming languages and their elements at an early age (Kalogiannakis, 2019). The "powerful ideas" of computational thinking described by Bers (2017) and developed by KIBO Robotics Kids include: algorithms, modularity, control structures, representation, hardware/software, design process and debugging.

The promotion of mobile technology is another helpful step on the way to an advanced stage of technology. The integration of all kinds of mobile devices in kindergartens, schools and their use for an educational purpose is intensively promoted in many countries (Cheung, Hew, Chu, 2017). Robotics education helps children to understand the connection between cause and effect, develops their imagination and creativity, helps them to solve problems through the

logical thinking that it forms, the cognitive skills that take shape and that help them acquire more easily programming skills.

Materials and methods
Methodology

The type of research is quantitative and the questionnaire was used to collect the information necessary for the study.

Sampling

The sample resulting from the application of the questionnaire remained at 143 teachers who are currently active in preschool education. The sample comes from teachers from three counties

Instrument

The questionnaire starts with general questions about ER, the knowledge held in this field, experiences (if any), the way to integrate ER into preschoolers' activities, the frequency of ER integration, how much they want ER integration, what ideas they have for the future of ER, and at the end there are some questions from the category of personal information (age, the environment in which the kindergarten is located, seniority in education). The *questionnaire* starts with general questions about ER,

- the knowledge held in this field,
- experiences (if any),
- the way to integrate ER into preschoolers' activities,
- the frequency of ER integration, how much they want ER integration,
- what ideas they have for the future of ER, and
- at the end there are some questions from the category of personal information (age, the environment in which the kindergarten is located, seniority in education).

Limitation of research

Parasite variables may also appear in the current research:
- because of the online environment and the opinions viewed there
- due to the underfunding of the system to reach the higher digital endowments supposed to be needed in the ER
- and because of the majority of respondents from the urban environment.

Results

Understanding the willingness of preschool teachers to adopt robotics education is crucial for evaluating its potential effectiveness and feasibility in early childhood education. This study aimed to explore the perceptions and beliefs of preschool teachers towards robotics education to gain insights into their readiness to incorporate it into their teaching practices.

The findings from the study revealed that a majority of the participants (79%) exhibited a positive attitude towards integration robotic education elements. These teachers expressed an openness to exploring and using robotics as an educational tool in their classrooms. This positive disposition suggests a willingness to engage with new teaching methodologies and integrate technology-based learning experiences into their curriculum.

However, it is worth noting that (14%) participants expressed uncertainty about the specific elements and components of robotics education. This uncertainty may stem from a lack of familiarity or limited exposure to robotics education in preschool contexts. It highlights the need for adequate training and professional development opportunities to enhance teachers' understanding and competence in incorporating robotics education effectively.

Furthermore, (7%) teachers expressed doubts regarding the successful implementation of robotics education in preschool settings. This skepticism may arise from concerns about practical challenges, such as the availability of resources, technical support, and age-appropriate robotics tools for young children. It suggests a need for addressing potential barriers and providing the necessary support structures to ensure a smooth integration of robotics education in preschool classrooms.

To further explore the perspectives of preschool teachers on robotics education and address their concerns, future research could focus on conducting in-depth interviews or surveys to gather detailed qualitative and quantitative data. This would enable a comprehensive understanding of the factors influencing teachers' attitudes, the specific aspects of robotics education that need clarification, and potential strategies to support successful implementation.

Only a percentage (36%) of today's ECE teaching staff express their concern about RE, indicating its relevance and impact on their profession, while (64%) accept the change.

The study reveals that the teaching staff currently active in the preschool education system have encountered RE through various means. The majority (73%) have learned about RE through tangents, such as hearing or reading about it, while a smaller proportion (26%) have witnessed its implementation in experimental classes, Erasmus projects, or other contexts. Only a negligible percentage (1%) have not seen or do not possess knowledge about RE.

When it comes to integrating RE into teaching practices, the study indicates a strong desire among the teaching staff (89%). This integration primarily involves implementing new rules within didactic games and other activities.
However, of this total of 89 %, only a smaller percentage (9%) expresses interest in RE through physical robots, and an even smaller percentage (2%) focuses solely on computer programming or other devices, which is deemed more challenging to achieve within the ECE system.

The teaching staff widely recognizes the usefulness of RE for the future and related areas, with an overwhelming percentage (98%) acknowledging its potential benefits.
Consequently, a substantial proportion (87.3%) of the teaching staff aims to implement RE-related activities in the future, showing a proactive attitude towards incorporating RE into their teaching practices. Additionally, they are willing to undergo training courses to enhance their knowledge and skills in RE.

This scientific explanation highlights the significant interest and recognition among the ECE teaching staff regarding RE. It emphasizes their desire to integrate RE into their teaching practices, with a focus on incorporating it into didactic games and other activities. The findings also indicate a willingness to undergo training to effectively implement RE-related activities and a strong belief in the future usefulness of RE. It should be noted that these conclusions are based on our specialized research.

How to apply the elements of educational robotics
Robotic education can also mean activities without a computer or tablet for programming. This screen-free approach aims to encourage physical interaction and exploration, and cause-and-effect learning. Robotics education can promote interdisciplinary learning by combining elements of technology, engineering, arts, and mathematics. It encourages children to explore and create through stories, art and

imaginative play. Children can see the results of their programming directly in action. The robot can be customized with various artistic elements and can move, play sounds and interact with the environment based on the instructions it receives. Robotics education, at the early education level, emphasizes the development of skills such as sequencing, problem solving, creativity and collaboration.

The numerous activities that assume small steps towards robotics education and that support the fundamental skills for computational thinking such as pattern recognition, decomposition, algorithm design, abstraction, etc. can be supported through several activities:

Ask youngsters to arrange pictures or items in a certain order, reinforcing the concept of step-by-step instructions, have youngsters detect and make patterns out of shapes, colors, or objects, engage children in physical activities such as coding games, in which they follow instructions to navigate through a series of "commands" to reach a certain destination, introduce coding ideas to children using programmable robots such as the Bee-Bot, which allow them to build simple command sequences to move robots, assembling coding blocks, they may build interactive stories, animations, and games (visual programming language), introduces coding skills through puzzles, games, and interactive storytelling, guide a robot through numerous tasks using coding commands to learn logic and programming concepts (Lightbot is a puzzle game for children aged 4 and up).

Closer examples for early education would be: children to follow a sequence of two or three actions (jumping, clapping hands, raising arms); children to sit in the shape of a circle, square (the geometric figures required by the current curriculum for the small group); children to execute some commands "like robots" (one step back, one step forward); children to manage through a labyrinth, to build using only two colors, to play many traditional games from the logical-mathematical games category.

Research in the field of robotics education in ECE is still in development and significant new results have appeared this year. Certainly, the field will be much more developed because children need technology and a way of thinking adapted to it in all future jobs.

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DIGITAL TRANSFORMATION OF BUSINESS EDUCATION PROGRAM IN NIGERIAN UNIVERSITIES FOR 21ST-CENTURY
SKILL ACQUISITION

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Abstract: *This study examined digital transformation of business education program for 21st-century skill acquisition in Nigerian universities. Two purposes of the study were employed in this research work. two research questions guided the study and two null hypotheses which were tested at 0.05 level of significance. A descriptive survey design was adopted for the study. The population of the study comprised 34 business educators in universities in Anambra state. The entire population was used for the study since the population is manageable and accessible to the researcher. Hence, there was no sampling The instrument used to collect data for the study was a structured questionnaire with two parts; part A contained items on the demography of respondents and part B contained items on the two research questions under the study. The questions were structured on a 4-point rating scale of Strongly Agree (SA); Agree (A), Disagree (D) and Strongly Disagree. The instrument was validated b three experts, two from the Department of Business Education and one from Measurement and Evaluation. Cronbach Alpha reliability coefficient was used to test consistency of the instrument and a general coefficient of 0.76. Data collected was analyzed using arithmetic mean and standard*

deviation while t- test was used to test the hypotheses at 0.05 level of significance. When the p value was found to be equal or less than 0.05 alpha levels, the noted difference was said to be significant, therefore, the null hypothesis was be rejected. However, a p value found to be greater than 0.05, the noted difference was insignificant, therefore, the null hypothesis will be accepted. The findings of the study revealed among others that curriculum modernization, administration facilitate 21st century skill acquisition in universities in Anambra state. Based on the findings of the study, the researcher recommended that curriculum planners should revamp the business education curriculum to emphasize experiential learning and real-world application of knowledge and skills by integrating relevant and future-focused content, students can develop the skills required for success in the 21st century. There should be integration of digital literacy into the core curriculum of business education programs by designing courses and learning activities that explicitly incorporate digital tools and technologies relevant to the field, such as data analysis software, project management platforms, and digital marketing tools.

Introduction

Business education is a specialized field of education that focuses on imparting knowledge and skills related to the business industry. It encompasses various teaching methods and approaches aimed at equipping students with a solid understanding of fundamental business practices. The primary objective of business education is to provide learners with the necessary skills, knowledge, attitudes, and competencies required for employment, career advancement, and self-reliance.

According to Otum (2018), business education programs cover a wide range of subjects, including business management, office occupations, economics, and entrepreneurship. These programs are designed to develop the basic skills of learners that can be applied in their personal lives and future careers. The overarching goals and objectives of

business education are driven by the needs of industry, commerce, and society as a whole.

One of the primaries aims of business education is to facilitate skill acquisition among students. This means that the curriculum is designed to equip learners with practical skills that are in demand in the job market. By providing hands-on learning experiences, business education programs prepare individuals for gainful employment by ensuring they possess the relevant skills and competencies needed in the business world.

Skill acquisition is the process of learning and acquiring a specific skill or art from a professional, with the aim of earning a living or educating others. In today's digital age, it is crucial to acquire the necessary skills to thrive in the global world. Oliseh (2016) emphasizes the importance of being prepared to acquire the skills needed to operate and excel in the current E-world.

The skills required for success in education and the workplace are often referred to as 21st-century skills. Countries around the world are recognizing the significance of interdisciplinary approaches to develop the digital skills and competencies of their citizens (Skolverket, 2017). As organizations increasingly adopt online learning and leverage technology to cut costs, educational institutions are transitioning to provide flexible learning environments where students can acquire digital skills (Seaman, Allen, and Seaman, 2017).

Having inadequate digital skills can act as an "invisible drag" on productivity and worker mobility, which is detrimental to both employers and employees (Bergson-Shilcock, 2017). As automation becomes more prevalent, the demand for digital skills will continue to rise. This demand extends across various sectors and industries. Higher education institutions need to focus on developing students' self-efficacy and adaptability skills. Digital transformation plays a significant role in achieving contextualized learning. Key dimensions of digital transformation include curriculum modernization and digital administration (Bond, 2018).

Digital transformation refers to the implementation and application of digital technologies in various aspects of our daily lives, both as individuals and organizations. It involves incorporating digital technologies in a disruptive and comprehensive manner, leading to significant changes in organizational processes. Digital transformation

aims to develop new business models that integrate digitized data, applications, and workflows (Heuermann, Engel & Lucke, 2018).

One of the benefits of digital transformation is resource savings. By optimizing resource utilization and adopting a selective and structured approach, organizations can avoid regular budget constraints and achieve cost savings (Carter, 2020; Powell & McGuigan, 2020). Digital transformation is also utilized to attract high-quality students, improve student experiences and accessibility, deliver high-quality teaching materials, and provide blended learning opportunities.

Furthermore, digital transformation can extend to administrative dimensions. Tay (2017) highlights that digitally transforming the administrative architecture enables organizations to create agile and flexible systems that can quickly adapt to emerging technologies. Faria and Henriqueta (2017) also emphasize the need for educational institutions to incorporate digital technologies to enhance their current practices, such as managing student data and curriculum. This enables institutions to innovate their management experiences and make proactive and informed decisions based on data-driven insights.

The COVID-19 pandemic has significantly accelerated the need for digitalization in businesses. Many industries that previously relied on in-person interactions have been compelled to adopt digital technologies to continue their operations. In this context, the future of business education in Nigeria relies heavily on embracing digitalization. Business education graduates can only thrive in their designated roles in society if they are well-equipped with the relevant digital skills needed to succeed in the 21st century.

The success of Business Education students in the business world largely depends on the skills they have acquired that enable them to adapt to society and the evolving dynamics of the workplace. A Business Education program that incorporates digital skills offers a unique opportunity for students to actively participate in the growing digital business world and the changing business ecosystems.

The response and opinions of academics in business education regarding the digital transformation of programs for 21st-century skill acquisition can be influenced by their age and experience. Younger academics who have grown up in the digital age may possess a higher level of digital literacy and familiarity with technology. They are likely more comfortable using digital tools and platforms, which enhances their ability to envision and implement digital transformations in

business education. On the other hand, older academics bring extensive experience and expertise in their respective business domains.

Given the changing dynamics of business, globalization, and the knowledge economy, the emphasis and focus of Business Education have shifted towards digital content. The goal of Business Education is to produce self-reliant graduates who can create jobs for others. To achieve this, strategies needed for proper exposure to digital skills for success in the 21st-century global economy and digitally transformed economic systems need to be identified. This has prompted the study of how to digitally transform Business Education programs for 21st-century skill acquisition in universities, particularly in Anambra State.

Statement of the Problem
Business education is tasked with equipping its recipients with the requisite 21st-century digital skills for self-efficiency and adaptability in the present world. To achieve this, digital skills & competencies must be integrated into all modules, courses, and learning settings of business education. The curriculum of business education seems to be too obsolete, filled with many courses, and themes that might not be applicable in the present world, it seems that the workforce in the field of business education lacks the technological skills & expertise required in this present digital era.

Also, digital tools which can provide new roles for researchers, teachers, and students which will also generate more interactive, engaging, and learning seem not to be available or utilized. Handling students' data, records and other management practices needs to be improved. This among others made a study on the digital transformation of business education programmed for 21st-century skill acquisition in universities a very paramount study.

Purpose of the Study:
The main purpose of this study is to ascertain how to digitally transform business education programmed for 21st century skill acquisition in universities Specifically, the study intends to ascertain how to digitally transform business education through:

1. Curriculum modernization for 21st-century skill acquisition in universities
2. Digital administration for 21st-century skill acquisition in universities

Research Question:

1. How can curriculum modernization facilitate 21st-century skill acquisition in universities ?
2. How can digital administration facilitate 21st-century skill acquisition in universities ?

Research Hypotheses

The following null hypotheses will be tested at 0.05 levels of significance.

1. There is no significant difference in the mean response of business educators on how curriculum modernization can facilitate 21st-century skill acquisition in universities with respect to age.
2. There is no significant difference in the mean response of business educators on how digital administration can facilitate 21st-century skill acquisition in universities with respect to age.

Method

A descriptive survey research design was used for the study. The population of the study consisted of business education lecturers in the universities in Anambra State. According to information gathered from the departmental offices in the various institutions, the total population of business education lecturers in universities in Anambra State was 34 as at 2020/2021 academic session. There was no sampling for the study since the population was manageable. A structured questionnaire was used for data collection. The response option for the instrument was a five-point rating scale with the following options: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). Cronbach Alpha was used to determine the internal consistency of the items. The reliability coefficient obtained for the test was 0.76, hence it was considered reliable. Copies of the questionnaire were physically administered to the business educators by the researcher and collected on the spot. Data collected in the study were analyzed using descriptive statistics (mean and standard deviation) to answer the research question.   The null hypotheses formulated was tested using independent samples t-test at 0.05 level of significance. When the p value will be found to be equal or less than 0.05 alpha levels, the noted difference will be said to be significant, therefore, the null hypothesis will be rejected. However, if the p value is found to be greater than 0.05, the noted difference will be insignificant, therefore, the null hypothesis will be accepted.

Presentation and Interpretation of Results

Research Question 1: How can curriculum modernization facilitate 21st-century skill acquisition in universities?

Table 1: Mean ratings and standard deviation scores of respondents on how curriculum modernization can facilitate 21st-century skill acquisition in universities

S/N	Curriculum Modernization and 21st-century skill acquisition	Mean	SD	Remarks
1	Curriculum modernization exposes students to new ideas and opposing viewpoints while demonstrating the power of the collective mind.	3.29	0.63	Agree
2	It affords students opportunities to flex their creative muscles beyond the traditionally	3.26	0.61	Agree
3	It will consequently change the ways the library, which is significantly placed in the profession of information management operates.	3.23	0.55	Agree
4	It will provide teachers with digital skills in the selection of the most effective digital resources/ materials for teaching.	3.55	0.66	Strongly Agree
5	Through curriculum modernization, the development of digital infrastructure in the school system will gradually take place	3.26	0.66	Agree
	Cluster Mean and SD	**3.31**	**0.62**	**Agree**

Table 1 demonstrates the perceptions of lecturers regarding curriculum modernization and its potential to facilitate 21st-century skill acquisition in universities in Anambra State. Out of the five items related to curriculum modernization, four items have mean ratings ranging from 2.50 to 3.49, indicating agreement among lecturers that curriculum modernization can support 21st-century skill acquisition. Item 4, on the other hand, has mean ratings ranging from 3.50 to 4.49, suggesting strong agreement among lecturers in that particular area of study. The overall cluster mean of 3.30 indicates that lecturers

generally agree that curriculum modernization can facilitate 21st-century skill acquisition in universities. The standard deviation scores for all the items are within the same range. This implies that the respondents' opinions were relatively homogeneous, indicating a degree of consensus among the lecturers.

Research Question 2: **In what way can digital administration facilitate 21st century skill acquisition in universities?**

Table 2: Mean ratings and standard deviation scores of respondents on how digital administration facilitate 21st century skill acquisition in universities

SN	Digital administration and 21st-century skill acquisition	$\bar{x}$	SD	Decision
6	ICT is used to display information about business education program on its website making it easy to showcase the university	4.55	0.68	Strongly Agree
7	Computers network are extensively used for accounts-related, clerical, and general administrative duties in the university.	3.41	0.60	Agree
8	Information about students can be accessed online.	3.32	0.68	Agree
9	It eliminates the use of a heap of files in offices	3.50	0.61	Agree
10	Examination results and assessments are released online.	3.23	0.60	Agree
11	It eliminates cheating and manipulation	3.11	0.84	Agree
12	Payments of fees are processed online preventing fraudulent loss of revenue, to students who would want to evade payment.	3.23	0.78	Agree
	Cluster Mean and SD	**3.30**	**0.68**	**Agree**

Table 2 presents the perceptions of lecturers regarding digital administration and its potential to facilitate 21st-century skill acquisition in universities in Anambra State. Out of the seven items related to digital administration, six items have mean ratings ranging from 2.50 to 3.49, indicating agreement among lecturers that digital

administration can support 21st-century skill acquisition. Item 1, on the other hand, has a mean rating between 3.50 and 4.49, suggesting strong agreement among lecturers in that particular area of study. The overall cluster mean of 3.30 demonstrates that all the lecturers in that area of study agree that digital administration can facilitate 21st-century skill acquisition in universities The standard deviation scores for all the items are within the same range, indicating a relatively homogeneous opinion among the respondents. This suggests a consensus among the lecturers regarding the role of digital administration in enhancing 21st-century skills.

