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## **POSSIBILITIES OF THE INFLUENCE OF A “SYNERGISTIC” APPROACH TO VARIOUS TEACHING METHODS IN THE PROCESS OF ORGANIZING TEACHING AND LEARNING WITH HIGH SCHOOL STUDENTS”**

### POSIBILIDADES DE LA INFLUENCIA DE UN ENFOQUE “SINÉRGICO” DE VARIOS MÉTODOS DE ENSEÑANZA EN EL PROCESO DE ORGANIZACIÓN DE LA ENSEÑANZA Y EL APRENDIZAJE CON ESTUDIANTES DE SECUNDARIA

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#### ABSTRACT

Efforts are being made to use more modern opportunities for the correct organization of the upbringing of the younger generation, especially high school students. It should be noted that teaching and learning at school is of great importance at the basis of the achievements of science in recent years. Experts' research suggests that innovation are needed to deliver quality education. There is a strong need for a “synergetic” approach to teaching and learning to improve the quality of education. Because, this approach not only brings innovation to education, but also allows you to bring together all areas of science and make better use of them. Synergetics itself is not only new to science, but can also create better conditions for it for innovation. Taking into account the age of the children, their worldview, the subjects they studied and the education they received, we can say that in the formation of these relations, first of all, teachers, and then students bear a serious responsibility. In this sense, conditions are created for teachers to make fuller use of the possibilities of “synergetics” in teaching and learning.

#### Keywords:

Training, teaching, synergetics, methodology, pedagogical practice, interactive lessons

#### RESUMEN

Se están haciendo esfuerzos para utilizar oportunidades más modernas para la correcta organización de la educación de la generación más joven, especialmente los estudiantes de secundaria. Cabe señalar que la enseñanza y el aprendizaje en la escuela es de gran importancia en la base de los logros de la ciencia en los últimos años. La investigación de los expertos sugiere que se necesita innovación para brindar una educación de calidad. Existe una gran necesidad de un enfoque “sinérgico” de la enseñanza y el aprendizaje para mejorar la calidad de la educación. Porque, este enfoque no solo trae innovación a la educación, sino que también permite unir todas las áreas de la ciencia y hacer un mejor uso de ellas. La sinergia en sí misma no solo es nueva para la ciencia, sino que también puede crear mejores condiciones para la innovación. Teniendo en cuenta la edad de los niños, su cosmovisión, las materias que estudiaron y la educación que recibieron, podemos decir que en la formación de estas relaciones, en primer lugar, los maestros y luego los estudiantes tienen una seria responsabilidad. En este sentido, se crean las condiciones para que los docentes aprovechen al máximo las posibilidades de la “sinérgica” en la enseñanza y el aprendizaje.

#### Palabras clave:

Formación, enseñanza, sinérgica, metodología, práctica pedagógica, clases interactivas.

## INTRODUCTION

According to the results of the research, it can be noted that the use of synergetics in the organization of training and education is new, so there is a serious need for more and more comprehensive research. This article focuses on how and under what conditions the “synergetic” approach is applied in the organization of training and education with senior students, where and in what form it is applied, as well as what the results are. The topics covered in the article are explained in as much detail as possible. It should also be noted that since the article is written for scientific purposes, it can be used by those who are interested in science, as well as teachers working in the field of pedagogy, as well as bachelors, masters and doctoral students studying at the university.

The aim of this research is to determine dimensions of possibilities of influence of «synergetic» approach to different teaching methods in the process of organizing teaching and learning with high school students.

## MATERIALS AND METHODS

For teachers, there are both easy and difficult aspects to creating a learning and teaching environment with upper grade students, unlike lower grade students. Taking into account the age of the children, their worldview, the subjects they have studied and the education they have received, it can be said that in the formation of these relations, first of all, teachers and then students have a serious responsibility. In this sense, conditions are created for teachers to make fuller use of the opportunities of «synergetics» in teaching and learning.

