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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

POSSIBILITIES AND WAYS OF INCREASING THE PUPILS' COGNITIVE ACTIVITY IN TEACHING THE SUBJECT OF TECHNOLOGY IN PRIMARY CLASSES

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GENERAL CHARACTERİSTİCS OF THE RESEARCH

Relevance and development of the topic. Modernization of the world education system is related to socio-economic conditions. In the current situation, very important work is being done on the technological development of education. The tasks ahead stem from the requirements of the Constitution of our country, which is moving forward with confidence. In order to function effectively in the information society, there is a growing need for learners who are better prepared for cognitive activity in teaching and have the ability to think creatively and independently. Thus, the development of students' cognitive activity in primary education comes to the fore with its relevance.

"The purpose of general education is expressed in the thirteenth paragraph of Article 19 of the Law of the Republic of Azerbaijan "On Education". Note: "*The purpose of general secondary education is to form a culture of speech, writing and communication, a healthy lifestyle, to educate them in the spirit of loyalty to the state and statehood, the values of the Azerbaijani people and universal values, respect for human rights and freedoms, development of cognitive activity and logical thinking. to apply the knowledge gained in the program, to use modern information and communication technologies, to assess the events in the society, to determine the future way of life and activities, to provide the ability to study and make decisions independently, to choose a profession and work*" [1].

As can be seen, the development of cognitive activity and logical thinking of students, including young schoolchildren, is also a priority for general education. In addition, the choice of profession and preparation for employment was also in focus. Preparing students for career choice and employment is one of the main issues and tasks facing the subject of technology.

[1] Education Law. /-Baku: Legal literature, -2009. - p. 80.

An important issue, such as the formation of cognitive activity in students, should begin at preschool age. Then work in this area should continue in primary school.

Students of technology develop simple design, layout, modeling, design, wildlife service skills, comparison and sorting, primary processing, self-service and interaction skills, measurement, proportion, symmetry and other geometric concepts aimed at the development of cognition, resulting in simple constructions and creative work. inculcation of performance skills is provided.

Teaching the subject of technology creates conditions for pupils to use processing technologies in life independently, to form their creative victories, to acquire the necessary knowledge and skills in technical fields. At the same time, acquaintance with the materials of the subject helps to form the character of pupils, their spiritual and intellectual development, adapt to the socio-economic conditions by acquiring technological skills appropriate to the period.

In modern times, it is important to instill technological culture in pupils. Directing resources and information to serve the interests of the people is an important requirement. The teaching of technology as a subject in secondary schools is primarily due to the need in question. The rapid development of science and technology, the constant renewal of technology also increases the demand for professions and specialties. In modern times, it is impossible to be satisfied with a narrow specialty.

Laying the foundation for the formation of a broad-based specialist of the future in secondary schools is an urgent problem. In the learning process, pupils identify opportunities for technical activity, come up with ideas for solving problems, perform simple technological work, and evaluate results.

Through the subject of technology, pupils are prepared for productive work in various fields of service, their polytechnic outlook is expanded and conscious career choices are provided.

By studying the subject, pupils get acquainted in detail with computer technology and modern technologies, acquire knowledge

and skills related to processing technologies in production, gain the ability to solve problems.

In accordance with the framework document of the National Curriculum of General Education in the Republic of Azerbaijan, a number of tasks for the subject "Technology" in secondary schools have been determined. In the coming years, it is planned to increase technological and applied skills through the development of activities aimed at fulfilling the functional tasks set at the initial level. The development of knowledge among pupils arouses a desire and interest in learning. During problem solving in technology teaching, pupils develop judgment skills such as induction and deduction, generalization and concretization, analysis and composition, classification and systematization, abstraction and analogy.

A strong and dynamically developing Azerbaijan needs highly intelligent personnel. In our opinion, the most important thing for this is the formation of technological skills in pupils, starting from primary school, to increase cognitive activity and develop children's talents. According to psychologists and educators, educators around the world, education, which is very important for society, is the basis of its development. Therefore, the formation of people as individuals puts great responsibilities on education as an important mission.

The formation of cognitive activity, thinking, as well as imagination is important for the development of the cultural level and intellectual potential of society.

Research shows that Yu.A. Comenius, J. J. Rousseau, V. Belinsky, N. Chernyshevsky, N. Thinkers like Dobrolyubov made important comments.

