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Students' perception, concentration, and attention in learning and teachers' challenging approaches for effective and efficient learning: The social context, the influence of social networks, and technology have changed the learning environment and the need for new educational policies

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Abstract: This study is in the field of cognitive psychology and it focuses on the perception and attention of students in learning. The purpose of this study is to investigate the factors affecting the perception and concentration of students in learning, as well as the new contexts created with the development of technology. The perception and concentration of students in learning have changed, and distracting factors have increased. This study hypothesizes that high learning outcomes for students are achieved through interactive learning and new inclusive approaches. The study method is both quantitative and qualitative. For this, questionnaires are administered to a specific sample, and for the qualitative method, observations and interviews are conducted from which the necessary data are collected for analysis. The study population consists of all pre-university education students in Tirana, and the study sample is composed of three 9-year schools in the city of Tirana and three schools in the Elbasan region, totaling 5,400 students. The schools were selected by lot from a total of 112 schools in the city of Tirana and 23 schools in the Elbasan region. Data analysis is performed using the SPSS program, and for qualitative data, categorization and classification of the analyzed data are employed. The conclusion is that the factors of perception, concentration, and attention of students in teaching and learning have changed in favor of distraction, and teachers must ensure that learning builds different approaches to mitigate the distractions of perception and concentration.

Keywords: *Attention, Concentration, Distraction, Learning, Perception, Teaching.*

1. Introduction

Perception and concentration play an important role in the collection of information. Through perception and concentration, knowledge of nature and its phenomena is realized, that is, knowledge of the real world. Brain cognitive functions are the mental processes that allow us to receive, select, store, transform, develop, and recover information that we've received from external stimuli. This process allows us to understand and to relate to the world more effectively [1].

Even in school, the acquisition of knowledge by students in an efficient and effective way is realized through the perception and concentration of students in the learning process.

Traditional learning has been based on perception and concentration as an effective and efficient way of realizing learning and learning in the classroom. The concentration and perception of students to learn and be taught were easily ensured by the teacher all the time until around years 2000 by using simple didactic methods and tools to illustrate and concretize learning and learning as best as possible.

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Until now, the teacher has been and was seen as the center of knowledge, and through his explanations he ensures the learning and learning of students. The development of science and technology has changed the role of the teacher as the only source of knowledge but has also changed the concentration and perception of students in learning.

Traditional teaching results in low effectiveness. This study aims to identify the causes that have led to the decrease in the effectiveness of teaching with traditional teaching and the modeling of new teaching methods to increase the effectiveness of learning with new teaching methods. The objectives of this study are based on the factors of concentration and distraction of students in learning, the modeling of new learning approaches to challenge student distraction in learning, and the realization of high results in students in learning.

To achieve the objectives of this study, we need to answer the following questions: What are the distracting factors for students in learning? How has the role of the teacher changed in learning? How are high learning and teaching results achieved in this new role of the teacher and challenging distracting factors in learning through new learning and teaching models? The hypothesis of this study is that high learning results of students are achieved through interactive learning and new inclusive approaches.

2. Literature Review

Perception is the organization, identification, and interpretation of sensory information to represent and understand the presented information or environment [2]. Perception starts with bottom-up processing, which involves receptors. Signals from these receptors cause neurons in the cortex to respond to specific types of stimuli. According to recognition-by-components (RBC), one of the characteristics of object perception is that we can recognize an object if we can perceive just a few of its geons [3]. Perception is not only the passive receipt of these signals, but it is also shaped by the recipient's learning, memory, expectation, and attention [3] and Bernstein [4].

To know the world around you, to know it, to understand knowledge, the first thing is to perceive it clearly, to pass it through neural processes, and to be deposited in the brain. There is no accurate knowledge and understanding of objects, the world, and nature around you without an accurate and clear perception. After perception, a very important neural process to understand objects, the world, and nature around you is attention.

Attention plays a critical role in almost every area of life, including school, work, and relationships. It allows people to focus on information to create memories [5].

The act of directing the mind to listen, see, or understand; notice (Oxford Dictionary) [6].