The increase in the number of subjects and the increase in the workload as students move to the upper grades is considered to be one of the most serious problems facing teachers in terms of students' mastery of the workload. Therefore, teachers try to better understand the tasks given to children, using more modern technological opportunities and interactive teaching methods, as well as using a «synergetic» approach, which is considered an innovation in science. Of course, different methods are used in teaching (Nagovitsyn, Saltykova, & Maksimova, 2018).

Using the synergetic approach, the main responsibilities of teachers are:

- Defining training strategy,
- Organizing typical and related application of training methods,
- Identify education models,

- Identify formative assessment methods.

It is especially important to consider a number of issues when determining a training strategy. These issues can be listed as follows (“How to Create an Effective Employee Training Strategy”).

The pedagogical process must be as follows:

- Students should be given free learning opportunities
- Teaching and learning should be both independent and collaborative with students
- The learning process should be student-oriented
- Training and education should be developmental
- A supportive learning environment should be created

The first issue to be considered during the teaching process is a comprehensive (teaching, developmental, educative) approach to the organization of training and education. When these three principles are followed, it is possible to observe activities between the teacher and the student that result in real results, which means that the pedagogical process is complete. (Peel, 2020)

During the training and teaching process, all students should be given the opportunity to independently search, acquire knowledge, observe, evaluate results, etc., provided that the same conditions are created. During the pedagogical process, their potential is definitely taken into account. At the same time, there is a serious need to motivate students during the teaching and learning process. Also, in order to study the teaching material, students should be seriously interested in learning and the purpose of learning should be clearly explained. If the issues raised during the teaching and learning process are addressed, it means that students are given free learning opportunities.

One of the issues of special importance in the organization of the training and teaching process for teachers is the issue of stimulating the establishment of joint activities between students. In this case, all the progress in their activities is noted and evaluated in order to build a more efficient and effective pedagogical process, as well as to increase students' interest in the learning process. This, in turn, can be seen as a guide for students to achieve more successful learning outcomes. Therefore, this method is called the method of working with students both independently and with peers during teaching and learning.

One of the main goals in the organization of the teaching and learning process is to meet the interests and needs of each student in general, to stimulate the development of his/her talents, skills and abilities, as well as potential

opportunities. That is why this method can be called a student-oriented learning process. Such a method is considered to be one of the factors that significantly affect the development of students' intellectual abilities. (McCarthy, 2015)

Among the main issues to be addressed by teachers are the monitoring of students' cognitive activity during the lesson process and extracurricular activities, analysis of their achievements, further development of their skills, talents and habits through active and interactive teaching methods. This is called developmental training and teaching methods ("Training, Development and Education: Meaning and Distinction").

Adequate material and technical base and healthy moral and psychological conditions are considered to be the most important conditions in the organization of the modern educational process. At the same time, it creates a favorable and safe environment for improving quality and efficiency. This method is considered a fundamentally new method. It can also be called a supportive learning environment because it stimulates the development of teaching.

In essence, the above can play a key role in the development of training strategies and the application of a synergistic approach to the teaching and learning process in the organization of training.

The second important issue for the application of a synergistic approach in the organization of the teaching and learning process with senior students is to organize the specific and coherent application of teaching methods. The organizers of this method are as follows (Mehta, 2021):

- Methods of formation of perceptions,
- Methods of mastering theoretical knowledge (concepts and laws),
- Methods of forming skills and habits,
- Control methods in training

The methods of forming perceptions are also divided into several parts, and they are also considered methods that should be considered separately. In the application of these methods, the main goal is to increase the knowledge and skills of students. They can be listed in the following form (Cherry, 2020):

1. Observation method
2. Illustration method
3. Demonstration method
4. Description method

The method of organizing the process of perception in a planned and systematic way for a specific purpose is called an observation method. Through this method, in addition to instilling initial ideas about objects and events, they also have the opportunity to observe how and in what form the development of observation skills and independence. Proper organization of the observation method is one of the important factors for its effectiveness. The observation consists of several stages: clarification of the purpose, definition of the observation plan and means, recording of the observation and drawing conclusions. Classroom Observation (2019).