In our country, A.S. Bayramov, A.A. Alizade, M.A. Hamzayev, P.B. Aliyev, R.I. Aliyev and. b. In their works, scientists have explained the importance, essence and content of cognitive activity, and have substantiated their views in a more psychological way.

M.A. Alishov, Z.F. Kazımov, L.İ. Mansurova, L.A. Mammadli, V. Mahmudov, R.A. Ganiyeva, A.A. Rustamova, G.

Muradova, Sh.O. Agayev and b. covered pedagogical issues of the problem.

Sometimes, in a number of secondary schools in the country, primary school teachers approach technology as a secondary subject. Azerbaijani language or mathematics classes are held during the hours allocated for this subject. This is a very bad thing. Therefore, pupils do not develop an interest in technology. As a result, pupils do not have creative abilities and skills in technology. One of the important tasks before us is to achieve the students' cognitive activity, taking advantage of the opportunities of technology. It is no coincidence that it is very important to increase the students' cognitive activity during the interactive and integrative teaching of technology in primary school.

Taking into account the urgency of the research, the topic of the dissertation was defined as "Possibilities and ways to increasing the pupils' cognitive activity in teaching the subject of technology at primary school."

The object of research is the process of developing pupils' cognitive activity in the teaching of technology at primary school.

The subject of the research is the opportunities and ways to increase the cognitive activity of junior aged pupils at the technology lessons.

The purpose of the research is to theoretically substantiate the pedagogical and psychological bases, opportunities and ways of developing pupils' cognitive activity in the teaching of technology at primary school and to test its effectiveness experimentally.

The following tasks were set for the research:

1. To consider the cognitive activity of the individual as a pedagogical-psychological problem. In other words:

1.1. Pedagogical bases of formation of the junior aged pupils cognitive activity.

1.2. To comment on the psychological basis of the formation of the junior aged pupils'. cognitive activity.

2. To study and analyze the existing literature in terms of the studied problem.

3. To study and analyze the current situation at primary school in terms of the studied problem.

4. To clarify the practical issues of the work on the formation of the junior aged pupils' cognitive activity/

5. Optimal ways to increase pupils' cognitive activity during the teaching of technology at primary school

6. To get an idea of the organization, conduct and results of a pedagogical experiment.

Research methods. The research used such research methods as theoretical analysis, observation, questioning, interviews, testing, analysis-composition, induction-deduction, experiment.

The main provisions of the defense:

1. Mechanism of development of the junior aged pupils' cognitive activity in I-IV grades.

2. The level of development of a junior aged pupil as a subject depends on his position in the learning process, how his cognitive activity is managed from a pedagogical point of view, and can be defined as reproductive (low level of activity), emotional-situational, active-executive, creative.

3. Deep knowledge of the theoretical and practical issues of the problem improves the quality of teaching technology at primary school, as well as provides of the junior aged pupils' cognitive activity

4. Increasing the pupils' cognitive activity in the process of teaching technology in the primary grades of secondary schools depends to a large extent on the level of professionalism, pedagogical skills, theoretical and methodological training of the teacher.

5. A good knowledge of the pedagogical and psychological basis of the problem greatly contributes to the development of the junior aged pupils' cognitive in technology classes.

Scientific novelty of the research. Opportunities and effective ways to increase junior aged pupils' cognitive activity, were identified during the teaching of technology.

Theoretical significance of the research. The results of the research enrich the scientific understanding of the essence of the

concept of cognitive activity; It reveals the content of pupils' cognitive activity at the technology lessons of I-IV grades and the ways of its formation, envisages new approaches to the organization of the learning process. The ideas and scientific provisions put forward in the work will enrich the theory of pedagogy with new ideas, will allow the work on the effective formation of the junior aged pupils' cognitive activity in technology lessons to be built on a scientific basis.

Practical significance of the research. The results of the study are of practical importance. The results of the dissertation can be used to help pupils acquire technological skills at different levels of general education. At the same time, the results will help educators, psychologists and educators to build their activities effectively.

The methodological basis of the research is a set of theoretical provisions, principles, methods and techniques applied in order to study, understand and change pedagogical facts, events and processes.

Approbation and application of research. Articles on the research were published in scientific publications and authoritative journals published abroad by the Supreme Attestation Commission under the President of the Republic of Azerbaijan, two monographs were published and reports on the problem were made at conferences.

The structure and scope of the dissertation. The dissertation consists of an introduction, two chapters consisting of 6 paragraphs, a conclusion and a list of references.