Focused attention refers to being able to actively focus on one thing without being distracted by other stimuli, and sustained attention can be defined as the ability to maintain concentrated attention over prolonged periods of time [5].

Attending is a cognitive process that incorporates a person's knowledge, goals, and expectations [7].

Attention can be defined as a multifaceted gateway to consciousness [8].

We use attention to focus on specific sensory signals (selective attention), to allocate resources to concurrent relevant sources (divided attention), to switch between tasks (alternate attention), to maintain focus on a task for a prolonged period (sustained attention), to ready ourselves for a quick response to sudden novel information (alertness); and all these processes, to some extent, control what sensory signals are processed up to the level of conscious awareness [8].

It is widely assumed that the grouping of the visual field first described by the Wertheimer [9] psychologists and the related phenomenon of texture segregation occur very early in the processing of visual information and involve preattentive processes [10].

James wrote that attention "is the taking possession by the mind, in clear and vivid form, of one out of what may seem several simultaneously possible objects or trains of thought…It implies withdrawal from some things in order to deal effectively with others."

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Having found by the use of a new method for examining perception without attention that grouping and texture segregation do not seem to occur (see Mack, et al. [10] Cognitive Psychology, 24, we go on to ask what is perceived without attention using this new method. Our subjects receive only one inattention trial in a sequence of trials involving a visual distraction task. In addition to the distraction task in the inattention trial, subjects received a stimulus of which they had no prior knowledge or expectation and were questioned or tested directly afterward for their perception of that stimulus [11].

Attention ensures the transfer of information from the senses to memory. Information is abundant and attention is limited. Selective attention plays an important role in selecting information that is received from the sensors to memory. This is explained by Lachter, et al. [12] that information is selected according to physical characteristics.

Another model of attention explanation is Treisman's Attenuation Model [13]. This model explains that instead of "bottlenecking" what information passed to our attention, it is just "attenuated" it.

2.1. Inattentional Blindness

This is explained by the experiment called the Invisible Gorilla. Two teams were playing basketball, and the participants in the study were asked to count how many times the team with the white stripes would catch the ball. During this time, a person dressed as a gorilla enters and exits the game. 50% of the participants in the study did not notice the gorilla entering and leaving. This is explained by the fact that information is only received when you are paying attention, which is why it is called inattentional blindness.

The "Invisible Gorilla" experiment is more than just a quirky trick on the mind. It underscores a fundamental aspect of human cognition: our attention is limited, even when focused intently on a task. It reveals the boundaries of human perception and illustrates how easy it is for us to miss even glaringly obvious events when our attention is directed elsewhere. This has broader implications in driving safety, aviation, and everyday tasks. It reminds us that our perception of the world isn't always as complete or accurate as we believe and that there are limitations to our conscious awareness.

Change blindness is when we have two stimuli and the difference is not noticed. In this case, one stimulus is distracting for attention to the other stimulus. This is explained by the distraction of your attention from an object or imagination in a safe situation.

2.2. Multitasking

When people think of doing many tasks at once, they deceive themselves by reducing attention or switching attention from one task to another, and again from one task to another.

The importance of attention in learning and remembering.

Learning knowledge, knowledge, and concepts is their deep understanding, their retention in memory, and their recall, analysis, and practical use. However, learning and remembering cannot be realized without attention as a psychological process. Attention is limited, therefore effective learning is realized through selective attention [5]. The brain remembers what it intends to learn and is focused on learning. Other stimuli are selected, excluded, and do not pass through the process of passing information and storing it in memory. The experiment conducted on the effectiveness of listening to the message in both ears shows that the unattended message was not heard and the attentive message was heard. Other researchers have demonstrated the “cocktail party effect” [14] under experimental conditions and have discovered occasions when information heard in the unattended ear “broke through” to interfere with information participants are paying attention to in the other ear.

According to Schmidt [15] numerous studies have generated substantial evidence that distracted learning has quite a detrimental effect on learning (e.g., [16-24]).

2.3. Distraction of Attention

The definition of distraction in psychology according to the APA Dictionary of Psychology is as:

1. The process of interrupting attention, and

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2. A stimulus or task that draws attention away from the task of primary interest.