The method of perceiving the learning material with the help of visual aids is called a method of illustration. Of course, visual aids here mean various means: natural objects, pictures and posters, schematic materials (diagrams, tables, diagrams), symbolic visual aids (maps, globes). During the application of the illustrative method, depending on the purpose and content, different types of visual aids are selected and applied in practice. (Meyer, 2021)

The method used to demonstrate an object or event in dynamics, that is, in a state of change and development, is called a demonstration method. The main tools included are: experiments, movies and slides, television programs, VCRs and more. Visual and technical tools are collected and systematized to apply the above in practice. At the same time, school and inter-school (district, city) film libraries are created, where movies, slides, slides and videos on almost all subjects and topics are collected. It is used when necessary.

The method used to bring the necessary facts and events to the students' imagination through words and to explain them better is called a descriptive method. This can be done in two ways. It can be done either by the teacher describing the event or by describing it in a book (textbook). Sometimes these two methods of description are used at the same time, and this allows students to create more complete images in their brains. Descriptive teaching method (2021)

As for the methods of acquiring theoretical knowledge (concepts and laws), there are some nuances between them, although the previous method is used by teachers as a more accurate method to serve the same purpose, ie to increase students' knowledge and skills. In principle, these methods aim to create correct scientific concepts and understand the laws in the minds of students. Basically, this group of methods includes the following (Yong, 2012):

1. Teacher's interpretation method,

2. Interview method,
3. Discussion method,
4. Logical methods,
5. Methods of working on the book,
6. Problem-solving methods, etc.

The method of verbally conveying to students the fact, event, concept and regularity that is important for the teacher is called the teacher's method of interpretation. Unlike other methods, the fact that the teacher allows the student to give more information in a short period of time gives grounds to say how useful this method is. Of course, the teacher can comment in different ways. These are more transportation, explanation, school lectures and so on. carried out in the form. The process of narration means to narrate any intended event in a vivid and figurative way. The process of explanation, in turn, means explaining any concept or rule with evidence and proof. The school lecture, on the other hand, is a systematic delivery of larger, larger-scale program material (mostly used in the upper grades). If we pay attention to the teacher's comment, it can be divided into two parts according to its nature. These sections are informative and problem-solving. If the informant is to provide ready-made information for the main purpose of the explanation, the main purpose of the problem statement is to make the students think. The main point here is that the teacher raises certain problems on the topic or solves them either by himself or with the participation of students. Undoubtedly, such comments not only make students more active, but also arouse their interest in learning Cherry-Paul, Johansen (2014).

The main elements of the interview method are, in principle, almost a question and answer. This method is more widely used in all subjects, as well as at all levels of education. There are two main types of interview analysis: heuristic and iterative.

The word «eureka» is Greek for «found.» Heuristic interviewing is a way for students to find new rules and regularities through questions. The heuristic method is sometimes called the Socrates method because it was widely used even by the ancient Greek philosopher Socrates. When using the heuristic method, relevant facts are found with the help of questions and conclusions are drawn from them: (Schwanenflugel, 2009)

The knowledge gained during the repetitive interview is recalled and intended to be reinforced through repetition. Another important issue during the interview is the correct questioning. Of course, the question must meet some requirements:

- The question should be specific and clear; general question is not clear,
- The question should be thought-provoking; questions that require a «yes» or «no» answer do not make students think;
- The question should be concise; it is incorrect to ask two or more questions: such a question is not well remembered and has a negative effect on the answer;
- Don't ask wrong and confusing questions. Such questions can mislead students and make them doubt the teacher's knowledge.