Hypothesis Testing

Hypothesis One

There is no significant difference between the mean ratings of business educators on how curriculum modernization can facilitate 21st century skill acquisition in universities in Anambra state with respect to age.

Table 5: Summary of t-test analysis of mean ratings of business educators on how curriculum modernization can facilitate 21st century skill acquisition in universities with respect to age.

Age	N	Mean	SD	df	t-value	p-value	Decision
25 – 45 year	25	3.40	.37	31	1.868	0.71	Accept Ho
46 years and Above	8	3.07	.38				

The data from the table indicated that there is no significant difference between the mean response of mean rating of business educators on how curriculum modernization can facilitate 21st-century skill acquisition in universities with respect to age (t= -1.318, df= 31, p= 0.71> 0.05). the hypotheses were accepted indicating that both age bracket do not differ significantly in their mean responses on how curriculum modernization can facilitate 21st century skill acquisition in universities.

Hypothesis Two

There is no significant difference between the mean rating of business educators on how digital administration can facilitate 21st century skill acquisition in universities with respect to age.

Table 8: Summary of t-test analysis of mean ratings of business educators on how digital administration can facilitate 21st century skill acquisition in universities with respect to age.

Age	N	Mean	SD	df	t-value	p-value	Decision
25 – 45 year	25	3.61	1.21	31	1.024	0.314	Accept Ho
45 years and Above	8	3.03	.18				

The data from the table indicated that there is no significant difference between the mean response of mean rating of business educators on how digital administration can facilitate 21st century skill acquisition in universities in Anambra state with respect to age (t= -1.024, df= 31, p= 0.31> 0.05). the hypotheses were accepted indicating that both age bracket do not differ significantly in their mean responses on how digital administration can facilitate 21st century skill acquisition in universities.

Discussion of Findings
The results were discussed under the following subheadings:

Curriculum modernization and 21st-century skill acquisition in universities
The study findings indicate that curriculum modernization brings about several positive outcomes for students. These include exposing students to new ideas and opposing viewpoints, demonstrating the power of collective thinking, and providing opportunities for creative expression beyond traditional creative subjects. These findings highlight the significance of updating and adapting the curriculum in educational institutions to enhance the acquisition and development of skills considered crucial in the 21st century.

The findings underscore the importance of maintaining the relevance and responsiveness of business education programs to meet the evolving needs of society. By updating the curriculum, educational institutions can ensure that students are adequately prepared for the challenges and opportunities present in the 21st century job market.

These findings align with the research conducted by Baydas and Goktas (2016), which emphasizes the importance of curriculum modernization in implementing and applying digital skills throughout the educational process. Additionally, there is necessity for curriculum modernization to address digital skills and facilitate professional development.

Digital administration and 21st century skill acquisition in universities

The study findings demonstrate that the utilization of digital administration practices brings several benefits to business education programs. These benefits include the ability to display information about the program on the university's website, making it easier to showcase the university to prospective students. It also helps in eliminating cheating and manipulations, among other advantages. These findings highlight the positive impact of incorporating digital tools and technologies in administrative processes on the development and acquisition of skills necessary for success in the 21st century.

Integrating digital administration practices in business education positively influences the acquisition of 21st-century skills among students. As a result, it is crucial for universities to embrace and integrate digital technologies in their administrative processes. By doing so, universities can create an environment that supports skill development and prepares students for success in the modern world.

These findings align with the research conducted by Dike (2019), which emphasizes that digital administration involves the use of electronic processes and information and communication technology (ICT) tools and applications. The purpose of digital administration is to enhance productivity, skill development, and efficiency in the internal administrative system, and responsiveness to the public.

Conclusion

Digital transformation is a vital aspect of acquiring 21st century skills in universities. The adoption of digital technology has revolutionized the educational sector, making it possible for students to access vast amounts of information, communicate and collaborate with peers and instructors, and develop skills that are relevant in the 21st century. The benefits of digital transformation in education cannot be overstated, as it has improved the quality of education, increased student engagement, and fostered a culture of innovation.

Recommendations

1. Curriculum planners should revamp the business education curriculum to emphasize experiential learning and real-world application of knowledge and skills by integrating relevant and future-focused content, students can develop the skills required for success in the 21st century.
2. The university management should create a centralized digital administration hub within the business education department. This hub should serve as a platform that utilizes digital tools and technologies to streamline administrative processes and provide students with hands-on experience in using them
3. Develop an updated and relevant curriculum: An updated curriculum should be developed that aligns with current trends and technology advancements in the business world. This will ensure that students are equipped with the necessary skills to succeed in the 21st century workplace.
4. Evaluate and measure effectiveness: Regular evaluation and measurement of the effectiveness of the digital transformation programme should be carried out to identify areas of improvement and ensure that the programme meets its objectives.

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AUTONOMOUS LEARNING – A THEORETICAL APPROACH

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Abstract: *Autonomy is a pedagogical concept with multiple educational dimensions, the most important correlative notions being involvement, freedom of choice, responsibility, critical thinking, and metacognition. Educational autonomy is a pedagogical concept with multiple educational dimensions, important correlative notions being activation, freedom of choice, responsibility, critical thinking, and metacognition. The common teacher-student actions aim to increase the student's autonomy and include the acquisition of meta-knowledge and the use of meta-cognitive strategies, reflection on knowledge, performing self-evaluations and co-evaluations, combining individual activity with cooperative work activities, and mutual exchanges. The student thus contributes responsibly to his own training, (self) training. The autonomy of the student is objectified in the management of the new knowledge, in setting their own goals and strategies of learning and training, in the hierarchy of priorities, in the design of the strategies of (self) monitoring and self-evaluation, in the curricular management, in the time management. Just like self-education, self-training refers to the conscious, voluntary processes, in which the person undertakes actions aimed, consciously, at qualitative transformations, which lead to the development of his own personality. In self-training, "learning to learn" is essential, understood as the assimilation of cognitive/intellectual and metacognitive skills, contributing to the transformation of self-instruction and self-training into a necessity.*

Introduction

Educational autonomy is that competence of self-determination that materializes in the freedom of elections and in the responsible realization of one's own actions, in the formation of beliefs and in the internalization of values. (Bocoş, Răduţ-Taciu, Stan, Chiș & Andronache, 2016). It is the student's ability to work independently and have the freedom to do so. Self-directed learning would allow the student to customize their learning program based on academic strengths and personal interests and monitor their own achievements.

Competency-based learning is developed on a teaching-learning system that constantly develops students' autonomy and ability to "learn to learn".

Effective learning is often associated with learning autonomy (Boekaerts, 1999), in the sense that increasing learning efficiency can be achieved in school by cultivating learning autonomy.

What are autonomous learning and autonomy in learning?

According to Holec's definition, 1981, autonomy in learning can be seen as the ability of students to self-conduct their own learning, which means taking responsibility for decisions on different aspects of the learning process. In self-directed learning, learners' choices remain mainly at the level of learning management, i.e. behavioral learning level and self-targeting refer to the practical part of learning such as the selection of learning materials, methods, learning place and time, partners, etc.

Autonomous learning, first of all, means critical thinking, planning and evaluation of learning and reflection, a conscious effort on the part of the learner to continuously monitor the learning process from start to finish (Benson, 2001). This is the cognitive side of autonomous learning.

George Betts & Jolene Kercher, 1999, developed a model of autonomous learning (ALM) with the aim of producing independent and self-directed students. Initially, it was intended for gifted and talented students, but this model can work very well for all categories of students.

By developing an alternative learning curriculum, autonomous learning equips students with "positive skills, concepts and attitudes in the cognitive, emotional, social and physical fields", creating students who self-train and self-develop in the long term (Betts & Kercher, 1999).

The self-learning model outlines 5 different dimensions:

- **Orientation** — students learn about the model of autonomous learning and develop their own learning program.
- **Individual development** — students develop the skills and attitudes they need to become involved in their training and development throughout their lives.
- **Enrichment** — students learn content outside of their school curriculum.
- **Seminars** — students demonstrate their ability to learn and work together in groups, under the guidance of a teacher.
- **In-depth study** — students' study in depth in their research to form themselves throughout their lives, through individual work and through projects, find mentors, and learning is complemented by the assessment of their own learning.

If students are able to be deeply involved in their own learning and training process, to develop and practice metacognitive skills, monitoring, managing and adjusting their learning, then they will become responsible and autonomous in the learning process (Bocoş, 2013).

A student becomes autonomous when:

- one learns on own initiative, in an individual, independent and personalized way, practicing active, independent, divergent, evaluative thinking;

- one is aware that it goes through a learning and training process in a self-taught manner and becomes exclusively responsible for it;

- it reflects on oneself, interacts with oneself, achieves intrapersonal communication, communicates with one's own inner world, researching and understanding oneself, being

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mainly aware of how one develops one's own interests and the metacognitive strategies it uses;

- one reflects intensely on what one has to learn and elaborates on the steps one will take in this regard and selects the metacognitive strategies that he will apply;

- one organizes work and advances oneself, interacting with the contents of the learning, with the teacher, with colleagues;

- self-manages and self-monitors the learning situations and activity sequences one faces in a formal, non-formal or informal context, applying metacognitive strategies and practicing metacognitive skills;

- one sets the goals and objectives of learning and the strategies one will apply, becoming aware of the modelling connections between their components: methods and procedures, techniques and tools of work, curricular resources, and ways of self-evaluation;

- engages in learning its entire intellectual, physical, volitional and affective potential, proves active, critical, and creative spirit;

- has significant initiatives in learning and implements them, acts alone or in a group, documents, consults with colleagues and, if necessary, asks for help from the teacher, transfers the acquired acquisitions to new educational contexts;

- has an active, positive educational attitude that favors lifelong learning (Bocoș, 2013).

Autonomy is a goal of active (inter)learning; it can be acquired only when learning itself becomes a process of practicing autonomy, thanks to independent, active, divergent, critical, logical, evaluative thinking, etc. (Bocoș 2013).

According to the "Praxiological Dictionary of Pedagogy", (Bocoș, Răduț-Taciu, Stan, Chiș, & Andronache, 2016), student autonomy/ autonomy in learning represents the competence of self-determination, which develops through pedagogical interaction, and which gives the student freedom of choice and full responsibility for one's own actions in this regard. The autonomous student has his own impulses in terms

of learning and knowledge, formulates his learning goals, responsibly assumes the learning task, and the problem to be solved selects and combines his own resources, chooses his strategies for action, monitoring and evaluation, constructs his own learning and knowledge, and can continue to learn, independently of the help received from the outside (he does not need others).

The joint teacher-student actions have as objective the increase of the student's autonomy and include acquiring meta-knowledge and using metacognitive strategies, reflecting on knowledge, carrying out self-evaluations and co-evaluations, combining individual activity with cooperative work activities, and mutual exchanges. The student thus responsibly contributes to his or her own training, (self) training.

The concept of "self-training" is a complex one, and to define it we use the "Praxiological Dictionary of Pedagogy" (Bocoș, Răduț-Taciu, Stan, & Chiș, 2016). Self-training directed towards cognitive learning, acquiring knowledge, and developing cognitive/intellectual skills represents ***cognitive self-training***. Cognitive self-training presupposes the existence of the knowing subject of clear conceptions about the psychological mechanisms at stake in autonomous learning, the cognitive and metacognitive strategies used, and the metacognitive competencies acquired. In self-training, the "learning of learning" is essential, understood as the assimilation of cognitive/intellectual and metacognitive abilities, it contributes to the transformation of self-training and self-training into a necessity.

The system of individualized, conscious and active approaches assisted or unassisted, of self-socio-construction of becoming, of qualitative transformation of the entire personality, in all levels ***constitutes the educational self-training***. Just like self-education, self-training refers to the conscious, voluntary, intentional, complex processes, within which the person undertakes actions aimed, consciously, at the qualitative transformation, the development of his own personality on different levels (intellectual, moral, social, affective, aesthetic, physical).

In self-training it is essential not so much "to learn", but "*to learn to learn*", "*to learn to become*", and "*to learn to be able*", which determines the modification of the relationship between learning and teaching, as well as the modification of the role of the educator in the transmitter, organizer, coordinator in the mediator, helper, counsellor, tutor, adviser of those who educate themselves. Self-training is a complex process, induced by education, consubstantial to education, a

process parallel to it, which is the expression of its maximum efficiency. The various results recorded in the process of self-training are capitalized by the individual in the process of his own becoming, still setting formative goals, refining his competencies of various types, and identifying effective strategies of social and professional integration.

When self-training is directed towards the formation and development of metacognitive skills or learning to learn and metacognitive behavior, we speak of metacognitive self-training. Metacognitive behavior includes all the reactions and actions that a person performs individually, in order to know his own processes, mental and emotional activities and their products, in order to (self) actively regulate cognitive functioning (Bocoș, Răduț-Taciu, Stan, Chiș & Andronache 2016, p. 232).

What is not autonomy in learning?
Little (1991) brings some additions to what autonomy is NOT:

(1) autonomy is not limited to learning without a teacher;

(2) in the context of the class, autonomy does not imply an abdication of responsibility on the part of the teacher; it is not a matter of letting students do their own thing as best as they can;

(3) autonomy is not another method of teaching;

(4) autonomy is not a unique, easy-to-describe behaviour;

(5) autonomy is not a state of balance achieved by learners.

Is autonomous learning a learning process without a teacher?
Little (1990) argues that autonomous learning is not learning on its own account without a teacher.

Little (1991) emphasizes that the autonomy of the student and the autonomy of the teacher are interdependent and that teachers who want to promote greater autonomy of the student must "start with themselves", reflecting on their own beliefs, practices, experiences and expectations regarding the teaching/ learning situation.

Darby (2005) considers the teacher as a decisive teacher in stimulating the participation of students in their learning. The teacher who supports autonomy shapes the self-regulating practices for his class. The

teacher's passion and enthusiasm for his subject can be contagious, increasing the motivation of children's desire to learn. When children are excited to learn, when the environment is optimally created by their teacher to facilitate learning, they will try new strategies and experiment with their ideas independently.

Sierens et al. (2009) found that the support of autonomy from the teacher cultivates the interest of the students and stimulates intrinsic motivation.

Richardson et al. (2014) argues that the way in which a teacher supports autonomy in learning could motivate one to develop autonomous research projects.

The educator plays the role of a contextual facilitator in meeting the needs of the students, states (Hospel & Galand, 2016).
As Skinner et al. declares (2008), autonomy has often been demonstrated as a huge indicator of changes in engagement. If it is fulfilled, autonomy generates constructive emotional, psychological, and behavioral results (Jang et. al., 2012) and is significantly linked to teacher success and, consequently, to student enthusiasm (Derakhshan et al., 2020).
Autonomy support as described by Reeve (2016) refers to the effort to provide instruction in an environment that supports students' demands for autonomy and the educator-learner relationship.

Conclusions

The role of the teaching staff remains an important one in the development of the autonomy of the students they instruct and train. The teacher must not completely give up control of the learning activities. It will establish the limits and benchmarks in which and after which the student can develop independently. The more autonomous the student becomes, the less the teacher's control will be. Respecting students' ideas, sharing teaching decisions, setting learning goals and leading them to take responsibility for their learning rather than prescribing the learning process will all increase student motivation and thus boost their success.

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PERCEIVED IMPACT OF MULTIMEDIA TOOLS ON ILESA WEST SECONDARY SCHOOL STUDENTS LEARNING OF ENGLISH LANGUAGE CONCEPTS

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Abstract: *The study Perceived Impact of Multimedia Tools on Ilesa West Secondary School Students Learning of English Language Concepts. The study is a descriptive study; a total number of 300 respondents were used. The instrument for data collections was inventory and was inventory and was structured by the researcher for data collection and reliability level was 0.75. Data collected were analyzed using descriptive statistics specifically mean, standard deviation, frequency counts and Person Product Moment Correlation (PPCM). The findings of the study revealed that Multimedia tools enable you to gain better understanding of English Language concepts that are unclear to you, Multimedia tools give you rom to receive an answer at the same time, as well as being able to exchange responses to questions with teachers in real time, Multimedia tools encourage you to share our thought and opinion on English Language concepts, Multimedia tools develop your critical thinking skills and enrich your learning experience in learning English Language concepts, Multimedia tools help to develop your language skills chiefly English Language, Multimedia tools assist you in comprehending text by utilizing prior knowledge new terminology, Does the appealing features of the multimedia tools allow you to boost your stimulation to the learning process involved in learning English Language concepts, application of multimedia tools*

in learning English Language also improve memory retention, learning accomplishment and satisfaction. Also, the study has revealed that there is significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it. It also revealed that there is a significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not. As a result of the findings in this study, this can strengthen the literatures of Multimedia tools.

Introduction

Allam & Elyas (2016) state that in the 21st century, technology is increasingly employed in the field of language learning because it helps develop learners' language skills. The implementation of technology in language classroom is considered useful since the new generation has different ways of learning, practicing, and interaction with each other. Students are able to use technology quite well and know how to apply it to their learning. Students in the 21st century are more accustomed to visual learning. According to Kallas (2017), teachers are encouraged to employ multimedia in their classroom because it provides the students a combination of visual images and aural input.

Multimedia is a combination of more than one media type such as text (alphabetic or numeric), symbols, images, pictures, audio, video, and animations usually with the aid of technology for the purpose of enhancing understanding or memorization (Guan. N., Song. J., Li, D., 2018). The hardware and software used for creating and running of multimedia applications is known as multimedia technology (Kapi., A.Y., Osman, N., Ramil, and R.Z., (2017). Multimedia technology has some characteristics like integration, diversity, and interaction that enable people to communicate information or ideas with digital and print elements. The digital and print elements in this context refer to multimedia-based applications or tools used for the purpose of delivering information to people for better understanding of concepts. Indeed, various aspects of human endeavors, especially the educational

sector, are being transformed by the advent of Information and Communication Technology (ICT). ICT involves the use of hardware and software for the purpose of collecting, processing, storing, presenting, and sharing of information mostly in digital forms. Multimedia technology is an important aspect of ICT that deals with how information can be represented and presented digitally, using different media such as text, audio, video, among others (Guan., N., Song. J., Li, D., 2018). It involves the combination of several technologies provide information in the best possible formats, packages, and sizes.

In general, multimedia learning is a method in which learners are exposed to the use of images, audio such as video and animation. Multimedia learning tools may be utilized to assist students in comprehending the text by utilizing prior knowledge and new terminology. Further, the variety of components in multimedia tools can aid students in their learning process and enhance their enthusiasm to study (Abdul Samat & Abdul Aziz., 2020). Besides, the application of multimedia tools in learning and teaching may also improve memory retention, learning accomplishment and satisfaction with the material presented to students on the material provided. According to the research of Afyouni, B., Tabatabai, M., & Ghasempour, A. 2016), the findings of the study show that learning through multimedia tools is far superior to the traditional technique known as lecture class. It has the abilities to create learning more interesting and to engage students in the learning environment. Apart from that, multimedia capabilities allow students to actively participate with course while learning, while somehow enjoying visual representation and audio components for further attractiveness. In addition, multimedia tools can improve engagement between teachers and students and make the learning process more goals-oriented (Almarabeh, Hilal & Amer, E.F., & Amjad Sulieman 2015). These applications assist students in gaining a better understanding of a topic that is unclear to them and receiving an answer at the same time, as well as being able to exchange responses to questions with teachers in real time. Hence, no one will miss out on learning the topic and will be able to comprehend the subject or topic. Besides, all students are encouraged to share their thoughts and opinion on the topic, which will develop their critical thinking skills and enrich their learning experience.