There are many factors or different stimuli to influence attention during learning and teaching the students. The challenge of the contemporary teacher in the 21st century is to get the full attention of students and eliminate factors that distract students from what is being learned and taught so that students achieve high results.

Bhatia [25] defines distraction as any stimulus whose presence interferes with the process of attention or draws away attention from the object to which we wish to attend (cited by Naik [26]).

How can we categorize the distractions according to causing? Here it is the following:

a) distraction happens from a lack of ability to pay attention

b) distraction happens from a lack of interest in the object of attention, or

c) distraction happens from the great intensity, novelty, or attractiveness of something other than the object of attention.

The extent to which people can focus attention in the face of irrelevant distractions has been shown to critically depend on the level and type of information load involved in their current task. The ability to focus attention improves under task conditions of high perceptual load but deteriorates under conditions of high load on cognitive control processes such as working memory [27].

3. Study Methods

For the realization of this study, data were collected from 50% of teachers from schools in Tirana and 50% from other schools such as Elbasan, etc. The data requested from teachers who teach in their classes on students' concentration in learning, on students' attention in learning, and on students' interest in learning during the school lesson. The method of this study is mixed. We have the quantitative method in which teachers express their level of concentration, attention, or interest in learning with the Likert scale starting with the number 1 which indicates little, and the number 5 which indicates a lot. The quantitative data are analyzed with the SPSS program. The qualitative method consists of the interviewed teachers' answers to three open questions that interpret this level of concentration, attention, or interest of students in learning. The qualitative data are analyzed by categorizing the interviewed answers and interpreting them. The study population is school students in Albania and the study sample is students from 9 schools in Tirana and 3 schools in the Elbasan region. The total sample is 5400 students. The technique used to obtain data is through observation by 57 teachers. These teachers constituted a highly qualified team who were selected and trained to perform the task of quality coordinator in schools with the main goal of improving the quality of student results. The teachers expressed their observed data through questionnaires and interviews. 34 observations were made in different classes and lessons were given in some classes dozens of times to observe students' concentration, attention, and interest in learning.

4. Results and Discussion of Data

Descriptive statistics are shown in Table 1. The sample of teachers is 57.

Table 1.
Descreptive Statistics.

Descriptive Statistics					
	N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Employed	57	1.00	3.00	2.4386	0.62728
Students Are Concentrated In Learning	57	1.00	5.00	3.1754	0.78200
Students Are Interested In Learning	57	1.00	5.00	3.2456	0.82982
Students Are Attentive To Learning	57	1.00	5.00	3.2807	0.77354
Valid N (Listwise)	57				

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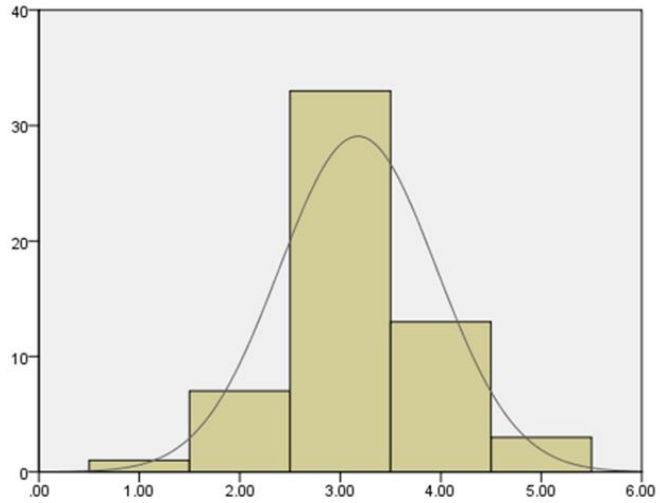

Figure 1.
Students are concentrate in learning.

According to graphic no 1, the concentration level of students in learning is too low. If we have 50 % concentration on learning, the students' results are not possible to be more than 50%. What would be done is to change the way of learning to win the concentration of students to learning.