Another important point to note here is that it is especially important for teachers to follow certain rules when organizing the interview method. Among the rules to be followed here is to ask the question not to a single student, but to the general class and ask any student. If the answer is incorrect or inaccurate, the incorrect answer should be corrected to the student and, if necessary, to other students, and if the answer is still unsatisfactory, the teacher should explain. (Krahenbuhl, Blades, 2006)

Another form of the interview method is the discussion method. The full understanding of the method of discussion is a sign that it is a scientific debate. When using this method, students feel significantly more active, there is a growing interest in learning, it allows them to consciously master the necessary knowledge. Of course, during the discussion, as a rule, different views and positions are put forward on a particular problem, and everyone tries to justify his position in different ways, and at the same time refute another position. This is generally considered to be a factor that works in favor of students.

The group, which includes analytical-synthetic and inductive-deductive methods, is called logical methods of training. As a rule, the main function of analytical methods is to separate any object into thought components or features. These methods include comparison (identifying similarities and differences), classification (distinguishing objects and facts according to their main features), analogy (transferring knowledge about one object to another), and others. Synthetic methods are methods that aim to combine different parts and features of the intended object in a theoretical form. The inductive and deductive methods are, in principle, mutually exclusive. That is, if the inductive method is intended to draw mental conclusions by going from the specific to the general, the deductive method does the opposite. That is, it implies a method of drawing mental conclusions by moving from the general to the specific. Hassler (1927).

The method of using the book for different purposes is called the method of working on the book. The main

function of the book is to acquire new knowledge, to strengthen it in the memory by repeating the experience, to deepen it, to apply what has been learned in various fields, as well as to better develop independent work skills. Of course, there are many ways to work with books. Examples include explanatory reading, finding the main idea, plan, thesis and abstract, reading methods (in whole or in parts). *Methods for Teaching Reading That Help Struggling Readers* (2018)

Problem-solving methods are methods designed to test students' mental activity during training and their independence in problem solving. In order to better examine students, they are faced with certain problems. Then they are given the freedom to solve the problems and they are tested. The teacher distinguishes between different types of problem-solving methods, taking into account the mental activity and level of knowledge of students in the classroom. This includes problem interpretation (the teacher solves the problem himself), partial search (the problem is solved in part with the participation of students), research (the problem is solved independently by the students). The teacher's responsibility during the training is to gradually and partially teach students different types of problem-based learning (fact observation, problem statement, hypothesis testing, drawing conclusions) and to accustom them to independent research and practice. (*Teaching problem-solving skills*, 2018).

One of the methods of working more effectively with high school students with the help of «synergetics» during teaching and learning is the model of education. According to the results of research conducted by researchers from different countries of the world who have achieved great success in the field of pedagogy, it is possible to group the models of education as follows. (Shameem, 2011)

- sample groups (selective) model;
- combined group model;
- “mixed abilities” model;
- integrative learning model;
- Innovative training model.

The application of the selective group model is carried out from the first period of training, ie from one week to one year, according to the knowledge, skills and abilities of students. It can be said that in recent years, as a rule, those who are admitted to the school, especially those in grades V-X, are selected by testing and grouping students of different levels into classes. At the same time, grouping of students is determined by their subjects and specialties. In different countries of the world, there are countries that work on a model in which selective

groups are more applicable. These include the «Unified School» in Germany, the «Comprehensive» or «Universal School» in England, as well as the annual gymnasium in the Netherlands, HAVO, which is used as the upper level of annual secondary education, and MAVO, which is accepted as the preparatory level for annual vocational education. is especially noteworthy (Roberts, 2016).

In schools with the combined group model, they are grouped in two forms. There are groups of students with «different abilities» and «same abilities». Groups of social sciences, mother tongue, some exact sciences, and physical culture include students with different abilities. In addition to the above subjects, groups that include mathematics, English, and French include a group of students with the same or similar abilities. One of the points to pay attention to here is the issue of taking into account the social status of children along with their intellectual knowledge when organizing groups. In other words, when organizing groups with different abilities or «mixed», in most cases, along with the intellectual abilities of students, as well as social status and gender are taken into account. Here it is necessary to conduct tests on some subjects in order to conduct grouping. Of course, the division of students into groups does not remain constant. On the contrary, they are given a chance to move to a higher level group three times a year for their achievements. (Shameem, 2011)

During the application of the «different abilities» model, the process of learning all subjects continues until the end in the «mixed abilities» groups. Even the teaching of some subjects, especially mathematics, foreign languages, and natural sciences, continues at different times. In the classroom, all students study based on basic curricula and programs. Diagnostic tests are used to check what students have learned as a result of basic training courses. If students are able to master the basic programs, then they are offered to learn additional materials. If someone does not show a result in the test, they are instructed to re-learn the basic knowledge.