In a nutshell, multimedia tools in teaching and learning help to enhance student prior knowledge since the appealing features of the multimedia tools might allow them to boost their stimulation to the learning

process. This can assist both students and teachers enhance the quality of their education while also motivating students to study hard in order to get a higher grade and performance in the respective subject.

Learning is a difficult journey if teachers continue to use old methods. As a result, teachers must understand how to use multimedia tools in the classroom, especially in the 21st century. Advanced of technology brought the students to a new way of thinking so the teachers should be able to keep up with the students in order to improve teaching and learning quality. By fully utilize multimedia tools in the classroom, students are able to discover their latent potential and enhance their ability, allowing both teachers and students to raise their self-confidence due to the efficacy of this technique. It also helps students develop their thinking and reasoning skills, which will allow them to be more creative. After all, multimedia tools are a highly successful approach for both the teachers and the students in a positive way. Multimedia refers to any computer-mediated software or interactive application that integrates text, color, graphical images, animation, audio sound, and full motion video in a single application.

Statement of the Problem
Our contemporary society has been rapidly increased in the aspect of Technology. The world is technologically advanced. It is sometimes referred to as a global village. The reason for this assertion is attributed to the impact of multimedia tools on education. Multimedia tools has become popular in education, instructional delivery method, most chiefly in developed countries like Europe, America and others. Multimedia tools have been proven to be beneficial in delivering educational learning materials. Since the late 1980s, the progress of multimedia applications in the education sector has been demonstrated. Since the rapid growth of technology, particularly in multimedia applications, the education sector has gradually become more dependent on multimedia tools. Multimedia tools combine important elements such as texts, images, audios, videos, animations and user control all into one, making it easier, more engaging and effective by saving time. This due to the fact that multimedia tools assist students get a deeper understanding since multimedia applications engage all of the senses, including verbal listening and visual displays of knowledge, enabling the human brain to assimilate the information more easily. On top of that, students have access to a wide range of information through the use of electronic devices, mainly communication gadgets that are fully equipped, making it easier for students to explore for any information they require. The light of the above observations inspired

the researcher's curiosity to investigate the Perceived Impact of Multimedia Tools in Ilesa west secondary school students learning of English Language concepts.

Purpose of the study

The general purpose of the study is to investigate the perceived impact of multimedia tools on Ilesa west secondary school students learning of English Language concepts. To be specific therefore, the purposes of the study are to:

1. examine the existing multimedia tools used for learning English Language concepts in Ilesa west secondary schools.
2. investigate perceived impact of multimedia tools on the learning of English Language concepts in Ilesa west secondary schools.
3. investigate the challenges of using multimedia tools for learning English Language concepts in Ilesa west secondary schools.

Research Questions

1. What are the existing multimedia tools used for learning English Language concepts in Ilesa west secondary schools?
2. What is the perceived impact of multimedia tools on the learning of English Language concepts in Ilesa west secondary schools?
3. What are the challenges of using multimedia tools for learning English Language concepts in Ilesa west secondary schools?

Research Hypotheses

$H0_1$: There is no significant difference in the learning effectiveness of students who learned English language concepts with multimedia tools and those who learned without it .

$H0_2$: There is no significant difference in the attitude of secondary school students to learning of English language concepts when multimedia tools are exployed and when not.

Scope of the Study

This research will be conducted in Ilesa west, Osun state, Nigeria. It will cover the secondary school students in Ilesa west (Public and private). Geographically, the study will cover 10 secondary schools in Ilesa west in Osun state (5 public and 5 Private schools).

Significance of the Study

This study will be highly crucial to government officials at all level, the parents, educational planners, decision and policy makers as well as other stakeholders in education. This study will reveal the impact of multimedia tools on Ilesa west school students learning concepts in English Language. It will improve students' potential to use multimedia tools for learning. The study will charm the Government by applying various methods to boost the recital of the students. Through this study, the selected students will be able to know the impact of multimedia tools when learning concepts in English Language.

Limitation to the Study

This study was limited to ten schools in Ilesa west, Osun State in order to avoid manipulation of variables.

Results

Table 1: Respondent Distribution by Gender (N = 300)

	F	%
Male	105	35.0
Female	195	65.0
Total	300	100.0

Table 1 presents the gender distribution of respondent. It shows that 35.0% are male while 65.0% are female.

Analysis of Research Question

Research Question 1: What are the exiting multimedia tools used for learning English language concept in ilesha west secondary school?

Table 2: Analysis to know the exiting multimedia tools used for learning English language concept in ilesha west secondary school (N = 300)

S/N	ITEMS	RESPONSE									
		Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	f	%
1	I used desktop	167	55.7%	66	22.0%	26	8.7%	31	10.3%	10	3.3%

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	to access online resources				
2	I used digital camera for showcasing work in firm or photograph	75 25.0%	136 45.3%	31 10.3%	45 15.0%	13 4.3%
3	I used USB for sharing of document to device	114 38.0%	80 26.7%	43 14.3%	49 16.3%	14 4.7%
4	I use laptop to watch most of my educative lessons	99 33.0%	102 34.0%	53 17.7%	31 10.3%	15 5.0%
5	I download most of my learning materials online	122 40.6%	85 28.3%	52 17.3%	28 9.3%	13 4.3%
6	I use emails to communicate with others	86 28.6%	108 36.0%	46 15.3%	50 16.7%	10 3.3%
7	I use WIFI for connectivity of phone and digital	100 33.3%	93 31.0%	53 17.7%	41 13.7%	13 4.3%

	devices									

Table 2 presents the analysis to know the exiting multimedia tools used for learning English language concept in ilesha west secondary school. the items the respondents agreed with were; they used desktop to access online resources (77.7%), they used digital camera for showcasing work in firm or photograph (70.3%), they used USB for sharing of document to device (64.7%), they use laptop to watch most of my educative lessons (67.0%), they download most of my learning materials online (68.9%), they use emails to communicate with others (64.6%), they use WIFI for connectivity of phone and digital devices (64.3%).

Research Question 2: What is the perceived impact of multimedia tools on learning of English Language concept in Ilesha Secondary school?

Table 3: Analysis to know the perceived impact of multimedia tools on learning of English Language concept in Ilesha Secondary school (N = 300)

S/N	ITEMS	RESPONSE								
		Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	f	%
1	Multimedia tools enable you to gain better understanding of English Language concepts that are unclear to you	157	52.3%	75	25.0%	29	9.7%	29	9.7%	10	3.3%
2	Multimedia tools give you rom to receive an	94	31.3%	124	41.3%	39	13.0%	33	11.0%	10	3.3%

	answer at the same time, as well as being able to exchange responses to questions with teachers in real time				
3	Multimedia tools encourage you to share our thought and opinion on English Language concepts	122 40.7%	100 33.3%	42 14.0%	31 10.3%	5 1.7%
4	Multimedia tools develop your critical thinking skills and enrich your learning experience in learning English Language concepts	116 38.7%	114 38.0%	45 15.0%	22 7.3%	3 1.0%
5	Multimedia tools help to develop your language skills chiefly English Language	119 39.7%	106 35.3%	43 14.3%	23 7.7%	9 3.0%
6	Multimedia	107	116	42	30	5

	tools assist you in comprehending text by utilizing prior knowledge new terminology	35.7%	38.7%	14.0%	10.0%	1.7%
7	Does the appealing features of the multimedia tools allow you to boost your stimulation to the learning process involved in learning English Language concepts.	118 39.3%	99 33.0%	48 16.0%	30 10.0%	5 1.7%
8	Does the application of multimedia tools in learning English Language also improve memory retention, learning accomplishment and satisfaction	122 40.7%	110 36.7%	37 12.3%	26 8.7%	5 1.7%

Table 3: Analysis to know the perceived impact of multimedia tools on learning of English Language concept in Ilesha Secondary school. the items the respondents agreed with were; Multimedia tools enable you to gain better understanding of English Language concepts that are unclear to you (77.3%), Multimedia tools give you rom to receive an answer at the same time, as well as being able to exchange responses to questions with teachers in real time (72.6%), Multimedia tools encourage you to share our thought and opinion on English Language concepts (74.0%), Multimedia tools develop your critical thinking skills and enrich your learning experience in learning English Language concepts (76.0%), Multimedia tools help to develop your language skills chiefly English Language (75.0%), Multimedia tools assist you in comprehending text by utilizing prior knowledge new terminology (74.4%), Does the appealing features of the multimedia tools allow you to boost your stimulation to the learning process involved in learning English Language concepts. (72.3%), Does the application of multimedia tools in learning English Language also improve memory retention, learning accomplishment and satisfaction (77.4%).

Research Question 3: What are the challenges of using multimedia tools for learning English Language concept in Ilesha west secondary schools?

Table 4: Analysis to know the challenges of using multimedia tools for learning English Language concept in Ilesha west secondary schools (N = 300)

S/N	ITEMS	RESPONSE								
		Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
		F	%	F	%	F	%	F	%	f	%
1	Limited technology skills of the student	134	44.7%	79	26.3%	40	13.3%	31	10.3%	16	5.3%
2	Student's resistance to the adoption of multimedi	85	28.3%	130	43.3%	39	13.0%	36	12.0%	10	3.3%

	a tools					
3	Inadequate of multimedia tools to support learning	106 35.3%	91 30.3%	53 17.7%	40 13.3%	10 3.0%
4	Lack of funds to procure the needed multimedia tools for learning English Language concepts	121 40.3%	92 30.7%	39 13.0%	35 12.0%	13 4.3%
5	Lack of infrastructure, like power supply and other multimedia tools	123 41.0%	96 32.0%	45 15.0%	27 9.0%	8 2.7%
6	Network connection problem	113 37.7%	88 29.3%	39 13.0%	43 14.3%	16 5.3%

Table 4: Analysis to know the challenges of using multimedia tools for learning English Language concept in Ilesha west secondary schools. The items the respondents agreed with were; Limited technology skills of the student (71.0%), Student's resistance to the adoption of multimedia tools (71.6%), Inadequate of multimedia tools to support learning (65.6%), Lack of funds to procure the needed multimedia tools for learning English Language concepts (71.0%), Lack of infrastructure, like power supply and other multimedia tools (73.0%), Network connection problem (66.0%).

Analysis of Research Hypothesis
Hypothesis 1: There is no significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it.

Table 5: Summary of t-test Analysis to know if there is significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it.

	N	Mean	S.D	T	Df	Sig. (2-tailed)	Remark
Learned English Language concept with multimedia tools	13 7	20.0 2	5.5 8	9.71 2	29 8	0.00	Significant
Learned English Language concept without multimedia tools	16 3	27.7 7	9.7 9				

Table 5 presents the analysis to know if there is significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it. The result reveals that there is a significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it (t = 9.712, df = 298, p < 0.05). This implies that the earning effectiveness of student who learned English Language concept with multimedia tools is different from those who learn English Language without multimedia tools.

Hypothesis 2: There is no significant different in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not.

Table 6: Summary of t-test Analysis to know if there is significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not

	N	Mean	S.D	T	Df	Sig. (2-	Remark

						tailed)	
Learned English Language concept with multimedia tools	147	22.26	6.41	8.743	298	0.00	Significant
Learned English Language concept without multimedia tools	153	29.91	8.62				

Table 6 presents the analysis to know if there is significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not. The result reveals that there is a significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not (t = 8.743, df = 298, p < 0.05). This implies that the attitude of secondary school students to learning English Language concepts when multimedia tools are explored is different when multimedia tools are explored.

Discussion
This research aimed mainly to: examine the existing multimedia tools used for learning English Language concepts in Ilesa west secondary schools, investigate perceived impact of multimedia tools on the learning of English Language concepts in Ilesa west secondary schools and investigate the challenges of using multimedia tools for learning English Language concepts in Ilesa west secondary schools. In line with the above objectives, the following findings were obtained and discussed.

Research Question One
Results on research question one revealed existing multimedia tools used for learning English language concept in Ilesha west secondary school. The items the respondents agreed with were; they used desktop to access online resources, they used USB for sharing of document to device, they use laptop to watch most of my educative lessons, they

download most of my learning materials online, they use emails to communicate with others, they use WIFI for connectivity of phone and digital devices which these above results are consistent with AlSaleem (2020) findings on Computers in Teaching English Language. E-books (PDF, Epub.), Graphics (Digital Images), Mp3 Players (Digital Audio Players), Video players (VCD, DVD players) and Animations. This finding is also consistent with Ghavifekr, Abd Razak, Ghani, Ng Yan Ran, Meixi & Tengyue (2014) study on ICT Integration In Education: Incorporation for Teaching & Learning Improvement. The study indicates that most of the teachers in the Klang Valley are more likely to use ICT applications and resources for educational purposes, such as the Internet, multimedia computer, projector system, PowerPoint presentation, or word processor programs during the teaching and learning process. At the same time, the advanced usage of ICT like build a learning website or creating learning. The findings are consistent with Rathore and Sonawat (2015) findings on Integration of Technology in Education and its Impact on Learning of Students. Devices like cell phones, mp3 players, and tablet computers are now being used as learning tools in forward-thinking schools. These findings negate the results of (Shabiralyani, Hasan, Hamad and Iqbal, 2015) study on Impact of Visual Aids in Enhancing the Learning Process Case Research. This research has also shown that visual aids teaching/learning resources such as TV, CDs computers, recording tapes and radios were not the in some schools and therefore could not be used by both teachers and students for teaching and learning respectively. Teachers also feel comfortable guiding and discussing with their students within or outside the universities through several digital platforms such as WhatsApp, Facebook, and google groups (Hodgson and Shah, 2017) which the result of our finding negates the result of this finding.

Research Question Two
Results on research question two revealed the perceived impact of multimedia tools on learning of English Language concept in Ilesha Secondary school. The items the respondents agreed with were; Multimedia tools enable you to gain better understanding of English Language concepts that are unclear to you, Multimedia tools give you room to receive an answer at the same time, as well as being able to exchange responses to questions with teachers in real time, Multimedia tools encourage you to share our thought and opinion on English Language concepts, Multimedia tools develop your critical thinking skills and enrich your learning experience in learning English Language concepts. Multimedia tools help to develop your language

skills chiefly English Language, Multimedia tools assist you in comprehending text by utilizing prior knowledge new terminology, Does the appealing features of the multimedia tools allow you to boost your stimulation to the learning process involved in learning English Language concepts, Does the application of multimedia tools in learning English Language also improve memory retention, learning accomplishment and satisfaction. The results are consistent with Fu'ad and Nor Sam, (2021) study on Multimedia Tools in Teaching and Learning. These applications assist students in gaining a better understanding of a topic that is unclear to them and receiving an answer at the same time, as well as being able to exchange responses to questions with teachers in real time. Hence, no one will miss out on learning the topic and will be able to comprehend the subject or topic. Besides, all students are encouraged to share their thoughts and opinion on the topic, which will develop their critical thinking skills and enrich their learning experience. In a nutshell, multimedia tools in teaching and learning help to enhance student prior knowledge since the appealing features of the multimedia tools might allow them to boost their stimulation to the learning process. This can assist both students and teachers enhance the quality of their education while also motivating students to study hard in order to get a higher grade and performance in the respective subject. Learning is a difficult journey if teachers continue to use old methods. As a result, teachers must understand how to use multimedia tools in the classroom, especially in the 21st century. Advanced of technology brought the students to a new way of thinking so the teachers should be able to keep up with the students in order to improve teaching and learning quality. By fully utilize multimedia tools in the classroom, students are able to discover their latent potential and enhance their ability, allowing both teachers and students to raise their self-confidence due to the efficacy of this technique. It also helps students develop their thinking and reasoning skills, which will allow them to be more creative. After all, multimedia tools are a highly successful approach for both the teachers and the students in a positive way. The above results are also in line with Thamarana (2016) study. It is found that the majority of sample respondents agree with the idea that they feel comfortable with the idea of using Multimedia as a learning tool for English. They are designed to assist learning with tools which can be used in presentations, class room or laboratory learning, simulations, e-learning, computer games, and virtual reality, thereby allowing learners to process information both in verbal and pictorial forms (Alemdag and Cagiltay, 2018). Multimedia makes student more physically dependent. It includes harmful effects which direct children personality and mind too. Due to

lack of knowledge in teachers regarding multimedia, they don't provide correct knowledge that's by decreased student's academic achievement. Multimedia elements not provide proper knowledge related to concepts motivation (Singh S, Mishra S, 2013) which negates the above results of this finding. Hereby, those teachers prefer to deliver lessons face-to-face and show a negative attitude toward the online teaching mode. Likewise, Afridi and Chaudhry (2019) also found an unsatisfactory status of adopting technologies in instructional practices in all universities of Punjab due to several constraints which is against the above result of this research. A similar barrier has been identified by Akram et al. (2021b), where teachers reported that they don't find enough time to make the efficient use of ICT in raising their instructional practices' effectiveness which negates the results in this finding.

Research Question Three
Results on research question three revealed the challenges of using multimedia tools for learning English Language concept in Ilesha west secondary schools. The items the respondents agreed with were; Limited technology skills of the student, Student's resistance to the adoption of multimedia tools, Inadequate of multimedia tools to support learning, Lack of funds to procure the needed multimedia tools for learning English Language concepts, Lack of infrastructure, like power supply and other multimedia tools, Network connection problem. The results are collaborated with Abdulrahaman,, Olawoyin, Mejabi, Fulani, Fahm, and Azeez (2020) study on Multimedia tools in the teaching and learning processes: A systematic review. Several barriers to multimedia use in teaching and learning were revealed as a result of the review. Such barriers include resistance to the adoption of ICT, lack of teachers' confidence in the use of technology, resistance to change on the part of teachers, a lack of ICT skills and lack of access to ICT resources. Other barriers identified were the lack of support, lack of time to learn new technologies, lack of instructional content, and the physical environment in which multimedia delivery took place. Some studies reported respondents that perceived no benefits from the use of multimedia. These barriers certainly affect both the integration of multimedia in teaching and learning and the uptake of the multimedia tool. Most of the barriers identified could be classified into three groups with a major one being the fear or resistance to change. This means that change management must be an integral part of multimedia tools development and deployment in order to achieve the desired goal. Also, barriers such as lack of time and lack of resources should not be

underestimated. Some of the studies reported providing the hardware for the multimedia application and such an approach should be considered. Most multimedia tools are ICT driven and as such the identified barrier of lack of ICT skills is an important aspect that must be addressed. This can be done as part of the change process and would also boost the confidence of teachers to incorporate multimedia for teaching. It is important that the multimedia tool is designed and developed with the end-goal in mind. As indicated, some recipients of multimedia applications did not see any benefit in its use. This means that the multimedia tool should be designed to provide an experience that is worth the teachers and students' time, attention and effort. These results are consistent with Mulhim and E (2014) study, it was revealed that a number of factors that hindered teachers' IT integration: (1) shortage of time and (2) access to technology. However, in this study, some teachers avoided using IT integration in classrooms due to shortage of equipment and resources Al-Harbi (2014). This finding of this research supports the results of the study conducted by Hur, Shannon, and Wolf (2016). It was observed in this study that lack of funding/budget was found as the main barrier to integrating technology in education a teacher's resistance to the adoption of new technology, lack of ICT skills on the part of teachers, which this finding is consistent with Liu et al. (2017) this variable is associated with pedagogical beliefs. Ullah and Ali (2021) found that amid COVID-19, students from elite private schools in the urban areas received an online learning advantage over the students from public schools in the rural areas due to the lack of adequate infrastructure and competent teachers which is against the results of the findings. Akram H, Abdelrady AH, Al-Adwan AS and Ramzan M (2022) Findings also negates the result of the findings. A specified several barriers that hinder effective technology integration in teaching-learning practices, including lack of resources, leadership support, accessibility of ICT infrastructure, inadequate time, unclear policies, professional development, technical support, and lack of appropriate pedagogical models.