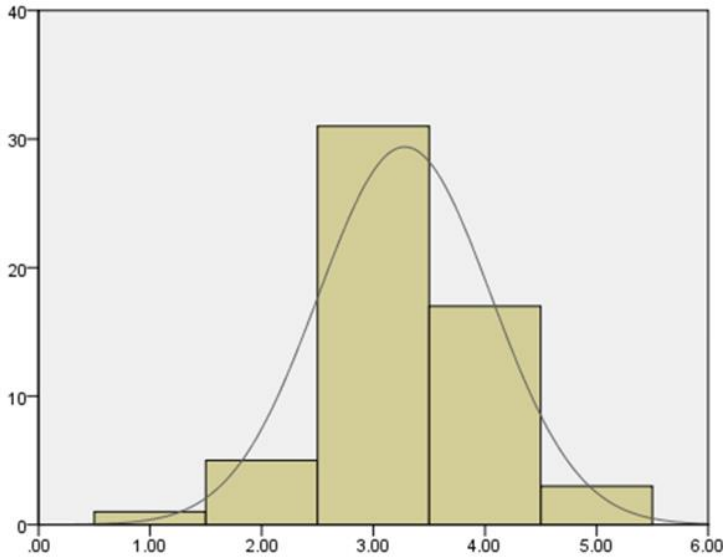

Figure 2.
Students are attention in learning.

According to graphic no 2, the attention of students to learning is also too low. If the attention of students in learning is about 50%, this tells that the students' results are not possible to be more than 50%. What would be done to win the students' attention is to change the way of learning to students. If the students do not, learn as we teach, we must teach them as way they learn.

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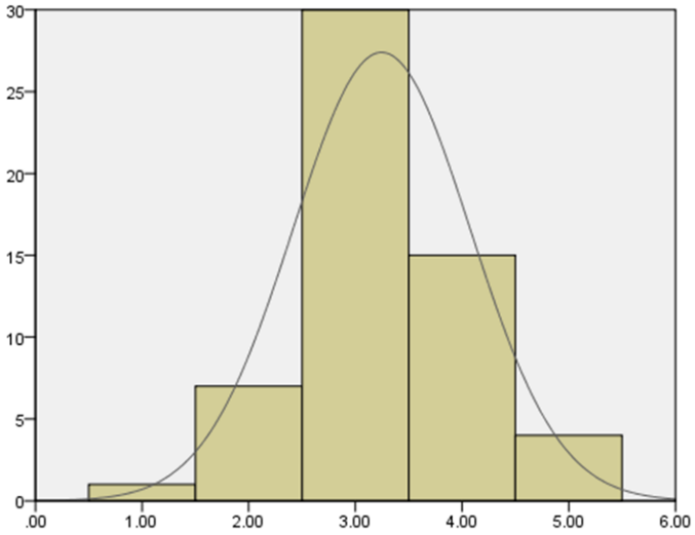

Figure 3.
Students are interesting in learning

According to graphic, no 3 shows that students' interest in learning is about 50%, but students' results are not possible to be more than 50%. What can we do to teach the students? We ought to change the way of learning to teach the students.

Table 2.

Correlations					
Control Variables			**Students are concentrated in learning**	**Students are attentive to learning**	**Students are interested in learning**
Employed	Students are concentrated in learning	Correlation	1.000	0.780	0.643
		Significance (2-tailed)	.	0.000	0.000
		df	0	54	54
	Students are attentive to learning	Correlation	0.780	1.000	0.671
		Significance (2-tailed)	0.000	.	0.000
		df	54	0	54
	Students are interested in learning	Correlation	0.643	0.671	1.000
		Significance (2-tailed)	0.000	00.000	.
		df	54	54	0

The data in Table 2 shows that concentration, attention, and interest in learning have a strong correlation. So every variable has its influence on students' learning.

Table 3.
Reability statistics.

Cronbach's Alpha	**Cronbach's Alpha based on standardized items**	**N of items**
0.900	0.902	3

According to Table 3, Cronbach's Alpha tells that reliability when it is analysts frequently use 0.7 as a benchmark value for Cronbach's alpha/ At this level and high, the items are sufficiently consistent to indicate the measure is reliable.

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Table 4.
Inter- Item Correlation Matrix.