THE MAİN CONTENT OF THE RESEARCH

The introduction substantiates the urgency of the problem, the level of development, the object and subject of research, goals and objectives, scientific innovation, theoretical and practical significance, research methods used, the provisions to be defended.

The first chapter of the dissertation is entitled **"Cognitive activity of the individual as a pedagogical and psychological problem."** This chapter consists of 4 paragraphs. The first paragraph of the chapter, ***"Pedagogical bases of formation of cognitive activity of junior aged pupils"*,** first of all deals with some basic concepts which are closely connected with research. The work deals with the formation of cognitive activity in the teaching of technology. Therefore, the essence of the concepts of "cognition" and "activity" and some of the concepts that are extremely related to them are clarified.

There are several types of activity. Let's note them: social activity, socio-political activity, labor activity, cognitive activity, etc.

Cognitive values in pupils, including the junior aged pupils, are formed only under the influence of his cognitive activity. Achieving the development of cognitive activity requires interesting, motivating and developmental practical activities. Indicators of cognitive activity are: scope of interest (positive attitude to the activity to be performed by the student), initiative, independence, self-regulation, scale of results (characterization of activity), cognitive interest, management and purposefulness (manifestation of this quality in any activity) - to complete the work), to understand the benefits of the work to be done, will (persistence and steadfastness in achieving the goal), creativity, etc. It is impossible to imagine the development of cognitive activity without motivation and cognitive interest. Motivation motivates a junior aged pupil to act, and cognitive interest motivates him to start.

The role of the teacher in achieving cognitive activity of the junior aged pupils in the teaching of technology is great.

The content line of the subject of technology in primary school (processing technologies, technical elements, household culture, graphics) varies according to the learning outcomes. The focus here should be on educating pupils based on life skills. Cognitive practical training materials - pictures, diagrams, descriptions of sequence of actions, hand movements, colors have a special place, the pupil should be focused on cognitive activity by thinking, understanding

and conducting technological operations with interest in many features.

Experience shows that as a child begins to function at an early age, he or she becomes more and more a member of society and develops as an individual. This change is also reflected in the nature and comparison of the knowledge acquired by the child as it manifests itself in material activities. As the scope of children's cognitive activity expands, the volume of knowledge increases. The acquisition of new knowledge during cognitive activity allows them to be more actively connected to the outside world to meet their needs.

In order for the junior aged pupil to become active, first of all, it is important for him to act as a person as a central object of the learning process. The training should focus on the pupils' interests and needs, his level of knowledge, opportunities and abilities. The teacher should treat the pupil as a person, take into account his individual characteristics and treat him with respect.

The dissertation states that in the process of teaching technology it is expedient to use a number of pedagogical principles (active cognition, developmental learning principle, "preventive learning" principle, the principle of flexibility of the education system, the principle of cooperation, the principle of biological learning) to form cognitive activity in the junior aged pupils.

To summarize the above, it is possible to conclude that it is important for secondary school teachers, including teachers of technology, to know the pedagogical basis of the work on the formation of cognitive activity of the junior aged pupils.

The second paragraph of the chapter is entitled **"Psychological basis for the formation of cognitive activity of the** junior aged pupils**."** It is shown that from a psychological point of view, the development of cognitive activity in young schoolchildren can be achieved under certain conditions. First of all, in the environment where cognitive activity is formed, this research should create a pleasant emotional environment in technology classes. It helps to improve the teacher-student relationship, the relationship

between the learner and the educator. In a favorable relationship, the pupil mobilizes his efforts, tries to read well, to behave well. It will be a nice. In such a situation, perception (cognitive process) becomes a means of acquiring knowledge.

İn technology lessons, such conditions must be created so that the student not only remembers the content, but also sees the method of action. As a result of the teacher's efforts, it is achieved that a junior aged pupil, in addition to the opportunity to acquire knowledge, is able to collect and obtain knowledge and information himself. In this case, the class teacher acts not only as a teacher for the pupil, but also as a motivator of his abilities.

The above can be considered as the first pedagogical condition. The second pedagogical condition is to take advantage of developmental technologies, methods and techniques that will be of interest to young students.

The following skills are important for the development of the junior aged pupils' cognitive activity: the ability to see the problem; ability to make assumptions; ability to classify; ability to ask questions; ability to observe; ability to define different concepts; ability to prove and defend one's views and opinions; ability to generalize and draw conclusions.