Research Hypothesis one
This study presents the analysis to know if there is significant difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it. This implies that the learning effectiveness of student who learned English Language concept with multimedia tools is different from those who learn English Language without multimedia tools, this result is consistent with Baharuddin, M. F., Masrek, M. N., & Shuhidan, S. M. (2020) study on Content validity of assessment instrument for

innovative work behaviour of Malaysian school teachers. Using multimedia tools may help the student and teacher be more flexible in terms of time and place. Learning and teaching may be made more pleasant and enjoyable by using multimedia tools. Learning by using multimedia tools encourages the students to be more inventive in their classrooms. It will stimulate creativity and ability in students, allowing them to feel confident in their capacity to design their own learning materials, evaluate, browse information and sharing their knowledge to classmates. Obviously, this approach of learning and teaching method may engage the students and empower them to develop and design their own learning material instead of absorbing representations provided by others. After all, multimedia tools enable students to engage deep reflective thinking and master basic skills such as writing and problem solving. Olagbaju, O.O. & Popoola, A.G. (2020) The use of audio-visual resources in teaching actively engages both the teacher and learners in conversation during the course of instruction. Audiovisual technology improves the quality of learning and students' learning experience because concepts are easily presented and comprehended as words are complemented with images and animations. Interactive Multimedia Tools and its Strength on English Pronounciation at the Secondary School Level. (Hassan Saleh Mahdi, 2019) recommend against it as the transitions can increase the anxiety of the presenter and they can easily mishandle their timing (Swathipatnaik & Davidson, 2016). Certainly, multimedia technology brings about improvement in teaching and learning, however, there are a number of limitations in this technology for educational purposes. Some of these limitations include unfriendly programming or user interface, limited resources, lack of required knowledge and skill, limited time and high cost of maintenance among others (Al-Ajmi and Aljazzaf, 2020; Putra, 2018) which the outcome of this finding negates the above result. The study concluded that academic performance of students in social studies was greatly improved when multimedia technique was applied as compared to traditional classroom (Ilhan and Oruc, 2016).

Research Hypothesis Two
This study presents the analysis to know if there is significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not. The result revealed that there is a significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not. This implies that the attitude of secondary school students to learning

English Language concepts when multimedia tools are explored is different when multimedia tools are not explored. The result is supported with Thamarana (2016) Study on Use of Multimedia Technologies in English Language Learning. The students" survey results suggested that the majority of the students seemed to have positive attitudes towards the use of Multimedia Technologies in English language education. They agreed that multimedia technologies play a great role in language learning according to their own pace, helps in self-understanding and it does not hinder interaction with the instructor. The findings also suggest that multimedia technologies supported language learning help in individual motivation for the students and understanding of concepts are also easy. One of the ultimate goals of multimedia language teaching is to promote students" motivation and learning interest, which can be a practical way to get them involved in the language learning (Thamarana, 2015). The use of modern materials of the global network in teaching helps students to obtain relevant knowledge about the language and culture of foreign countries. It is against the finding of (Alhumaid, 2019) in order to eliminate these negative effects, the use of technology in educational environments should be carried out in a controlled manner.

Conclusion
In this research, a result of the survey of the Perceived Impact of Multimedia Tools on Ilesa West Secondary School Students Learning of English Language Concepts has been presented and discussed. Based on the findings from this study, it was conducted that Multimedia Tools have positive effects on Ilesa West Secondary School Students Learning of English Language Concepts. Study revealed that Multimedia tools enable you to gain better understanding of English Language concepts that are unclear to you, Multimedia tools give you rom to receive an answer at the same time, as well as being able to exchange responses to questions with teachers in real time, Multimedia tools encourage you to share our thought and opinion on English Language concepts, Multimedia tools develop your critical thinking skills and enrich your learning experience in learning English Language concepts, Multimedia tools help to develop your language skills chiefly English Language, Multimedia tools assist you in comprehending text by utilizing prior knowledge new terminology, Does the appealing features of the multimedia tools allow you to boost your stimulation to the learning process involved in learning English Language concepts, application of multimedia tools in learning English Language also improve memory retention, learning accomplishment and satisfaction. Also, the study has revealed that there is significant

difference in learning effectiveness of student who learned English Language concept with multimedia tools and those who learn without it. It also revealed that there is a significant difference in the attitude of secondary school students to learning English Language concepts when multimedia tools are explored and when not. As a result of the findings in this study, this can strengthen the literatures of multimedia tools.

Recommendations

Based on the findings related to the Perceived Impact of Multimedia Tools on Ilesa West Secondary School Students Learning of English Language Concepts, here are some recommendations:

i.   Secondary school students should incorporate multimedia tools into their learning materials to enhance their positive learning outcomes. For instance, It can encourage students to use educational apps, access online learning resources, and participate in class discussions.

ii. Secondary school teachers chiefly English Language teachers should encourage students to use multimedia tools for learning activities.

iii. Government should improve the rate of funding and provision of digital accessories for the teachers so that materials can be designed using multimedia tools likewise for the students to access the educative contents.

iv. Government should provide adequate power supply so that the existing multimedia tools such as Laptop, desktop, WIFI and others can be charged and used effectively.

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MULTICULTURAL SCHOOLS AND THE INCLUSIVE DIMENSION OF WELL-IMPLEMENTED COMMUNITY PRACTICES ON BOOSTING THE SCHOOL ETHOS

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Abstract: *Multicultural schools are not merely schools where students of different ethnic groups or nationalities learn together, but primarily they are schools with an ethos. The facets and characteristics of such schools impact the learning trajectories of students and inclusive practices are the norm there. The effective implementation of such practices, the strategies for keeping the learning environment inclusive, alongside preserving identities and fostering developmental pathways are core values in multicultural schools. The article aims at highlighting the importance of salient features of such schools and the implementation of case studies provides models and frameworks to be observed. Furthermore, a skill set that promotes critical thinking and problem-solving in the context of blended learning, alongside the face-to-face one, are core competences in a multicultural learning environment. The identity construction of each ethnic group needs to blend into an educational environment that fosters unswerving cross-cultural teaching. Inclusion and integration are part of a student-centered approach to teaching, in schools where means and methods are tailored to address the specific needs of the student, turning a dependable child into an autonomous adult, regardless of the diverse socio-economic or cultural backgrounds students come from.*

Key words: multicultural schools; inclusion; ethnic communities; school ethos.

Multicultural schools viewed in term of their salient features and the unswerving cross-cultural societal interactions must not be pinpointed only with reference to international schools as a byproduct of a globalized world, but also in contexts of traditionally multicultural societies, where different ethnic groups have peacefully lived and developed into strong multicultural communities with effect on educational institutions. One such example is the case study of The Technological Highschool "The Danube Gorge" Moldova Nouă in Caraș-Severin, which provides models and frameworks to be observed.

Taking a close look at the demographics of the area we know that Banat region has traditionally been perceived as one undergoing several waves of colonization over the centuries with Hungarians, Bulgarians, Czechs, Croatians, Germans and Serbians ending up living together in strong multicultural communities. Furthermore, it is a fact that by the sixth century Historians mention that "The Lower Danube territories were inhabited by a population structure made up by Dacians and Slavs"(Cerović, 2005), and it is common knowledge that by Slav we mean Serbians, alongside other Slavic populations, and more specifically the Danube Gorge Serbians are now referred to as being in a state of "acculturation"(Bulzan, 2007) to the Romanian life. And Cerović takes the data to modern times and his book makes reference to the" decline in population of the Serbians and other ethnic groups, both in the" absolute and the relative aspect"" (Cerović, 2005), this being also proved by the data collected by the National Institute of Statistics (INS). By looking at the data provided by The Institute for Research on National Minorities (INSMP) census with reference to Caraș-Severin, the structure of the population at the 2002 population census was as follows: 88,25% Romanians, 1,75% Hungarians, 2,38% Roma, 1,88% Croatians, 1,84% Germans, 1,82% Serbians, 1,06 % Ukrainans, 0,74% Czechs and 0,28% other ethnic groups. To prove the decline in number it is worth taking a look at the 2011 population census, which indicates a significant drop in the minority population: 82,52 % Romanian, 0,99% Hungarian, 2,46% Roma, 0,84% Ukrainian, 0,98% German, 3,42% Serbian and Croatian and 0,52% Czech. Ultimately the 2021 census, conducted online and with the remark that only by the end of June 2023 the final results will be published has widened the gap even further. And to analyze only two example which are more specific to the Modova Nouă and the Danube Gorge are, if there still are 3408 Serbians in Caraș-Severin, only 45% of these speak Serbian, whereas with reference to the Czech population out of the 909 Czechs only 40% of these speak the language. The decline in

population is obvious, yet, on the other hand the new generations may carry the local element further without even knowing how much of a particular inherited tradition is Croation, German, Czech or Romanian. Thus, the identity construction of each ethnic group has blended with the dominant Romanian culture into a multicultural society that foster a multicultural education.

School ethos, on the other hand, has encountered numerous connotations, defined by Donnelly as a 'fashionable but nebulous term', and by others as a 'notoriously difficult term to bring into clear focus' (McLaughlin, 2005). Following a study conducted in Northern Ireland, there is a discrepancy between the theoretical definitions and 'the observed practices and interactions of school members' (Donnelly, 2000). Seen by others as when defined as school or educational ethos, it is very clearly analyzed by Scottish Advisory Group on Relationships and Behavior in Schools (SAGRABIS) in a study published in 2017. The study concludes, among others, that school climate alongside school ethos is essential in ensuring 'social and emotional wellbeing and mental health for all in schools'. Dingham adds a new layer and suggests that a positive school ethos is to be understood only in conjunction with a strong leadership (Dingham, 2007) and in the Romanian literature, an article entitled 'A plea for community educational ethos' actually makes a plea for a 'paideic symphony' at the community level (Cucoș, 2013) and for a symbiosis of school, family and community values, interactions and behavior to be taught. As for the school ethos, inferring from the numerous definitions, several concepts can be put together to provide the elements that define the term: inclusion and security, a state of emotional comfort, physical safety at school, joint decision-making processes (school staff – students or pupils – family – the extended community), skilled teachers to respond to the needs of the 21st century children and teenagers in the context of blended learning, and thus extended learning communities.

Multicultural schools display specific facets and characteristics with impact on the learning trajectories of students, where inclusive practices are the norm. The key words that define a multicultural school are: multilingualism, cultural exchanges, inclusion, reaching across racial barriers, appreciation of the other, cultural competencies, heritage, well-adjusted students. In response, boosting the school ethos in multicultural schools would include collaborative means, tactfulness in tackling culturally sensitive issues, empathy, equity, open-minded staff and well-socialised children, an empowering educational

environment. Westheimer and Kahne do not fail to recognize how important it is for all schools, not just the multicultural ones to 'seek to prepare students to improve society by critically analysing and addressing social issues and injustices' (2004), critical analysis which is part of parental preoccupation from early age (Roman et al., 2021). The previously mentioned case study of The Technological Highschool" The Danube Gorge" Moldova Nouă in Caraș-Severin, beyond the school population structure displays specific features of multicultural schools:

- multilingualism: four mother tongues are taught, respectively Serbian, Czech, German and, obviously, Romanian; additionally English and French are taught as foreign languages;
- identity preservation and cultural exchange: school show events that include traditional dances, folklore, music, poetry, gastronomy and specific attire;
- an inclusive learning environment in pursuit of common educational goals and civic engagement for the benefit of the local community – the whole Danube Gorge;
- multiple developmental pathways combined with positive career aims and goals: vocational routes, from tourism to engineering domains, theoretical from Natural Sciences to Informatics and Philological studies;
- curricular adaptations, language content integrations and customization of school syllabus.

To sum up, multicultural learning environments, schools in particular, consistently expose students to a variety of cultures facilitating thus improved academic results and an active citizenship in the adult life, inclusive everyday practices, they value each ethnic community as and emulate an inclusive school ethos that grants equal status, cross-cultural/ ethnic/ racial interactions and prejudice reduction.

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MATHEMATICS FOR SUSTAINABLE DEVELOPMENT: IMPROVING STUDENTS' LEARNING THROUGH RICH MATHEMATICAL TASKS STRATEGY

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Abstract: *Mathematics is needed to achieve sustainable development goal 4, which targets inclusive, equitable education cum lifelong learning. Nonetheless, the students' achievement in senior secondary mathematics is below average. Thus, this study examined the effects of the Rich Task strategy and numerical ability on senior secondary mathematics achievement. The sample comprised 203 pupils from two public senior secondary schools in Ijebu-Ode Local Government Area, Ogun State, selected on purpose. Three data collection instruments are the Mathematics Achievement Test (r = 0.84), the Numerical Ability Test (r = 0.79), and the Treatment Instructional Package. The data collected were analysed with descriptive and inferential statistics at 0.05 significance. The study discovered that the treatment significantly influenced students' academic achievement, with the Rich Task instructional strategy found to be more effective than the conventional method. The findings also showed that numerical ability significantly impacted academic achievement, with high-ability students outperforming low and medium-ability students. However, there was no significant interaction effect between instructional strategies and numerical ability on students' academic achievement. The study recommended that teachers employ Rich Task Strategy to meet their students' different learning requirements and skills, and the implications for achieving sustainable development Goal 4 were identified.*

Keywords: *rich task; students' achievement; mathematics; secondary school; numerical ability.*

Introduction

Mathematics is crucial to reaching global sustainable development goals. Sustainable development balances economic development, environmental conservation, and social progress. It provides the tools and procedures for effective decision-making and problem-solving in various domains. Specifically, Sustainable Development Goal (SDG) 4 sets to guarantee inclusive and equitable quality education and allows for lifelong learning.

Mathematics is a core subject in secondary education, and a solid foundation in mathematics is necessary to achieve SDG 4. It equips students with the required skills and information for success in higher education and the workforce. Science, technology, engineering, and mathematics (STEM), which are crucial for economic growth and innovation, also require mathematics. In addition, mathematics in schools contributes to developing fundamental life skills, such as rational, abstract, logical, critical thinking, problem-solving, and analysis. These abilities are essential for attaining SDG 4, as they enable individuals to adapt to changes in the workforce, contribute to innovation and creativity, and actively participate in civic life. Mathematical applications can also aid politicians, engineers, and scientists optimize resource allocation, minimize waste and environmental damage, and ensure development projects' efficiency, effectiveness, and equity.

Being a signatory to the United Nations' Sustainable Development Goals, Nigeria is dedicated to attaining sustainable development (UNSDGs). The nation has proved its dedication by developing laws and activities that employ mathematics to address critical development concerns. For example, the Nigerian government recognises the significance of mathematics education and has made it mandatory for primary and secondary school students. It has also made substantial investments to enhance the quality of mathematics instruction at all educational levels. In addition, there is a partnership with a body like the United Nations Educational, Scientific, and Cultural Organization (UNESCO) to produce mathematical education initiatives relevant to the yearnings of Nigerian students and instructors (UNESCO, 2020).

Mathematics is a compulsory subject in the country's senior secondary schools to prepare students to gain mathematical skills. The skills will enable them to learn and apply the subject's fundamentals to

sustainable development. Yet, the mathematics achievement of senior secondary school students in Nigeria has been a concern for many years. According to studies, the mathematics performance of secondary school students in Nigeria is often poor (Adigwe & Chukwudi, 2021; Nwosu & Atuanya, 2018). At the 2019 West African Senior School Certificate Examinations (WASSCE), only 34.59 percent of students who sat for mathematics earned a credit pass (i.e., grades A1-C6), while 25.99 percent earned a pass (i.e., grades D7-E8) and 39.42 percent failed (West African Examinations Council, 2019).

Okoro (2017) discovered in Nigeria that in 2016, just 18.3% of students in senior secondary schools passed the WASSCE mathematics examination. Also, Adeoye and Adeoye (2016) found that only 26.6% of senior secondary school students in Oyo State had a solid grasp of mathematical concepts and principles. This observation was based on the students' performance in mathematics in the examination conducted by the West African Examinations Council (WAEC). In addition, it appears all regions of Nigeria have difficulty learning mathematics, as Adu and Owusu-Ansah (2016) discovered that Northern Nigerian pupils did less well in mathematics than their Southern counterparts.

The challenges with mathematics learning in Nigeria can have severe implications for sustainable development. For instance, without adequate mathematics skills, Nigeria's workforce may not have the technical skills to develop and maintain the infrastructure and industries necessary for sustainable development. Similarly, people may struggle to understand scientific concepts and research findings, which can impede progress in fields such as medicine, energy, and agriculture. A lack of mathematics skills can further limit Nigerian entrepreneurs from developing and implementing sustainable solutions to societal challenges.

To address the problems bedeviling the subject, the Nigerian government introduced several policies to improve mathematics instruction quality, including the Universal Basic Education (UBE) programme. Other efforts include revising the mathematics curriculum and providing training and professional development opportunities for mathematics teachers (Ajogwu, 2020). Despite these supports and interventions, students' mathematics learning difficulty remains unabated. To this end, innovative and student-centred teaching

methods have been suggested to teach mathematics due to their effectiveness (Adeyemo & Adeyemi, 2019). Hence, this paper explored the effect of the Rich Mathematical Task strategy, shortened as Rich Task Strategy (RTS) in this study, on students' mathematics achievement in senior secondary schools.

A rich task instructional strategy provides students with complex and challenging mathematical problems that require them to engage in critical thinking, problem-solving, and communication skills (Freiman, Lai, & Huang., 2016). It is an active learning approach that encourages students to construct their understanding of mathematical concepts and apply them to real-world situations. Rich task strategy typically involves open-ended problems with multiple solutions and requires students to use various mathematical skills and strategies (Kaur, 2015). Students are encouraged to work collaboratively, share their thinking, and make connections between different mathematical concepts. The strategy aims to develop students' mathematical thinking, problem-solving abilities, and confidence in their mathematical abilities (Boaler, 2016). It also allows the students to make sense of problems and work productively collaboratively to persevere in solving them (Melucci, 2021).

This study on using Rich Task Strategy to teach mathematics hinges on constructivism learning theory. Constructivism suggests that learners actively construct their own understanding of concepts and ideas through their experiences and interactions with the environment. In mathematics teaching, rich tasks provide students with opportunities to engage in problem-solving, reasoning, and communication. Students can construct their comprehension of mathematical ideas and develop problem-solving skills through these tasks. In this technique, the teacher's job is to help the learning process by guiding students through their discoveries and providing feedback and support. Thus, the theory emphasizes the importance of learners actively constructing their understanding of mathematical concepts through meaningful experiences and interactions.