	Students are concentrated in learning	Students are attentive in learning	Students are interested in learning
Students are concentrated in learning	1.000	0.832	0.703
Students are attentive to learning	0.832	1.000	0.725
Students are interested in learning	0.703	0.725	1.000

Table 5.
Summary Item Statistics.

	Mean	Minimum	Maximum	Range	Maximum / Minimum	Variance	N of Items
Item Means	3.234	3.175	3.281	0.105	1.033	0.003	3

Table 6.
Correlations.

		Students are concentrated in learning	Students are attentive in learning	Students are interested in learning
Students are concentrated in learning	Pearson Correlation	1	.832**	.703**
	Sig. (2-tailed)		.000	.000
	Sum of Squares and Cross-products	34.246	28.193	25.544
	Covariance	0.612	0.503	0.456
	N	57	57	57
Students are attentive to learning	Pearson Correlation	0.832**	1	0.725**
	Sig. (2-tailed)	.000		.000
	Sum of Squares and Cross-products	28.193	33.509	26.070
	Covariance	0.503	.598	0.466
	N	57	57	57
Students are interested in learning	Pearson Correlation	0.703**	.725**	1
	Sig. (2-tailed)	0.000	0.000	
	Sum of Squares and Cross-products	25.544	26.070	38.561
	Covariance	0.456	0.466	0.689
	N	57	57	57

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

According to Table 4,5,6 Pearson correlation shows strong correlations among concentration, attention, and interest in learning. Every variable is important and influences in learning of students and students' outcomes.

4.1. Distraction Factors to Students Concentrate on Learning

From the analysis of the data, it results that the factors of distraction are very, very complex. One of the factors that is mentioned the most is the lack of interest of the students. Another important factor of distraction is social networks and the use of technology. Factors influence distraction in various ways, such as fatigue, insomnia, irregularity, withdrawal from the cell phone, promotion by the media of the negative sides of society, age characteristics, lack of creativity, monotonous lessons, etc.

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Table 7.

Data from analysis of data for distractions	
Lack of interest	**19 times mention in interviews**
Technology	9 times
Social networks	9 times
Insomnia	8 times
Other factors	12 times
Total	57 interviews

4.2. Distraction Factors to Students' Attention on Learning

The main factors that influence attention deficit are lack of interest and social networks. Other factors that influence are the load of concepts and knowledge, other interests, being hyperactive, low parental interest in students, lack of connection between knowledge and reality, malnutrition, receiving ready-made information, poor student textbook material, and lack of didactic and teaching aids.

4.3. Factors That Reduce Students' Interest in Learning

Students' interest in learning is a key factor that also influences the increase in concentration and attention, without which we cannot learn and retain knowledge.

Among the most influential factors for losing interest in learning are preoccupation with games, desire for entertainment, lack of interest in learning, pursuit of other interests, the role of the family, parental interest in student progress, the influence of negative role models, etc.

By analyzing the qualitative data, we have these categorizations for the main factors.

While analyzing data it seems to be mentioning some of the challenges that students face in school, especially regarding concentration and interest in learning. Technology, social media, insomnia, and lack of discipline are some of the factors that negatively affect them.

Here are some ideas that can help improve the situation:

1. Use technology in a controlled manner: Setting limits on the use of phones and social media during class.

2. Interactive teaching methods: Using educational games and activities that attract students' attention.

3. Support from parents: Parents should be more involved in their children's education and set rules for the use of technology at home.

4. Creating a healthy learning environment: Providing classes with an appropriate number of students and functional laboratories.

5. Motivation and evaluation: Students should feel motivated and evaluated for their efforts in learning.

While analyzing data it seems that there are many factors that affect students' concentration and interest in school. In addition to technology and social media, you also mention a lack of interest from parents, a heavy load of concepts, and traditional teaching methods.

Here are some suggestions that could help improve the situation:

1. Using technology in a controlled manner: Setting limits on the use of phones and social media during class and at home.

2. Interactive teaching methods: Using educational games, practical activities, and technology to make learning more engaging.

3. Parental support: Parents should be more involved in their children's education and set rules for the use of technology at home.

4. Creating a healthy learning environment: Providing classrooms with an appropriate number of students and functional laboratories.