In the application of the integrated learning model, special attention is paid to individualization, ie the development and independence of the student. The main features of the integrative learning model can be grouped as follows.

- training courses,
- teaching materials

Of course, the content of the courses here differs significantly from the content of traditional training courses. In other words, there are new opportunities for teachers and they have the opportunity to adapt the content of the course to the needs of each student.

The main issues that teachers pay attention to when teaching according to this model are to pay approximately equal attention to the development of cognitive, as well as normative and expressive practices Sadikhov, Aliev (2022). Great importance is attached here to the comprehensive development of students as individuals. Taking into account the above, it is possible to group the leading features of the integrative learning model as follows: (“What is Integrative Learning?”)

- Grouping of students in terms of personal development, understanding of their position in society and independence,
- The use of different alternative teaching methods and situations is a great help for the individual development of students,
- Respect for each student individually demonstrates respect for the individual and commitment to social values during his or her management,
- Also, the chosen form of education is organized according to the wishes and needs of the individual.

During the application of the innovative training model, experts from around the world, especially a group of scientists and researchers from the United States, Germany and the United Kingdom, conducted observations and research in secondary schools in different countries. The fact of their research is that almost all schools have the following shortcomings and deficiencies. I mean,

- Teachers work in isolated classrooms;
- There is almost a very weak relationship between teachers;
- The situation among teachers in the field of content of teaching courses and organization of teaching methods is unsatisfactory;
- The management process is almost completely separated from the subject teaching process;
- Relationships between different subjects are either completely weak or non-existent;
- Insufficient attention is paid to professional development of teachers within the school. Here it is possible to witness poor organization of professional development and internal training;

Taking into account the above-mentioned critical issues, researchers from the above-mentioned countries have developed a fundamentally new model. This model has been presented as a “small group team” model. Of course, in terms of both its form and content, the model can be used as an example of an innovative learning model. According to the model, courses in all subjects are taught by a team of teachers, and students study in permanent groups, ie

groups of 4-6 people. Even one teacher teaches several subjects. This process, in principle, weakens the barriers between different subjects. and the content of education creates real opportunities for students and teachers. Thus, a “teacher team” of 5-8 people, working as a group, can fully cover the education of children of the same age, ranging in number from 60 to 100.

Another method to consider when organizing training is the application of formative assessment. Of course, there are specific forms of the method. These can be noted as follows:

- Non-systematic notes
- Important notes
- Discussion
- Login
- Student’s notebook
- Oral question and answer
- Writing.
- Reading.
- Project (Research).
- Survey or interview
- Self-assessment

Conducting a formative assessment based on the above principles can be more objective. As a result of daily inspections of these requirements by teachers, it is possible to organize training and teaching with senior students in accordance with the principles of a «synergetic» approach. Innovative Learning Strategies For Modern Pedagogy

## CONCLUSION

In order to better study the topic, we tried to divide it into several parts and conduct research from different angles to find out which methods can be more successful in solving problems in this field, in the organization of training and education. We also tried to learn what is achieved by applying a “synergetic” approach to teaching and learning with senior students, whether traditional or modern methods are more useful when organizing their teaching methods, and how to organize groups to better engage students in teaching and learning. From all of the above, it can be said that the application of modern approaches and methods in the process of modern teaching and learning can not only give more successful results, but also have the opportunity to further enhance the scientific potential of students, especially high school students. It is necessary to refer to the above research.

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