Fitriati, Elizar, and Marlaini (2022) constructed problem-based rich mathematical tasks. They also investigated the treatment's impact on enhancing students' higher-order thinking abilities. The finding disclosed that students exposed to the method significantly improved their learning. Similarly, Warren (2019) examined the connection

between mathematical tasks and student achievement. The correlational investigation revealed a significant association between rich mathematical activities and student achievement. This result suggests that the rich task strategy considerably enhanced students' learning. Tashtoush, Wardat, Aloufi and Taani (2022) also studied the effects of a concept-rich instructional strategy on students' algebra course performance and attitudes toward mathematics. The results showed that students taught with the rich task strategy performed better than those who learned mathematics with the conventional teaching technique. The study proposed a concept-rich instructional technique for teaching and learning algebra and improving attitudes.

Wujek (2020) investigated whether sixth-grade children in Baltimore County Public Schools who participated in daily instruction that included mathematically-rich tasks performed better on a standard-based examination (BCPS). The study adopted, for data comparison, pre-and post-test research design. The finding exposed that student demonstrated considerable improvement in unit assessments after exposure to rich mathematical tasks but not in the Measure of Academic Progress (MAP) examination. Wujek advised that additional research be conducted to establish if learners' engagement in daily mathematically-rich work improves their mathematics achievement. The findings regarding the favorable impact of rich task strategy are consistent with those of Lei and Hu (2021), who discovered that rich-numeracy tasks helped students' numeracy development and promoted students' social and linguistic growth.

Bobboyi and Yara (2019) also investigated the rich mathematical task approach's impact on the achievement of students in mathematics in senior secondary school in Bauchi State, Nigeria. The study, which utilized a quasi-experimental approach with 84 students from two schools, revealed that using rich mathematical strategy significantly enhanced students' mathematics achievement. Similarly, Dambazau, Aliye and Abubakar (2021) determined the effectiveness of a rich task strategy on the achievement of students in senior secondary schools' mathematics in Kano State, Nigeria. The research design employed was a quasi-experimental pretest-posttest with 160 students from four secondary schools. The results indicated a significant difference between the mean achievement scores of students in the experimental and control groups, demonstrating that employing a rich-task method enhanced students' mathematical achievement.

This study examined the effects of the Rich Task Strategy (RTS) on mathematics learning in the Ijebu Ode Local Government Area, Ogun State, Nigeria, where literature showed it had not been used, despite its reported effectiveness. Hence, more research is required to examine the long-term viability of the RTS's benefits. This effort is required for sustainable development since it is crucial to comprehend the long-term effects of this instructional technique on students' learning outcomes. Thus, it is important to continue investigating the effectiveness of rich task strategy to identify how best to modify this method to match the demands of various students and learning contexts in the face of persistent mathematics learning difficulty.

When investigating the effectiveness of rich task strategy on the achievement of students in mathematics in senior secondary schools, it may be essential to consider the role of numerical ability as a potential moderating variable. Numerical ability, which refers to an individual's proficiency in understanding and using numbers, may moderate the effect of rich task strategy on students' mathematics achievement. Studies have shown that high numerical ability students may be better equipped to engage with and benefit from rich tasks as they have a stronger foundation in numerical concepts and may be more comfortable with complex problem-solving (Kesici & Uysal, 2019). On the other hand, students with low numerical ability may struggle with rich tasks and may require additional support or scaffolding to understand and apply the concepts presented (Mamolo et al., 2019). Hence, this study used numerical ability as a moderating variable to provide valuable insights into the effectiveness of rich task strategy for different subgroups of students and help to identify ways to optimize its use in mathematics instruction.

Objectives

The study's primary purpose was to investigate the effect of treatment (Rich Task Strategy and conventional approach) on students' mathematics achievement in senior secondary schools. Particularly, the following were investigated:

i.   The effect of the Rich Task Strategy and the conventional teaching method on senior secondary students' mathematics achievement;

ii. The effect of students' numerical ability on mathematics achievement in senior secondary schools; and

iii. What numerical ability moderates' students' mathematics achievement at the two levels of the treatment (Rich Task Strategy and the conventional method).

Research question

For this study, one research question was posed:

i. What is the numerical ability distribution of the participants?

Hypotheses

Three null hypotheses were generated and tested to achieve these objectives at a significance level of 0.05. They are:

H_01: The treatment (Rich Task Strategy and the traditional technique) has no significant main effect on the mathematics achievement of senior secondary school students.

H_02: Numerical ability has no significant main effect on students' mathematics achievement in senior secondary schools.

H_03: Treatment and numerical ability have no significant interaction effect on students' achievement in senior secondary school mathematics.

Methods

Research Design
This study adopted a quasi-experimental design with a pretest-posttest control group and a 2x3 factorial. Two groups were purposefully selected and randomly allocated as experimental and control. The groups were crossed with numerical ability to examine their moderating effect on senior secondary mathematics achievement. There were three levels of numerical ability: low, medium, and high.

The design layout is as depicted below:

O_1 X_1 O_2 Experimental Group

O_1 X_c O_2 Control Group

O_1 is the pretest score; O_2 is the post-test score; X_1 is the Rich Task Strategy, and X_c is the conventional method.

Target Population

The public schools' senior secondary two (SS 2) students in Ijebu-Ode Local Government Area were the target group for this study. The SS 2 class was targeted since they were familiar with senior-level math's concepts despite having no external examination pressure.

Sample and Sampling Techniques

The participants were 203 SS 2 students in the two purposively selected schools. The schools were purposively selected because they had qualified teachers with B.Sc. (Ed.) in Mathematics; the schools were located in the same city and had similar characteristics, such as the number of students, teachers, and resources available for teaching mathematics. However, the schools were distant from each other to prevent experimental contamination. The study employed complete (intact) classes of students from the selected schools. An arm of a class in the school with multiple arms of a class was selected using simple random selection. Thus, there were 97 students in the experimental group and 106 students in the control group.

Instrumentation

Data was collected using the Mathematics Achievement Test, Numerical Ability Test, and Teacher Instructional Guides. The Mathematics Achievement Test (MAT) was a 30-item multiple designed by the researcher to test students' knowledge of mensuration. Menstruation is one of the problematic mathematics concepts reported by the WAEC Chief Examiners Report (2019). The instrument's validity was tested through the critiques of two university experts in Mathematics Education and two secondary school mathematics teachers. The critiques of these experts were used for adjusting the instrument. Later, copies were administered to twenty-five students from a non-participating school with similar characteristics to participating schools twice within a week. The test-retest statistics yielded a reliability coefficient of 0.84.

The Numerical Ability Test (NAT) comprised 20 multiple-choice questions with four options (A, B, C, D). The face and content validities were ascertained by subjecting to the critiques of 2 experts in

test construction and an expert in mathematics education. The experts' suggestions were used to modify the instrument. After that, it was administered to 30 students from a non-participating school. The reliability index of 0.79 was obtained using K-R 21 formula.

The Treatment Instructional Package (TIP) was the model lesson plan for the experimental group. It was validated by subjecting it to the comments of 2 experts in mathematics education and one secondary school mathematics teacher. Their comments were used to modify the lesson plan before trial testing it to teach SS2 students in a public senior secondary school in another Local Government Area. Observations from the trial testing were further corrected before the real experimentation with the lesson plan. The mathematics teacher in the control group was allowed to use the usual lesson plan procedure (Conventional method).

Procedure for Data Collection

During the data collection phase, ethical considerations were taken into account to ensure the well-being and rights of the participants. The following procedures were followed:
The researcher visited the selected schools' authorities and sought permission to undertake the study. After due permission, the mathematics teachers were briefed about the study's purpose and obtained informed consent from the participants. The purpose and nature of the study were explained to them, and they were allowed to ask any questions or express any concerns they may have had. In addition, the participants were informed that their participation was optional and that they could withdraw from the study at any moment without consequence. They were assured that their involvement, or lack thereof, would not affect their grades or status in the class. The teacher, who served as the assistant, was also trained on how to implement the rich task instructional strategy. After that, the experimental and control groups were given MAT and NAT as a pretest to determine their maths skills and knowledge of mensuration concepts. The instruments were created to be age-appropriate and free of cultural and gender bias. The experimental group was then exposed to the following rich task strategy:

The researcher designed engaging and rich tasks to teach the students concepts in mensuration. The tasks were designed to cultivate critical thinking and problem-solving skills. The instructor then introduced the

assignment to the students and clarified its objective. In addition, they were provided with essential information and resources on the whiteboard. The students were then instructed to work on the assignment in a group of four, sharing ideas and knowledge. The instructor promoted collaboration by offering direction and feedback. The teacher and assistant watched the students' progress throughout the activities and provided feedback and assistance as needed. In addition, they evaluated the students' comprehension of the mathematical ideas and skills necessary to complete the activity. After completing the exercise, students were encouraged to reflect on their learning experiences to promote reflection. They were requested to discuss their plans, solutions, and problems. The teachers also facilitated a class discussion to promote further reflection. Ultimately, the teacher used the rich task to generalize mathematical concepts and skills. The teacher helped the students to connect the mathematical concepts they used to solve the task to the broader curriculum. The teacher then assigned pupils specific assignments to assess their comprehension of the mensuration principles, and corrective measures were administered to those who required them. The instructor also assigned follow-up work in the form of homework. The control group got typical mathematics education that was age-appropriate and devoid of cultural and gender prejudice.

During the intervention, data were collected to track the participants' development and measure changes in their mathematics achievement. Participants were given explicit instructions on completing the tasks and were permitted to ask questions or seek clarification. The researcher and mathematics instructors from the chosen school, trained as research assistants, collected the data, but the researcher did grading to prevent bias.

After six weeks of intervention, reshuffled versions of the MAT and NAT were administered to experimental and control group students as post-tests to examine changes in their performance on the taught mensuration topics. The examination was also created to be age-appropriate and free of cultural and gender bias. Throughout the data collection phase, participants' privacy and confidentiality were likewise respected, and their personal information was kept private.

The collected data were analyzed using descriptive mean and standard deviation statistics and inferential statistics of Analysis of Covariance

(ANCOVA) with version 23 of Statistical Package for the Social Sciences (SPSS).

Results

The results are based on the research question and the formulated hypotheses. The anonymity of the participants was maintained during the presentations.

Research question: What is the distribution of the participants by numerical ability?

Table 1. Descriptive statistics of participants' distribution by numerical ability

Numerical Ability	Number of Participants	Mean	Standard Deviation
Low	64	19.925	0.544
Medium	79	21.677	0.481
High	60	21.835	0.553

Table 1 displayed that the majority of participating students (79) have a medium numerical ability, followed by those with a low numerical ability (64) and those with a high numerical ability (60). It also indicates that students with high numerical ability have the highest mean achievement (21.835) and standard deviation value (0.553), followed by those with a medium numerical ability (21.677) and low numerical ability (19.925) and standard deviation values (0.481) and 0.544).

Test of Hypotheses

H_01: The treatment (Rich Task Strategy and the traditional technique) has no significant main effect on the mathematics achievement of senior high school students.

Table 2. Summary of Analysis of covariance of students' achievement in Mathematics according to treatment **and numerical ability**

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3093.489a	6	515.582	28.256	0.000	0.464
Intercept	4976.787	1	4976.787	272.751	0.000	0.582

Pretest	13.886	1	13.886	0.761	0.384	0.004
Treatment	2687.978	1	2687.978	147.314	0.000	0.429
Numerical ability	142.098	2	71.049	3.894	0.022	0.038
treatment * numerical ability	11.872	2	5.936	0.325	0.723	0.003
Error	3576.333	196	18.247			
Total	96445.000	203				
Corrected Total	6669.823	202				

a. R Squared = 0.464 (Adjusted R Squared = 0.447)

Table 2 reveals a significant main effect of strategy treatment (Rich Task Strategy and Conventional method) on senior secondary students' mathematical achievement (F $_{(1,196)}$ = 147.314, p< 0.05). This result depicted that the post-test means achievement scores of students taught with the rich task strategy and the conventional method are significantly different. Hence, the hypothesis that treatment (Rich Task Strategy and the conventional approach) has no significant main effect on the students' mathematics achievement in senior secondary schools is rejected.

In the meantime, Table 3 divulged the results of the Multiple Classification Analysis (MCA) conducted to determine the magnitude and the direction of the effect of the strategy (RTS and conventional method) on mathematics academic achievement.

Table 3. Multiple classification analysis of students' achievement in mathematics by strategy and numerical ability

			Predicted Mean		Deviation			Beta
		N	Unadjusted	Adjusted for factors	Unadjusted	Adjusted for factors	Eta	Adjusted for factors
Treatment	RTS	97	25.00	24.92	3.970	3.887	0.663	0.649

	Conventional	106	17.40	17.47	-3.633	-3.557		
Numerical ability	Low	64	19.27	19.80	-1.764	-1.231	0.209	0.146
	Medium	79	21.82	21.52	0.793	0.487		
	High	60	21.87	21.70	0.837	0.672		

Table 3 demonstrates that students taught with the Rich Task Method had an average post-test achievement score of 24.92, compared to 17.47 for those subjected to the conventional teaching style. According to the results, this mean difference of 7.45 is statistically significant. Table 3 further reveals that the strategy accounted for 64.9% of the variations in mathematics achievement among senior high school pupils.

H_02: Numerical ability has no significant main effect on students' mathematics achievement in senior secondary school.

Table 2 demonstrates a statistically significant relationship between numerical ability and students' academic achievement in senior secondary mathematics (F $_{(2,196)}$ = 3.894, p<0.05). This result indicates that students with low, medium and high numerical ability mean academic achievement scores differ significantly. Consequently, the hypothesis that Numerical ability has no significant main effect on students' mathematics achievement in senior secondary school is refuted.

Table 3 displays the results of the MCA to establish the magnitude and direction of the impact of numerical ability on student achievement. Students with high numerical ability had the highest mean achievement score (21.70), followed by students with a medium numerical ability (21.52) and students with a low numerical ability (19.80). The table also demonstrates that numerical ability accounted for 14.6% of the variances in students' academic achievement in mathematics in senior secondary school.

Table 4 depicts the paired comparison of numerical ability results.

Table 4. Pairwise comparisons of mean differences in mathematics achievement by numerical ability

(I) numerical ability	(J) numerical ability	Mean Difference (I-J)	Std. Error	Sig.
Low	Medium	-1.752*	0.726	0.017
	High	-1.910*	0.776	0.015
Medium	Low	1.752*	0.726	0.017
	High	-.158	0.733	0.830
High	Low	1.910*	0.776	0.015
	Medium	.158	0.733	0.830

Table 4 reveals that the mean achievement score of students with low numerical ability (19.80), as displayed in Table 3, is significantly lower than that of students with medium numerical ability (21.52). Likewise, it is significantly lower than the mean achievement score of students with high numerical ability (21.70). However, the mean achievement score of students with medium numerical ability (21.52) is not statistically distinguishable from that of students with high numerical ability (21.70). This result indicates that the mean mathematics accomplishment scores of students with medium and high numerical ability are nearly identical.

H₀3: Treatment and numerical ability have no significant interaction effect on students' achievement in senior secondary school mathematics.

Table 2 demonstrates that there is no significant interaction effect of treatment and numerical ability on the academic achievement of students in senior secondary mathematics ($F_{(2,196)} = 0.325$, $p > 0.05$). This result indicates no significant difference between the mean mathematical achievement scores of students with low, medium, and high numerical ability across the two levels of the instructional strategy, i.e., Rich Task and Conventional technique. So, the hypothesis that treatment and numerical ability have no significant interaction effect on students' achievement in senior secondary school mathematics is retained.

Discussion
Mathematics is vital for attaining the sustainable development agenda in Nigeria and worldwide. But students' annual achievement in the

subject is below expectation, suggesting a solution is required. Hence, this study investigated the Rich Task Strategy's effect on students' mathematics achievement. It also considered the moderating effect of numerical ability.

In terms of the numerical ability of the participant, the study found that most participating students have a medium numerical ability, followed by students with a low numerical ability and then those with a high numerical ability. This finding aligns with a study by Fan, Xu, Cai, He, J., and Fan (2016) that found the majority of students in China have a moderate level of numerical ability, followed by those with a low level of ability and then those with a high level of ability. It also concurs with that of Vermeer and Veldhuis (2014), which found that the distribution of mathematical ability was skewed towards the middle, with most students falling into the average or moderately able category. One possible explanation is that most students in the population may have had a medium level of numerical ability, with fewer students having either high or low numerical ability. This could have influenced the distribution of numerical ability observed in the study sample.

The study guessed that the treatment (Rich Task Strategy and conventional method) had no significant effect on the mathematics achievement of senior secondary school students. The finding indicated, however, that the treatment significantly impacted senior mathematics achievement. Multiple classification analyses revealed that the experimental group exposed to the RTS had higher mean achievement scores than the control group, which got the conventional technique. These findings are congruent with Bobboyi and Yara (2019) and Dambazau et al. (2021), who also discovered that the RTS enhanced students' mathematical achievement relative to the conventional method.

The Rich Task Strategy is grounded in the constructivist learning theory, which posits that knowledge is constructed through the active involvement of learners in the learning process. The RTS approach provides students with real-world problems requiring critical thinking and problem-solving skills. Students are encouraged to work collaboratively and actively learn, constructing their knowledge through exploration, experimentation, and reflection. The significant effect of the RTS on students' achievement in mathematics can be

attributed to the fact that it aligns with the constructivism learning theory. The approach enables students to construct their knowledge of mathematics through active involvement, reflection, and engagement with real-world problems.

In addition, the RTS approach promotes students' acquisition of key problem-solving and critical thinking abilities for mathematics achievement. Since RTS is successful for mathematics instruction and learning, it can aid in reaching the mathematics-based sustainable development aim. The strategy supports the development of important skills for sustainable growth, including collaboration, critical thinking, and problem-solving.

The study also surmised that numerical ability has no significant effect on students' achievement in mathematics at the senior secondary level. Yet, the data demonstrated a significant effect of numerical ability on students' mathematics achievement. Students with low, medium and high numerical ability had significantly varied mean achievement scores. The multiple classification analysis revealed that students with high numerical ability had the highest mean achievement score, followed by those with medium and low numerical ability. A pairwise comparison of the mean scores revealed a significant difference between the mean scores of low and medium; low and high numerical ability students. Still, no significant difference existed between the mean achievement scores of medium and high-numerical-ability students. This finding is consistent with Kesici and Uysal's (2019) assertion that students with high numerical ability may be better ready to interact with and profit from rich assignments due to their stronger foundation in numerical ideas and comfort with sophisticated problem-solving. Furthermore, it is consistent with Mamolo et al. (2019) that students with low numerical ability may struggle with complex activities and require additional guidance or scaffolding to comprehend and apply the offered concepts.

Furthermore, these findings are consistent with the constructivism learning theory, which emphasizes that students construct knowledge actively through exploration, experimentation, and reflection. Students with high numerical ability may be better equipped to engage with and benefit from rich tasks, as they have a stronger foundation in numerical concepts and may be more comfortable with complex problem-solving. In contrast, students with low numerical ability may struggle with rich

tasks and require additional support or scaffolding to understand and apply the presented concepts. These findings align with the sustainable development goal of promoting quality education, as they suggest that a more inclusive approach to teaching mathematics is necessary.