5. Motivation and Appreciation: Students should feel motivated and appreciated for their efforts in learning.

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6. Incorporating physical activity and regular breaks: This can help reduce fatigue and improve concentration.

7. Time management education: Teaching students to manage their time effectively can help them balance schoolwork and other activities.

While analyzing data there seem to be many factors that affect students' concentration and interest in school. In addition to technology and social media, you also mention a lack of interest from parents, a heavy load of concepts, and traditional teaching methods.

Here are some suggestions that can help improve the situation:

1. Use technology in a controlled manner: Set limits on the use of phones and social media during class and at home.

2. Interactive teaching methods: Using educational games, hands-on activities, and technology to make learning more engaging.

3. Parental support: Parents should be more involved in their children's education and set rules for the use of technology at home.

4. Creating a healthy learning environment: Providing classrooms with an appropriate number of students and functional laboratories.

5. Motivation and assessment: Students should feel motivated and assessed for their efforts in learning.

6. Incorporating physical activities and regular breaks: This can help reduce fatigue and improve concentration.

7. Time management education: Teaching students to manage their time effectively can help balance schoolwork and other activities.

Distraction factors in student teaching and learning.

From observations made during classroom teaching, the following distracting factors are noted:

- Declining interest in learning in class.
- Setting low learning goals
- Their continuous engagement with each other for their conversations that are currently being stimulated or continued from before.
- Following their agendas created by social networks or by their hobbies in their free time.
- Influencing these thoughts and daydreaming even when they seem focused but are not focused but physically directed. Their mind is working somewhere else.

34 observations were made in different classes and lessons were given in some classes dozens of times to observe the students' concentration, their attention, and their interest in learning.

The results of these observations show the veracity of the answers obtained from the questionnaires and clarify the answers received from the interviews.

4.4. The importance of Focusing on Teaching and Learning

From the review of the above literature, from the analysis of questionnaires, interviews, and from the observation data, we conclude that the learning environment has changed radically. Along with the environment, the factors that affect learning have also changed. The concentration, attention, and interest of students in learning are important factors in the effectiveness of student learning. These factors are very important in learning and have strong connections with each other. The need for the presence of these factors to achieve learning has brought the necessity of the teacher's approach to learning for students. The famous saying takes on special significance: if students cannot learn how teachers teach, teachers must teach students how they want to and how students learn.

How does the teacher ensure the concentration, attention, and interest of students?

Analyzing the factors of student distraction and increasing the attention and interest of students, always and without question, first of all, it remains that the teacher must possess in-depth scientific knowledge of the subject, must structure the content of the lesson well and explain and clarify the

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knowledge of the subject in an artistic and simple way. After this come the problems that students show in the concentration, attention, and interest of students in what is being learned. Taking into account all the factors analyzed above, the teacher must change the approach from teacher-centered learning to student-centered learning, where everything is done in such a way that the student can learn without violence, pressure, or insistence. Therefore, the teacher must create a learning environment in accordance with nature, taking into account features such as concentration, attention, interest, etc. Let's teach the senses as students want to learn so that our work has results and effectiveness.

In this approach of the teacher to teach students, the instruments that will be used are important such as full inclusion in learning, interactive learning, the use of didactic tools, the use of problem situations, the use of situations from everyday life, their discussion with each other, guided reading and clarification of incomprehensible parts by the teacher, etc.

Barriers and obstacles in the application of new challenging approaches to student learning such as:

- Teaching tradition
- Imitation of their teachers' behaviors by new teachers.
- Application of family stereotypes as a model in the education of students
- Application of social stereotypes in the education of children
- Lack of complete, broad, and deep training in modern knowledge of effective and collaborative learning.
- Lack of available tools for new challenging approaches.
- Classrooms with benches, tables, and chairs, with traditional placement do not create facilities for building interactive learning in the classroom.
- The lack of internet, computers, and smart boards to display teaching material or learning situations, or virtual experiments in the classroom, creates difficulties in student-centered learning according to new approaches and new contexts of the learning environment.

According to the graph below (graph no. 4) simply and accurately shows that the teaching by the teacher must be built on how to pass the teaching content through student-centered strategies and maintain high results in students.