The findings support the hypothesis that treatment (Rich Task Strategy and conventional method) and numerical ability have no significant interaction effect on students' achievement in senior secondary mathematics. This outcome suggests that the mean achievement scores of students with low, medium, and high numerical ability do not differ significantly between the two levels of the strategy. This result indicates that the instructional technique implemented (Rich Task and Conventional Method) had no significant effect on the academic achievement of students with varying degrees of numerical competence. This finding is inconsistent with Kim and Kim's (2017) report that rich task training had a significant effect on students' mathematical achievement, but only for students with high ability. The outcome may be because the rich task technique and the conventional method were implemented equally successfully, resulting in comparable academic outcomes for all students regardless of numerical capacity. However, the fact that the Rich Task strategy had no significant impact on the academic achievement of students with varying degrees of arithmetic competence implies that constructivist approaches may have limitations in certain settings.

On the basis of the study's findings, it can be inferred that the rich task approach had a greater effect on the mathematics achievement of senior secondary students than the conventional teaching method. In addition, it was determined that numerical ability is influential in mathematics learning in senior secondary schools. This study shows, however, that there is no significant interaction effect between strategy and numerical ability, showing that the choice of method has little bearing on students' academic achievement based on numerical ability. Further, this study established that using the rich task strategy that aligns with constructivist learning theory can provide a valuable approach to promoting deep understanding and higher-order thinking skills in mathematics education, particularly for students with high numerical ability. In terms of sustainable development, the findings suggest that well-implemented instructional strategies that cater to students' diverse learning needs and abilities can contribute to developing a more equitable and sustainable society. By promoting

more profound understanding and critical thinking skills, students can develop the knowledge and skills to address complex challenges facing their communities and the world.

Consequently, this study recommends using the rich task strategy in senior secondary school mathematics education because it caters to the students' diverse learning needs and abilities and helps promote more profound understanding and critical thinking skills. Teachers need to deeply understand constructivist learning theory and how it can be applied in mathematics education to implement rich task strategies and conventional methods effectively. Therefore, it is recommended that policymakers and education stakeholders provide ongoing professional development opportunities for teachers to enhance their knowledge and skills in this area.

This study recommends further research to explore the conditions under which different instructional strategies are most effective in promoting academic performance and sustainable development. Therefore, it is recommended that policymakers and education stakeholders prioritize research and reflection on instructional practices in mathematics education to ensure that practical approaches are being used to promote the achievement of SDG 4.

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EXTRACURRICULAR APPROACHES TO INFLUENCE THE WELL-BEING OF PRIMARY SCHOOL CHILDREN

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Abstract: *This article examines the influence of extracurricular activities on the well-being of primary school children, using the Well-Being Index (WBI) to measure levels of well-being before and after participating in these activities. The results suggest that engaging in extracurricular activities can have a significantly positive impact on children's overall well-being, helping to increase their sense of connection, competence and autonomy.*

Key words: *extracurricular activities; well-being; primary school children; Well-Being Index; personal development.*

Theoretical foundation
Children's well-being in the school context has become a growing topic of interest in the literature (Lippman et al., 2009). The concept of well-being is multidimensional and encompasses physical, emotional, social, and cognitive aspects (Pollard & Lee, 2003).

Extracurricular activities are an essential component in children's overall development, providing them with opportunities to develop social, emotional and cognitive skills outside the formal context of education (Fredricks & Eccles, 2006). Participation in these activities has been associated with multiple benefits, including increased self-esteem, development of positive relationships with peers, and improved academic outcomes (Mahoney et al., 2005).

Well-being measures such as the Well-Being Index (WBI) have been used to assess how different experiences, including extracurricular activities, influence children's well-being (Seligson et al., 2013). These

tools provide a detailed picture of the impact of various activities on children's physical, emotional and social well-being.

Over time, education and learning have been viewed beyond the strict framework of classical instruction. Thus, extracurricular activities began to be seen as an essential way to complement the school experience (Larson, 2000). These activities provide opportunities for children to explore and develop passions, competencies, and skills not necessarily covered in the standard program (Durlak et al., 2010).

Moreover, a vital aspect of extracurricular activities is that they allow children to experiment and engage in activities in a less formalized and often more cooperative environment. It promotes autonomy, self-confidence and the development of essential life skills such as teamwork, communication and problem solving (Eccles & Gootman, 2002).

In addition to these benefits, there is empirical evidence to suggest that participating in extracurricular activities can have positive effects on children's mental and emotional well-being. An increased sense of belonging, connection with peers, and social validation are just some of the emotional benefits associated with such participation (Marsh & Kleitman, 2002).

In the digital age and with increasing sedentariness among young people, extracurricular activities, especially physical ones, can play a crucial role in promoting a healthy and active lifestyle (Strong et al., 2005).

In conclusion, understanding and assessing the impact of extracurricular activities on children's well-being is essential to maximise benefits and ensure that all children have access to opportunities that support their integral development.

Research:
For this research, we used the Well-Being Index (WBI) questionnaire to assess children's well-being. WBI is a validated and reliable tool widely used in child welfare research. The children completed the WBI questionnaire at two different times: before starting extracurricular activities and after three months of active participation. This allowed us to assess the direct impact of these activities on their well-being.

The sample consisted of 100 children from Arad County, aged between 7 and 12 years. All children participated in various workshops:

1. Mindfulness and relaxation workshop: This workshop introduced children to the concept of mindfulness and helped them focus on the present. They learned different breathing techniques, participated in guided meditation exercises, and created their own "calm jars" of glitter to help them calm down when agitated.

2. Creative journaling workshop: Children were encouraged to write down their thoughts, feelings and hopes in a journal. They learned how to express their emotions through writing and drawing, and participate in exercises that help them recognize their strengths and develop self-confidence.

3. Nature connection workshop: Connecting with nature has been linked to better mental and physical well-being. Children participated in nature walks, created art from natural objects and learned about the importance of the environment.

4. Gardening workshop: Given the physical and mental benefits of gardening, the children planted and cared for their own plants. Through this, they developed patience, responsibility and appreciation for nature.

5. Communication and teamwork workshop: This workshop focused on developing children's social skills. Through games and activities, children learned the importance of listening, sharing, and cooperating with others.

Hypothesis and results:
Analyzing WBI scores before and after participating in extracurricular activities for a sample of 100 children, a significant improvement in overall well-being is observed. The results obtained are presented in the tables below.

Statistics	Scor WBI
Medium	3.5
Median	3.5
Standard deviation	0.25
Minimum	3.0

Maxim	4.0

Table 1: Summary of WBI scores before participating in extracurricular activities

Before participation, the children's average WBI score was 3.5, with a standard deviation of 0.25. This indicates that, in general, children had a moderate perception of their own well-being. The minimum value was 3.0 and the maximum value was 4.0, showing relatively little variation in responses.

Statistics	Scor WBI
Medium	5.3
Median	5.3
Standard deviation	0.2
Minimum	5.0
Maxim	5.7

Table 2: Summary of WBI scores after participation in extracurricular activities

After participation, the average WBI score increased significantly, reaching 5.3, with a standard deviation of 0.2. This suggests that extracurricular activities had a positive impact on children's perception of well-being. Responses ranged from 5.0 to 5.7, indicating an overall increase in satisfaction and well-being among children.

Comparing these two datasets, it is obvious that extracurricular activities positively influenced children's well-being. The median, which represents the median value of the dataset, remained constant (3.5 before and 5.3 after), confirming that most children felt an improvement in their well-being.

In conclusion, the results suggest that extracurricular activities have a positive impact on children's well-being, promoting a better perception of their general condition and quality of life.

Conclusions:
In light of the data collected and analysed, it is clear that extracurricular activities have a significant impact on children's well-being. Children who participated in such activities showed a noticeable improvement in their perception of their own well-being, compared to their baseline state, before engaging in these activities.

Extracurricular activities not only provide children with an environment in which they can explore and develop diverse skills and passions, but, as this research suggests, they also contribute significantly to increased emotional and psychological well-being. Feeling belonging, increasing self-confidence, developing social skills and validation through peers are just some of the benefits associated with participating in extracurricular activities.

The results of this research highlight the importance of providing and promoting extracurricular activities within schools and communities, not only as a means of developing skills, but also as a vital tool to support children's overall wellbeing.

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THE IMPACT OF THE TRAINING METHOD ON STUDENT SATISFACTION: THEORY VERSUS PRACTICE - ONE OF THE MOST CONTROVERSIAL ISSUES IN HIGHER EDUCATION

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Abstract: *In my study, after a general introduction to the training method, I discuss its important role in higher education and link it to the learning pyramid theory. I will describe the so-called T-subjects integrated in the curriculum of our university (Hungarian Agricultural and Life Sciences University, MATE), which are implemented in the economics majors (bachelor, master and doctoral), and which are present in both our Hungarian and English language economics courses. In the empirical part, I summarise the opinions expressed in the textual reflections of a selected group of students from the Leadership Skills Training in five different classes of international students. The feedback clearly demonstrates that master's students need both the latest and most up-to-date theories and the skills acquired through experiential learning.*

Keywords: *training method; experiential learning; T-subject, university student feedback.*

Introduction
Nowadays, in addition to the application of traditional methods of higher education, there is a need for both instructors and students to find a new, effective method for transferring and acquiring knowledge. One of the trendy ways of training, the experiential training, is nowadays associated with the business sector, although it is effective in almost all segments. Our university was one of the first in Hungary to introduce training courses, initially through distance learning, and later full-time and part-time. Today, it is inconceivable that our students, whether they are studying for a bachelor's or master's degree or a doctorate, would not encounter personality development,

communication, career guidance, conflict management, negotiation techniques, etc., which help them to develop their skills, increase their self-esteem and integrate into society.

Poór (2006) says about why the training method can be a runner-up among methods that favour experiential learning that, training is a complex, sophisticated teaching method that can also be seen as a form of continuing education. It involves training to achieve a specific objective and the teaching methods used are always aimed at the acquisition of specific competences. It does not, of course, exclude theoretical lectures with presentations and common computer exercises, which are necessary to acquire certain theoretical knowledge. The training is a complex training and further training procedure (combination of methods), in the context of which goal-oriented (on demand) content and training for the acquisition of certain competences is provided, the necessary theoretical knowledge is processed, and its application is combined with self-monitoring (feedback). Through the assessment of the exercises and the use of tests, the application of the participant to a given activity is also explored and the development of personality traits for the activity is also achieved.

Learning about the training method and then practising and recommending it is, in my view, essential in management training courses, so it is not surprising that the curriculum of the Master of Management and Leadership at our university includes training courses. After discussing the training method, I will analyse the feedback from five different training groups in five different year groups (2019 -2023).

The training method (T-group)
The concept of training method is very often used in written and oral form. Training is offered, advertised, and implemented daily, but the definition of this concept and its content is very diverse (Poór, 2006). Also, the different naming, not to mention the variations translated into different languages, make it difficult to clearly define: a T-group or training group sometimes also called a sensitivity training group, human relations training group or encounter group. According to a broader definition is a form of group training where participants (typically between 8 and 15 people) learn about themselves (and usually about small group processes) through interaction with each other. They use feedback, problem solving, and role play to gain insights into themselves, others, and the group.

The method was pioneered by Moreno and his disciple Lewin: the concept of the encounter as "the meeting of two people, face to face, face to face" was formulated by Moreno (1946) in Vienna and matured into psychodrama therapy, and his protégé Lewin (1935) and his colleagues pioneered a way of understanding human behaviour as well as Gordon's (1977) efficiency improvement and Berne's (1958) theory of transaction analysis. Burk (2023) highlights Shein's role in the development of the T-group method to say that his contributions to the T-group movement were prolific.

Voss & Blackburne (2019) considers that the training is a group development method, essentially a skill development method, where participants gain personal experience, through experiential learning, new knowledge about themselves, others, and their attitudes to different situations. To this end, the trainers use a variety of games, situational and role-playing exercises, which are processed, the participants give each other feedback, the laws of group dynamics are at work. Légrádiné Lakner (2006) considers that the training does not take the processes through, it only sets them in motion, and the participants themselves must work on these processes in their everyday life situations. So, the didactic aim was not to close the book definitively, but to set a definite field, to present a framework of interpretation that would support the participants in developing their own ideas. Neményiné Gyimesi (2006) says the training is at the same time an "information product" which is consumed in the process of its production. Whereas in the case of the former, the consumer can obtain information about the utility, the properties, characteristics, and quality of the goods ex-ante, i.e., through a preliminary trial and search process, in the case of experiential goods, the utility and quality can only be judged ex post, through consumption experience, and therefore preferences are formed during consumption (Tirole, 1988). Bajkai-Tóth & Őri (2019) have a similar opinion, according to them training is a buzzword nowadays, often used in connection with various corporate training courses. In fact, because of its popularity, many people use the term even when they are taking part in a traditional, face-to-face classroom training course.

The main features of training are goal-orientation, active participation in the training and immediate feedback, which is a bit like language learning, but the differences are much more striking in the case of vocational training. The aim of training is to enable participants to use their existing knowledge in a creative way and to create something new on their own. Furthermore, in this type of training, the role of the training leader is not to provide a replicable, learnable model, such as a

mathematics teacher in secondary school, but to guide, organise and, where necessary, encourage the learning process (Neményiné Gyimesi, 2006).

According Balogh (2016) complexity, in a nutshell, means that the participants apply the knowledge they have acquired in exercises modelling their everyday environment and, during the feedback, they gain feedback and experience on the development of their activities - their personality. The complexity of the training method can be expressed, on the one hand, in the fact that it synthesises elements of 'classical' education and training procedures and integrates them into the process in accordance with the objective. There is considerable scope for the prior and ongoing processing of the literature (selected sections of the literature), the presence of a lecture form of communication, and the use of procedures based on the activity of the participants (the training community), the inclusion of discussion, debate, and workshop as a dominant factor. An important factor is the active participation of all members of the training group (learning group) in the processing of theoretical knowledge, to build on this in the application, the putting into practice and the feedback of what has been learned. A very important element of complexity is that the process is not only about learning, but also about applying the knowledge acquired in situations specific to their own activities. This is applicable knowledge, which means that the knowledge acquired can be applied by the participants in situations specific to their work. The skills, competences and abilities acquired during the training are the result of a development process which, through and as a result of the training (by virtue of its complexity-intensity), characterises the participants according to the following stages: learning to perform the sub-actions of the action; the coordination and consolidation of the partial actions into a smoothly rolling whole action; abandoning unnecessary movements and effort; reduction of external control; mastery of variants of operations and a shift to continuous autonomous work. The first level in the process of instructional training is usually the reflective-reproductive level, when the participant implements the activity well by example, which can be called an executive, "copying" type of activity. During the training (based on a deeper processing of what has been learned), we reach the "reflective-creative" level, when the participant (student) is able to create something new, to use (apply) the acquired knowledge in a creative way. This is a characteristic of the intensive nature of the training process, properly implemented (Poór, 2007).

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Since one of the most important characteristics of the training method is that the experience, intelligence, and motivation of the participants, mainly adults, leads to quick and effective results, it was natural for us to base the training on the professional background, knowledge, and wide range of knowledge of university students. During the preparatory phase, we identified the topics that we considered essential, and then, in line with the time available for the training, we narrowed down the issues to be examined, while at the same time, at this stage, we felt it necessary to continue the training later, organising specific courses after gathering the needs. First, the topics to be covered in the training were selected from the incredibly large and varied range of definitions, and theories (Raynolds, 2019).

A T-group is a learning laboratory in which group members explore and learn leadership and group membership skills by participating freely with one another, sharing "here and now" experiences and reactions and giving/receiving feedback to/from each other. The focus is on what is happening in real time among the participants. In a T-group, the participant has no choice but to address issues in the moment. Everyone is a witness to what has occurred. This makes for a very rich and complete data set to be "mined" for learning. The learning is "self-referential" and individualized. Different participants have different learning needs. Every participant sets and works his or her own learning goals. The goal-oriented nature of training means that it is a shorter training period in which the specific knowledge needed to perform a task, to develop a competence is processed and put into practice. In the case of these training courses, goal-orientation also means that, because of the training, the knowledge is applied in the appropriate way at the end of the course, the personality traits developed and reinforced are put into practice in the workplace and, as a result, work is more effective (Juhász, 2009).

The personality revealing and developmental factor of the training - showing continuous development - is based on the evaluation and analysis of the exercises. In the context of the various types of exercises, feedback is given on the solution, the expression of personality in activity, the content and personality factors of the task solution during the evaluation and analysis work, and the participant concerned can gain an idea of his/her own "role" and the quality of his/her work. Analyses of tasks that gradually represent the requirements (recall from memory images or objective visual or aural recall) provide the participant with feedback on the initial situation and the ongoing development of the activity, which, reflecting a given

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situation, may indicate stagnation or a certain progress or development (Forintos, 2006).

We must also address the reception of the feedback process by the person concerned, which tends to be accompanied by a certain confrontation phenomenon, self-confrontation. The 'image' of an action retained in oneself, and the 'image' of the action recalled often do not coincide, a positive or negative difference may appear for the 'actor', even though the (contributing) partners in the process do not perceive this, and even consider it as an objective 'reflection'. The essence of self-confrontation is that the individual may be confronted with hitherto unknown aspects of his/her behaviour (activity, personality), and may become aware of the shortcomings or falsity of his/her self-image. In the first stage of this process, the external traits come to the fore (cosmetic effect), i.e., the attention is wrongly directed not to the activity, not to the content, not to the personality. This stage should be reduced to focus attention on the content of the training, i.e., the 'performance confrontation', in which attention is directed to the essence of the training, the development of personality and the development of competence (Rudnák et al., 2016).

To summarise, training is intensive training in the processing and practical application of a specific body of knowledge, where almost all the senses are mobilised, and the knowledge is applied in an activity-specific environment. In the context of training, all the senses are activated, the knowledge is applied in situations typical of daily activities, and all the tools are used to acquire and apply knowledge, which is a prerequisite for its solid memorisation and long-term retention, and thus for its secure recall. The complexity of the training is essentially provided from several sides and can be said to be the essence of the method.

The training method in higher education
According to Piercy (2013) the use of experiential learning techniques has become popular in business education. Experiential learning approaches have significant advantages in teaching contemporary management practices such as cross-functional and team-based work. However, there is still relatively little empirical data on the success of experiential pedagogy in supporting such efforts. Awasthy et al. (2015) examines the role of Sensitisation Training (ST) methods in higher education institutions as a provider of training for future managers. The original contribution of this study is to review the process of experiential learning (EL) in ST. ST is a form of EL, yet it is a different process as it mediates through confidence building.

Based on the knowledge retention pyramid, we can expect the following retention rates for different learning techniques (Figure 1):
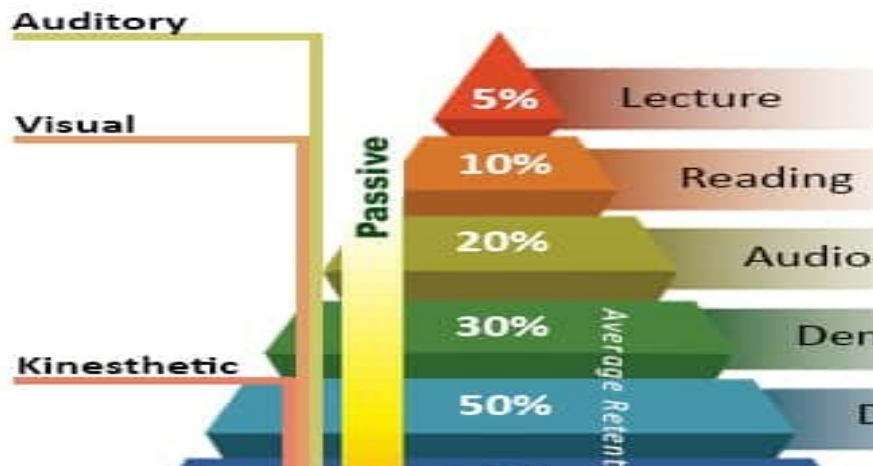

Figure 1: Learning Pyramid

Source: National Training Laboratories, Bethel Maine

Intensification, on the other hand, means that the training (as a complex) process seeks to ensure that what has been acquired, the knowledge, is firmly retained. The methods of training involve listening and seeing; processing and communicating what has been read; and the practical application of the knowledge processed. This is a crucial element of training, since it mobilises almost the entire range of the senses, ensuring that knowledge is retained only by means of a thorough grasp of the application in a variety of ways. Thorough memorisation and long-term retention require that as many of our senses as possible are functional during the acquisition of knowledge (Alosaimi, 2016).

Letrud & Hernes (2018) study finds the following: the family of cognitive models, sometimes referred to as the "learning pyramid", is highly regarded in many areas of educational studies, even though no one knows how they originated or whether they are supported by empirical evidence. It has been noted that versions of the learning pyramids have been part of educational debate and practice for over 160 years. These results show that the models were not derived from empirical research. They also argue that today's Learning Pyramids have not kept pace with advances in cognitive psychology, despite continuous modifications and modernisation. The conception of memory suggested by the Learning Pyramids differs significantly from the standard picture of human memory.

Rudnák et al. (2016) lays down training is a complex, sophisticated teaching method raining design has many intuitive elements and can be seen more as a trend or an intention than an actual lesson design. Many schools prescribe thematic plans, which are like the timetable of a regular school curriculum. This form is certainly possible, but even a trainer with minimal experience knows that if the group is leading the process, the use of time can only be influenced indirectly. In designing the training, we have used the method of space grid design, i.e., the participant experience/learning is guided by the following space grid:

Axis 1   the individual/personality dimension. Sub-dimensions: perception, cognition, attention, thinking, emotions, learning, remembering, action/activity, etc.

Axis 2   group dimension. Sub-dimensions: group development (from formation to leaving the group), group dynamics (from exploration to the 'we know' motive), quantitative and qualitative aspects of communication, task situation from problem perception to managing resistance to getting results, group roles (role taking, role delegation, identification, collisions, etc.)

Axis 3   is the dimension of tasks and interpretations, or in other words the methodology, method, and tool's part (see programme)

Axis 4   is the number of participants. This is also where small group work, the classical diad, triad structure, etc. can be represented.

In the evolution of the training market, quantitative characteristics have been replaced by qualitative ones: clients demand sophisticated objectives, professionally based training programmes with professional, well-prepared trainers. Experiential learning of almost all professional competences can be provided through training. Self-confrontation during training can become an essential element of the development activity if it is analysed from the right perspective and contributes to the achievement of the training objective by means of a 'step'. It is important when conducting training to define the purpose of each exercise (task), the criteria for observation, analysis and evaluation, so that each statement serves the output of the training (development of skills and competences) and each observation helps the trainee in one direction (Neacsu, 2014).

Higher education has a big role to play in shaping the personalities and interpersonal relationships of the students who come out of it. This

requires the acquisition of appropriate competences and skills development, and a high level of practical skills alongside theoretical knowledge. For trainers, the challenge is to balance the emphasis on the transfer of lexical knowledge with the emphasis on practical skills. Indeed, business organisations expect their future employees to have social and personal competences as well as knowledge and awareness. It is in their interest and their aim to train and develop human resources as a strategic factor. The increasing integration of training into the curriculum provides an opportunity to develop the above-mentioned areas. University lecturers and trainers need to correctly and timely identify the development directions that will apply the most effective training methods in response to the accelerating economic environment (Bajkai-Tóth & Őri, 2018).

Mészáros (2015) assesses Hungarian higher education practice in terms of the effectiveness of the training method. Kurucz & Magyar-Stifter (2018) analyses the usefulness of the training already implemented, Kóbor (2021) reports on the usefulness of training in the social sector. Méhes & Kopics (2022) report on the introduction of new methods by their institution: the aim of the programme is also to familiarise participants with the basic concepts of training, interactive training elements and their use in education, as well as to learn basic facilitation techniques. The programme will take the form of an eight-hour training session and the number of participants will be limited, considering the methodologies used. The first important step in the training is to develop a common set of concepts, with the aim of ensuring that all participants have the same understanding of the concepts used.

In conclusion, the effectiveness of the curriculum-based training tool in higher education has been proven, and it is therefore recommended that not only a wider range of higher education students, but also teachers, should be increasingly involved in its use and enjoyment.

Training subjects in the economic courses of MATE

Since many of the teachers at our institute and in our department are also qualified as vocational trainers and counsellors, teaching experiential learning in T-groups is not a problem. When compiling the curricula of our bachelor, master, and doctoral courses, we pay particular attention to the timing of the training courses. Naturally, the training courses in the first semester also have a team-building function, while the training courses in the last semester also cover current challenges of the labour market in addition to the specific objectives. The T-subjects listed in Table 1 present lessons on different topics of experiential learning at the different levels of education.

Table 1: Subjects taught using the training method at MATE

NAME OF THE TRAINING	COURSE	CONTENT
Personality development and communication	Business Administration BSc 1st semester	• two-day training • self-awareness, confidence, feedback, active listening, assertiveness, communication methods
Business communication and negotiation technique	Business Administration BSc 2nd semester	• two-day training • meeting, eight-phase negotiation, DISC model, coaching, time management, teamwork
Preparatory training for a multicultural environment	for all courses both semesters	• two-day training • ethnorelative and ethnocentric view, multiculturalism, integration competence, cultural intelligence (CQ)
Career orientation	Business Administration BSc 6th semester	• two-day training • job application: resumes, interviews, business etiquette, the ability to say no, time management, presentation
Leadership skills	Management and Leadership MSc 2nd semester	• five-day training • trust building, engagement, delegation, team building, communication, conflict management, motivation, self-awareness
MBTI and Communication	Management and Leadership MSc 1st semester	• two-day training • MBTI dimensions, field of use, additional personality theories, leadership types, confidence, self-esteem
Negotiation and Conflict	Management and Leadership	• two-day training • sources and types of

Resolution	MSc 3rd semester	conflicts, techniques and theories of conflict management, the negotiation situation, negotiation techniques
Management organization and human resource management	doctoral school 3rd semester	• two-day training • human qualities of a leader, HRM, change management, organizations, leader and boss

Source: own edited

Feedback from Master of Management and Leadership students on the Leadership Skills Training

The Leadership Skills Training is a four-semester course in the second semester of the master's degree and is usually delivered over 5 full days between 8.30am and 6pm, with, of course, face-to-face attendance - although unfortunately this has been overtaken by the Covid-19 epidemic.

The situational exercises focus on the following topics, among others: Trust building, Change management, Engagement, Delegation of tasks, Management communication, Conflict management, Motivation, Self-awareness, Team building and from two perspectives (manager and subordinate), we will examine and discuss roles, situations, accompanying phenomena and further influencing factors.

Guinot (2021) confirms the importance of these topics, as he believes that the growing implementation of horizontal structures means trust has become an essential value in many companies' operations. Teamwork, the need for constant collaboration and communication and the delegation of tasks and responsibilities inherent in this type of structure require a high degree of trust between all parties. On the other hand, companies frequently collaborate with each other to maintain their competitiveness. These business alliance agreements must be based on a close relationship of trust that allows them to work effectively together. Another study explains that trust has also been shown to improve individual and collective performance. Thus, when there are higher levels of trust, workers tend to perform better, teams function better and organizational performance increases (Guinot & Chiva, 2019). Only by evolving towards a culture and environment of trust will companies be able to develop their full human potential and possibilities of success. Zolfaghari & Farsan (2022) investigates how

organizational members activate multiple sources of cultural values to develop trust with their colleagues from different cultural backgrounds. Through a series of surveys followed by semi-structured interviews, data were collected from members operating in five different multinational organizations based in Germany and South Africa. Analyzed abductively, our findings illustrate the multiple sources of cultural values that influence members' disposition to trust and their assessment of their colleague's trustworthiness.

Table 2: Leadership Skills Training by year and participants

year	number of international students
2019	17
2020	16
2021	15
2022	12
2023	12

Source: own edited

A detailed description and analysis of the training exercises will not be presented in this paper, but some of the general evaluation formulations will be presented:

We felt many feelings such us fun, stress, fear, happiness, friendship love, joy etc. It was very interesting because we all understand that we are here to make change and we are here to become a real and good leader in the future that is why we should be more responsible for what we are doing, be more flexible and adaptable with the environment changes, people mood and needs changing and so one. We should at the end trust each other, trust our jobs because the notion of trust and confidence are very important in the job world and trust everything that we do because that what makes difference and make us special from the others. / a student from Tunisia

The training was highly valuable, offering a well-rounded learning experience. The tasks and activities were thoughtfully designed to address key aspects of transitions, teamwork, delegation, and monitoring. The trainer's guidance and feedback were instrumental in facilitating learning and growth. I feel confident that the knowledge and skills acquired will have a positive impact on my personal and professional development. / a student from Kyrgyzstan

After five days of training, I think this training is very necessary. Because before this training, although we were classmates and had been through more than one semester, we did not have much contact

and communication with each other due to online classes, and basically, we were strangers to each other. But after this training, I felt that we all knew each other and got closer to each other, and we had more communication and developed mutual understanding through some group activities and increased everyone's sense of belonging to the whole team. With the help of the professor, we continued to gain a deeper understanding of some leadership skills and personal development. Overall, during the five days of training, we all worked hard to learn the points that the trainer wanted us to understand and to present ourselves in the best way possible in all the exercises to fully integrate ourselves into the group, which I think was the trainer's hope. For the professor, I think she took this teaching style instead of the traditional lecture style to better allow us to learn from doing. But it increases the trainer/professor's workload in the preparation phase, which I respect very much. Also, the trainer was very patient and helpful, and we got along very well. / a student from China

As a suggestion, encourage students to keep a diary about their leadership lessons and their personal learning about themselves. Great leaders need to know about themselves, and they can also journal feedback given to them which will help them to grow. They should always read back on this and observe how they have changed over time. / a student from Jordan

If student desires feedback, then you should try to set up a short meeting after class to give them feedback or during the break. Alternatively keep doing what you have done in class. Get the students to give each other feedback. From the time they started the training to end and what has changed in the person. That's all I can offer from this amazing course. Thank you. / a student from Ghana

The course of Leadership skills helped me a lot in this field. I really appreciate our trainer's effort on us. She really wanted us to learn and to be a good leader in the future. She never made a difference between introverted and extraverted people. She always motivated the introverted people to speak up. Just like me. I am a quite introverted person and always hesitated to speak up in front of many people. But after this course I learned to overcome some barriers in front of me which would be a big danger for my future development. In this training I learned for to be adequate and to socialize. I learned how to act in the team. Also, I learned how to analyse a problem and discuss with the colleagues about the problem. / a student from Turkey

I realize that we all have ways we see things and perceive things. What you may see as good may seem to be bad to another person. So as a

good leader you must respect and tolerate the ideas and thoughts of people to achieve a desired success and results. This training has helped me to believe in myself and given me great conviction with optimistic to achieve to greater height. There is still more to learn since leadership is practical, we need to practice and get experience to be better leaders. / a student from Nigeria

The training days provided an exciting range of activities that contributed to personal and professional growth. The tasks fostered self-reflection, collaboration, cultural awareness, and skill development. They offered practical insights and knowledge applicable to various contexts. The overall assessment of the training days is positive, as it facilitated learning, engagement, and personal development. / a student from Syria

The training program enables me to obtain leadership skills in aspects of widely fundamental information and theorizing, which could prove beneficial to me as a character and behavioural realization of a leader with aspects of globalized alterations. By the value of the lesson itself, trainer experience, and trainee participation. I personally state that this training is successful in knowledge transfer, mutual understanding, and multicultural awareness. The training will effectively lead to behavioural changes, attitude alternatives, and being effective in a human context. /a student from Laos

I hereby with due respect and whole heart acknowledge that you were good during training. You were little bit strict during the training regarding timing, presence, but still I think that it was all for our benefit. It was for us to learn the time management. It was because of your hardworking and sincerity we learnt about, what we never knew before. Thanks for all of this. / a student from Turkey

*"***We came here alone and individually, but we are going home as a TEAM.***"*

And finally, this word cloud is the result of the aggregation of the submissions written on the analysis of the training exercises (Figure 2):

Figure 2: Word cloud from the Leadership Skills Training student evaluation

Source: own edited

Conclusions

The training method as a practice-oriented and skill-building training method is nowadays a very important element of higher education, including adult education. Training is embedded in traditional training elements, complementing - not replacing - them, and offers the opportunity to provide students with lasting, deep, easily retrievable knowledge, from a practical perspective, through experiential learning. Elements of this method are increasingly being integrated into the seminar format, helping to test the practical side of theoretical knowledge. I believe that training courses have a raison d'être and will increasingly have a raison d'être among the various training methods.

We need to take the feedback from international students seriously, although their cultural differences and their educational background, which in many cases is a difficulty, certainly influence their opinions, but the positive connotation of their opinions and the recognition of their knowledge gained through experiential learning, both confirm for us the continued use of T-subjects, i.e., the training method, as there is a clear satisfaction among our students.

In my opinion, based on these reflections, we can say that the students listed a lot of positives, which shows that this training is indeed an effective, efficient, and practical form of training, and they are happy to choose it as one of their subjects.

As a matter of fact, most managers will readily admit that the interpersonal aspects of their job are more challenging than the technical ones. Furthermore, it is well known that more than 80% of managers who are dismissed lose their jobs because of poorly developed interpersonal skills, therefore the justification for Leadership Skills Training is indisputable. Even those who don't lose their jobs find that their inability to increase their interpersonal skills limits their career, which clearly demonstrate the importance of skill development methods, experiential learning, and the effectiveness of the T-group method.

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MOBBING AMONG ADOLESCENTS: SOCIAL CAUSES, FORMS AND INTENSITY, FAMILY SITUATION, AND PARENTING PRACTICES

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Abstract: This study focuses on the phenomenon of mobbing among adolescents aged 15 to 16, analyzing its social causes, forms, and intensity of manifestation, as well as family situation and opinions regarding adolescent education and parenting practices. The aim of the research is to develop a model for approaching mobbing and to analyze the results obtained. The study examined the manipulated variables and basic statistical indicators that characterize these variables in the research sample, and the results showed that most students live with both parents and consider their household's financial situation to be similar to that of their friends and classmates. Overall, mobbing represents an important social problem among adolescents and can have significant negative effects on the mental and physical health of its victims. By identifying the causes of mobbing behaviors, this information can be used to develop effective prevention programs in the school environment.

Keywords: mobbing, adolescents, social causes, family situation, parenting practices, statistical indicators, social problem, negative effects, mental health, physical health, victims, behaviors, prevention, school environment.

Introduction

Mobbing is a very serious phenomenon that can have serious consequences for adolescents. Adolescents aged 15 to 16 are in a critical period of emotional and social development, and mobbing can negatively affect these processes. Harassment, verbal or physical violence, social ostracism, and intimidation are all forms of abusive behavior that can be encountered in the adolescent environment. Such behavior can lead to decreased self-confidence, anxiety, depression, and even social isolation [6, 11].

Adolescents who suffer from mobbing may have difficulty building healthy and lasting relationships, which can negatively affect their quality of life. It is important for parents, educators, and authorities to

be aware of this phenomenon and to take measures to prevent and intervene in cases of mobbing. It is important to promote a culture of respect and tolerance in schools and in the community at large so that adolescents can learn to communicate and interact with each other in a healthy and positive way. It is also important for adolescents to understand that it is not their fault when they are victims of mobbing and that it is important to seek help from trusted adults to cope with this difficult situation [5, 9].

Studies show that gender is an important factor when it comes to mobbing among adolescents. Thus, girls are twice as likely to be victims of this phenomenon than boys. This difference can be attributed to several factors, such as the social roles assigned to each gender or gender stereotypes that can be used as pretexts for harassment. Additionally, socioeconomic status and geographic region also play an important role in exposure to mobbing. Young people from lower socioeconomic backgrounds and rural areas are more vulnerable to harassment because they may be more socially isolated and less prepared to handle conflict situations. Moreover, different cultures and values can influence how young people perceive and manage abusive behaviors, as well as their level of tolerance towards them. Regardless of the specific factors that may influence the incidence of mobbing, it is important for parents, educators, and authorities to be aware of this phenomenon and take measures to prevent and combat abusive behavior among adolescents. By educating young people about the importance of respect, tolerance, and empathy, we can contribute to creating a safer and more harmonious environment for all young people [8].

According to a study conducted in Sweden, high school students are to some extent exposed to mobbing, experiencing abusive behavior within their learning environment. This study showed that approximately 6% of students were subjected to mobbing at least once a week, and 2% were victims of mobbing on a daily basis [3].

Meanwhile, in the United States, another study showed that nearly one-third of high school students reported being subjected to mobbing in the past 12 months. These alarming figures highlight the widespread nature of the mobbing problem in schools and underscore the importance of addressing this issue through preventive and intervention measures. It is important for education in schools to be supplemented with socio-emotional education programs and programs to prevent and combat mobbing, to help students learn to communicate

and manage difficult situations in a constructive and healthy way [2].

Mobbing is a social problem that can have a significant impact on its victims, including their mental and physical health. People who are bullied can experience stress, anxiety, depression, sleep problems, concentration and learning difficulties, relationship problems, and may even develop personality disorders or other more serious mental health problems. To prevent and address mobbing, it is important for parents, educators, and the community to be aware of this issue and take appropriate action. Firstly, it is important for adults to encourage students to communicate and discuss any problems or discomfort they encounter in school or social environments.

There should also be socio-emotional education programs in schools that help students understand and manage emotions, develop communication skills, and learn to engage in healthy and respectful relationships with others. In addition, it is important for schools to include mobbing prevention and intervention programs that teach students to recognize and report abusive behaviors and understand the negative consequences of these actions [4].

If cases of mobbing are observed, it is important for adults to take appropriate intervention measures, such as individual or group counseling, changing the learning environment, or disciplinary sanctions, depending on the situation [7].

In conclusion, it is important to raise awareness of and address the issue of mobbing among adolescents to ensure a healthy and respectful learning and social environment for all young people.