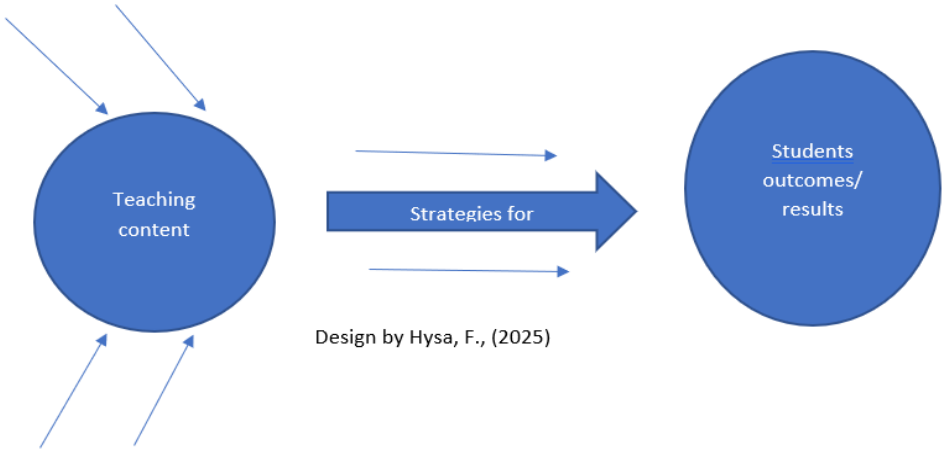

Figure 4.
The way of modeling the strategies based on teaching content and students outcomes/results.

Regardless of the change in the teacher's role in teaching, it remains essential for the teacher to have a deep and clear knowledge of the teaching material, of the material that the student must learn. This is a condition for continuing with the approach, strategies, methods, and instruments. Then we continue

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with the knowledge of the psychological characteristics and interests of the student and the construction of learning strategies in accordance with it.

5. Conclusions

Traditional teacher-centered learning had high effectiveness and high student results at a time when the only source of knowledge was almost exclusively the teacher. Students had little or no knowledge beyond what was in the book and the only one who explained and clarified was the teacher. The teacher taught the students. The concentration, attention, and interest of students and parents was high and respect for the teacher was high.

With the development of communication technology and social networks, the possibility of obtaining information and knowledge has multiplied and the teacher is no longer the only source of obtaining knowledge. Students have a lot of information, although most of it is inaccurate and unscientific. Thus, the role of the teacher as the only source of knowledge has decreased significantly. Now the teacher manages the students' learning. The concentration, attention, and interest of students to learn and listen to the teacher has rapidly declined.

The rapid development of technology and communication has made it possible for students to be in contact with various information. Most of them have created addictions, inability to concentrate, fatigue, lack of interest in learning at school, etc.

In this new context of society with developed technology and communication, the mission of the school is put at risk. Everything negative that the development of technology and communication as well as social networks has created must be repaired, and challenged by the school, by the teacher.

This has imposed and imposed the student-centered approach and the implementation of the principle that if the student does not learn as the teacher teaches, the teacher learns as the student learns.

Therefore, a new approach is required, so that the student learns the content, even when he is not interested and when the teacher does not want to listen or explain it.

This is achieved by a student-centered approach by multiplying all aspects that the student includes in learning, creating real situations for the student to learn, to enable him to learn how to face his life and his profession tomorrow, to create comfortable learning supported by contemporary technological and communication materials, to provide school environments that facilitate interactive learning, learning between each other and the teacher to be a coordinator, facilitator of the process, etc.

To create well-prepared computer programs for all subjects and learning situations to be seen, understood, perceived, and illustrated easily and clearly to achieve as comfortable, easy, and effective learning as possible.

The above study brings us to all these conclusions, which the sooner they are realized, the sooner the decline in student achievement will be stopped and the achievement of effective learning and high student results will be achieved.

Teachers must also be trained and qualified to adapt to the new conditions in which student-centered learning must be developed, but also to be able to use technology and new interactive ways of student learning.

This study needs to be developed and deepened so that the conclusions have a guiding power over the longest possible time and are in line with technological developments.

If students don't learn the way teachers teach, teachers should teach students the way students learn.

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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