Results and Discussions
In continuation of the research, the phenomenon of mobbing was addressed, and the results showed that 13% of respondents were subjected to this phenomenon in the last academic year, suggesting a significant prevalence of mobbing among adolescents. Additionally, it was found that girls are more exposed to mobbing than boys, and that this phenomenon is more widespread in the school environment than outside of it.

Furthermore, the quality of the family environment and parental practices were analyzed, and it was found that they have a significant influence on adolescent exposure to mobbing. Adolescents who come from dysfunctional family backgrounds or have parents with authoritarian parenting practices are more susceptible to mobbing.

These results highlight the importance of the role of parents and family education in preventing and treating the phenomenon of mobbing among adolescents. It is important for parents to pay special attention to their children's socio-emotional education, promote positive relationships in the family, and encourage communication and the development of social and emotional skills in their children. Additionally, school education should include programs to prevent mobbing and develop the socio-emotional skills of students.

To analyze the phenomenon of mobbing in the adolescent group, we began with a quantitative and qualitative study based on information obtained through a questionnaire. Although the primary objective of the doctoral research is to describe the phenomenon of mobbing, including its social causes, forms, and intensity of manifestation among adolescents, we considered it necessary to include items that address the family situation (such as the type and size of the household and consumer needs satisfaction), the quality of the family environment, opinions on adolescent education, and parental practices [10].

This decision was motivated by the need to analyze mobbing and the causes of this negative phenomenon in relation to as many factors as possible that can contribute to or affect the life trajectory and socialization of adolescents.

In the first phase of the research, we examined the distribution of the manipulated variables and several basic statistical indicators that generally characterize these variables in the research sample (e.g., mean, minimum and maximum values, standard deviation).

We also checked whether the variable distributions meet the criteria of data normality and, if not, planned to use tests for non-parametric data.

In the initial stage of our survey, we focused on investigating the profile of the families from which the participating adolescents come. In this regard, we analyzed household structures and found that the average number of children per family is 1.68, a figure similar to the general population average. The modal and median values are 1. The minimum number of children per household in the studied population is 1, and the maximum number is 6.

From a percentage perspective, 50% of households in our sample have one child, 38.9% have two children, 7.1% have three children, and 4% have more than four children.

The average age of the students who completed our questionnaire is 16.3 years. Most students reported living with both parents (72.7%). For those who do not live with both parents, we obtained the following data (Table 1):

- 11% are in the care of a single parent due to their divorce/separation (8.6% are in the care of the mother, and 2.4% are in the care of the father);

- 5.4% live with their mother, while their father works abroad; 2.8% live with someone else (grandparents, relatives, other adults), while both parents work abroad, and 2.5% live with their father while their mother works abroad;

- 2.4% are in the care of a single parent due to the death of the other parent;

- 3.2% claim to live with someone else (related or unrelated persons) for various reasons.

Table 1. Demographic and social statistics of students and their families

Item (Statistics)	Value
Average number of children per family	1.68
Mode of number of children per family	1
Median of number of children per family	1
Minimum number of children per household	1
Maximum number of children per household	6
Percentage of households with 1 child	50%
Percentage of households with 2 children	38.9%
Percentage of households with 3 children	7.1%
Percentage of households with more than 4 children	4%
Average age of students who completed the questionnaire	16.3 years
Percentage of students living with both parents	72.7%
Percentage of students living with one parent due to divorce/separation	11%
Percentage of students living with their mother, while their father	5.4%

Item (Statistics)	Value
works abroad	
Percentage of students living with someone else (grandparents, relatives, other adults) while both parents work abroad	2.8%
Percentage of students living with their father, while their mother works abroad	2.5%
Percentage of students living with one parent due to the death of the other parent	2.4%
Percentage of students living with someone else (related or unrelated persons) for various reasons	3.2%
Percentage of households with children aged 15-16 facing migration abroad	11%
Percentage of households with children aged 15-16 facing migration abroad affecting only one parent	8%
Percentage of households with children aged 15-16 facing migration abroad affecting both parents	3%

It should be noted that approximately 11% of households with children aged between 15 and 16 are facing migration abroad, affecting in almost 8% of cases a single parent, and in approximately 3% of cases, both parents.

Figure 1 shows that the majority of students (approximately 85%) consider their household's financial situation to be similar to that of their friends and peers.

When analyzing socio-demographic variables, we observed that male students are significantly more likely to consider their family's financial situation to be better than those around them, compared to other respondents of their age ($\chi2(2) = 11.34$, $p < .05$).
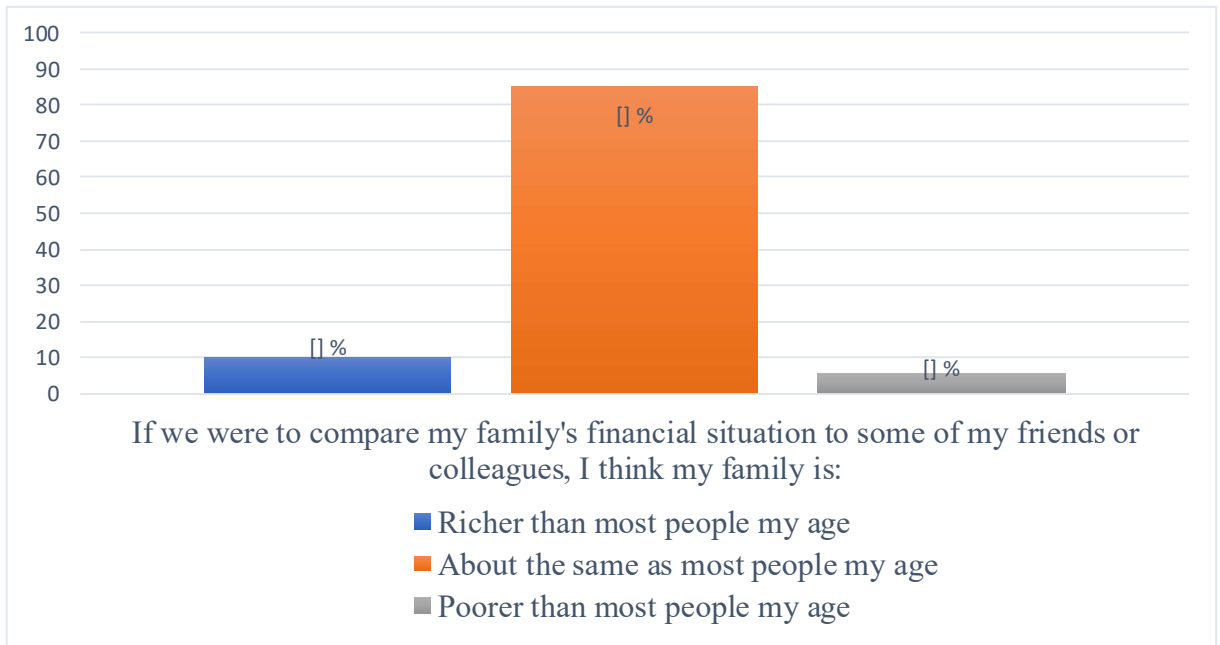
Fig. 1. The financial situation of the family compared to that of friends/colleagues

Regarding the relationship with their parents, it can be observed that the majority of students (91.8%) have a good or very good relationship with them (Figure 2). When analyzing the demographic variables, no significant differences are observed between the residence area or the gender of the students who answered the questionnaire. In other words, students from rural and urban areas describe their relationship with their parents similarly, as do girls and boys.

However, if we take into account the age of the students, it can be observed that older students describe this relationship as very good to a significantly greater extent: $\chi 2$ (4) = 48.79, p < .01).
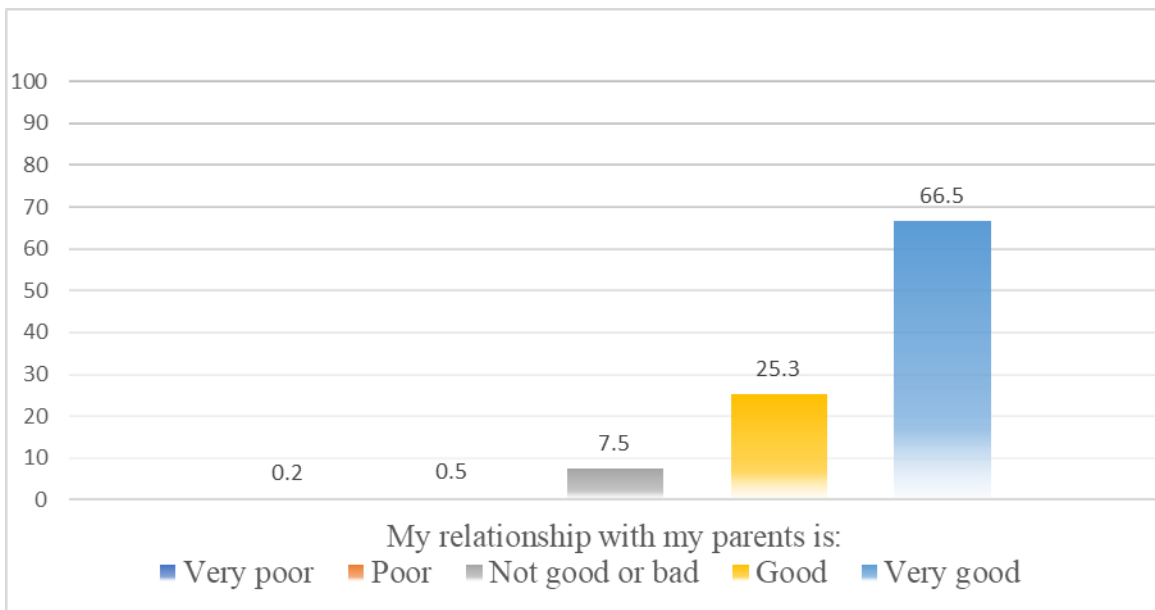
Fig. 2. Students' relationship with their parents (in %)

In regards to family activities and ways of spending time together (Figure 3), the majority of students report that their mother is the one who listens to them when they have problems or helps them with their homework (if there is someone who helps them). There is a difference in the importance attributed to people in their immediate social environment. In fact, the results suggest that students want to identify with their peer group. When they need help and support, students prioritize their mother first, followed by their father. The relationship with other significant adults is less intense than with parents.

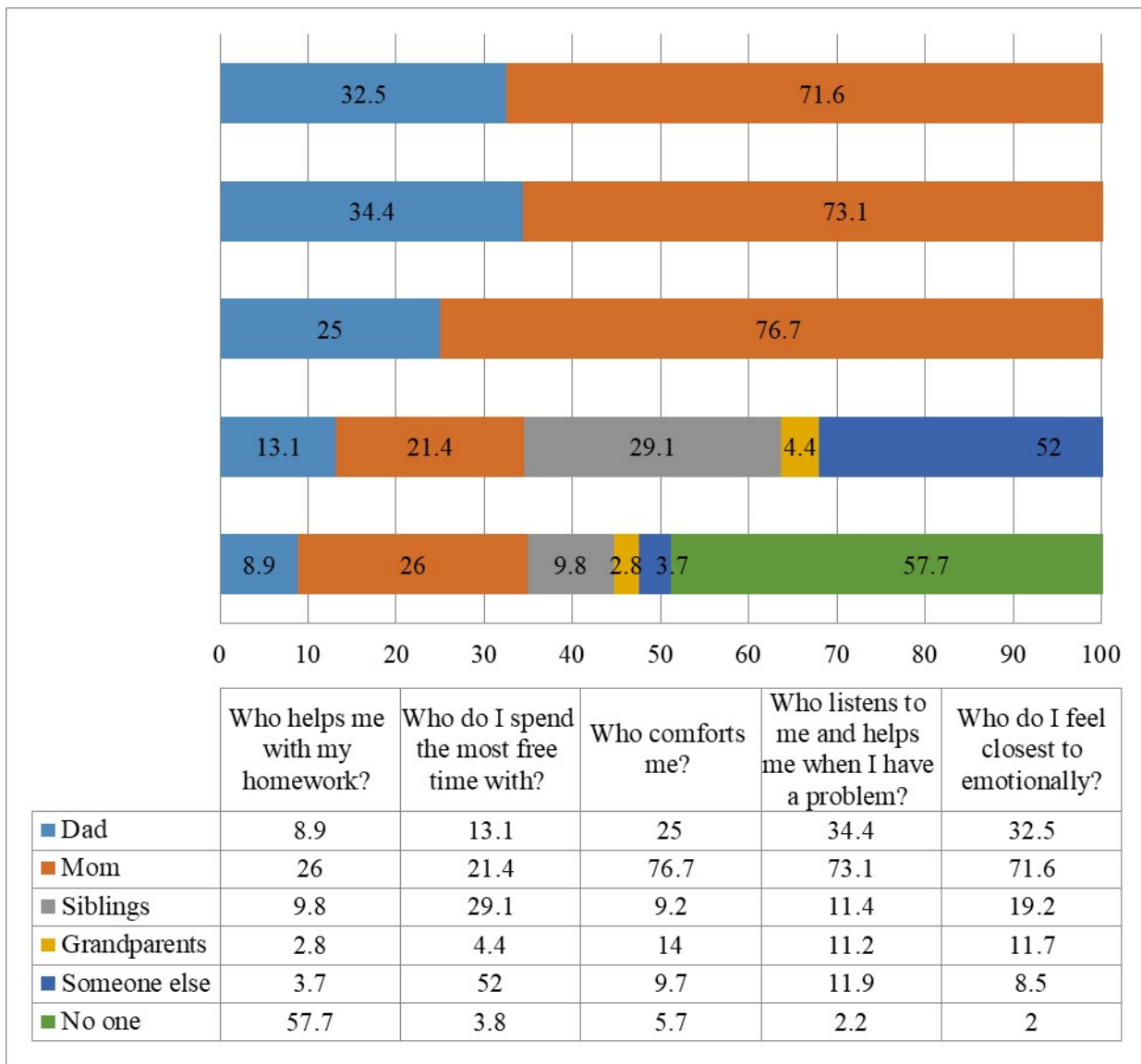|	Who helps me with my homework?	Who do I spend the most free time with?	Who comforts me?	Who listens to me and helps me when I have a problem?	Who do I feel closest to emotionally?
Dad	8.9	13.1	25	34.4	32.5
Mom	26	21.4	76.7	73.1	71.6
Siblings	9.8	29.1	9.2	11.4	19.2
Grandparents	2.8	4.4	14	11.2	11.7
Someone else	3.7	52	9.7	11.9	8.5
No one	57.7	3.8	5.7	2.2	2

Fig. 3. Ways of spending time with family (cumulative percentages)

It is worth noting that almost 58% of the students do not receive any help from anyone when preparing their homework. Additionally, it can be observed that the involvement of grandparents and other family members is limited. There is a statistically significant difference between the role of the mother, father, and other family members in their involvement in the students' homework preparation: χ^2 (5) =121.10, p < .01.

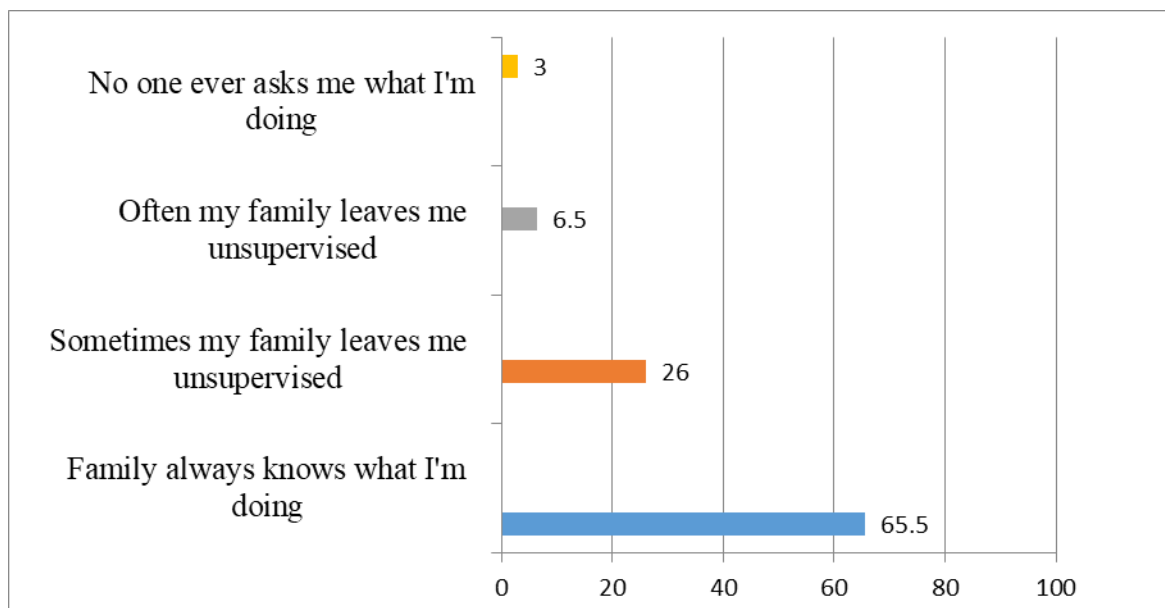How monitored do you feel by your family?

Fig. 4. Monitoring of students by family

65.5% of students reported feeling supervised by their families all the time, while 26% stated they are sometimes left unsupervised, and 6.5% are often in this situation, according to the data from Figure 4. This suggests that there are more unsupervised students than those affected by parental migration.

Regarding gender differences, girls significantly report more than boys that they are supervised by their families ($\chi2(3) = 38.36$, $p < 0.01$).

Moreover, students from rural areas report to a greater extent than those from urban areas that they are sometimes left unsupervised by their families or that no one ever asks them what they are doing ($\chi2(3) = 20.40$, $p < 0.01$) [1].

Conclusions
The study's "Results and Discussions" section commenced with an analysis of the mobbing phenomenon among teenagers, which involved a quantitative and qualitative investigation through a questionnaire. The study found that 13% of respondents were subjected to mobbing in the last school year, suggesting a significant prevalence of this phenomenon among adolescents. The study also found that girls are more exposed to mobbing than boys, and this phenomenon is more widespread in the school environment than outside it. Additionally, the study analyzed the quality of the family environment and parental

practices and found that these have a significant influence on adolescents' exposure to mobbing. Adolescents from dysfunctional family environments or those with authoritarian parental practices are more exposed to mobbing.

The results highlight the importance of the role of parents and family education in preventing and treating mobbing among teenagers. Parents should pay special attention to their children's socio-emotional education, promote positive relationships in the family, and encourage communication and the development of social and emotional skills in their children. School education should also include programs for preventing mobbing and developing students' socio-emotional skills.

Regarding the methodology, the study used a questionnaire to collect data from a sample of teenagers. The study also analyzed the distribution of variables and some basic statistical indicators characterizing these variables in the research sample. The study checked whether the variable distributions meet the normality criteria and, if not, planned to use non-parametric tests.

The study also examined the profile of the families from which the participating teenagers come and analyzed the structure of households, finding that the average number of children per family is 1.68, similar to the general population's average. The study found that 50% of households in the sample have one child, 38.9% have two children, 7.1% have three children, and 4% have more than four children. The study concludes that the findings provide insights into the factors contributing to mobbing among teenagers and emphasize the importance of prevention efforts.

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