In the psychological literature, emotions, perception, attention, memory, thinking, speech, imagination are presented as cognitive processes. Of course, when talking about the junior aged pupils' cognitive activity, the cognitive processes we are talking about can not be left out of focus.

Personality thinking develops especially during school. This rapid development is associated with a new type of activity - the learning process. Training work, purposeful, systematic educational work with junior aged pupils allows for further development of thinking. Forms of thinking, more and more different concepts are formed in classes on various subjects, including technology lessons. Elementary school students learn many scientific concepts. The content of these concepts is enriched, the general and important aspects of objects and events find their clearer expression, and at the

same time the qualities of the mind develop. In technology classes, mental surgery occurs and develops in the junior aged pupils. Pupils have intellectual operations such as analysis, composition, comparison, generalization, abstraction, systematization, simile. As a result, they have a better understanding of technology topics.

The practical basis for increasing in the junior aged pupils' cognitive activity in the teaching of technology is the acquisition of skills and habits, the application of knowledge. Nevertheless, the subject of technology as a basis and its interdisciplinary and interdisciplinary integration opportunities have been widely used in research. Because compared to other subjects, technology plays an important role in the practical work of the junior aged pupils. The activities of the teacher and the learner are intertwined, and interactions are formed.

Summarizing the above, we can say that teachers who teach technology in primary school need to know the psychological basis of the work on the formation of pupils' cognitive activity. In this case, they must be aware of cognitive processes (attention, emotion, memory, perception, speech, imagination).

The third paragraph of Chapter I deals with "Ways of development of cognitive activity of the junior aged pupils during technological training". In the dissertations, for example M.A. Alishov's "Activation of cognitive activity in students with the help of computer technology (on the example of teaching mathematics in X-XI grades)"; Z.F. Kazimov's "Problems of increasing the effectiveness of cognitive activity of students of higher pedagogical schools in the conditions of information technologies (based on the mathematics course of the pedagogical faculty); L.İ. Mansurova's "Formation of cognitive activity of students in the teaching of history in secondary schools"; L.A. Mammadly's "Ways to develop students' cognitive activity"; V. Mahmudov's "Development of students' cognitive activity in the educational process"; in topics; have been analyzed.

Scientists from the former Soviet republics and now the CIS countries have also expressed their views on the problem. Y.K.

Babanski, Y.N. Kulyutkina, Q.Q. Lemberq, N.A. Mençinskaya, R.A. Nizamov, T.İ. Şamova, Q.İ. Shukina et al. studies can be noted. A review of the available literature shows that E.S. Kostyleva O.N. Lyamina - Humanities, L.N. Abramovskaya - of literature, I.V. Kalashnikova - of mathematics, M.A. Akhmetov and O.E. Yemelyanova - of chemistry, N.A. Qorlinskaya, D.M. Yulanova - of music; N.İ. Zubkova - of biology, V.Y. Makarova - Russian, A.P. Sukhareva - Fine Arts, A.Q. Chasheva - Physical Education, N.A. Qorlinskaya, D.M. Yulanova - a native speaker of foreign languages, including English, N.E. Kogan - devoted their research to the formation of cognitive activity of students in the process of teaching geography.

The problem of forming cognitive activity in technology classes A.S. Chibakov "Methodological bases of development of cognitive activity of VIII-IX grades in the lessons of technology in the rural school" (2000) and S.I. Melexina "Development of students' cognitive activity in the process of educational project activity" (2005), A.S. Glozman dedicated his dissertation on "Methodological bases of cognitive activity of students of 5-9 grades on the course of technology". In the Republic of Azerbaijan, however, the problem of the formation of cognitive activity in technology classes in general in different grades, as well as in young schoolchildren, has not been the subject of research. This once again proves the urgency of the problem under study.

The fourth paragraph of Chapter I is entitled ***""Familiarity with the current situation at school from the point of view of the studied problem".*** It is noted that in order for any pedagogical problem to meet the requirements of the modern world, it is necessary to study the current state of the problem. It is a fact that it is possible to make a prediction without getting acquainted with the situation, without gaining an idea of its pros and cons? First, a pedagogical forecast (pedagogical examination) should be made, and then suggestions should be made to improve the situation. The problem under study is to achieve the development of cognitive activity of the junior aged pupils in technology lessons at primary

school. So, it is possible to come to a certain conclusion by observing technology lessons, conducting interviews and conversations with class teachers, pupils, school principals, and getting acquainted with school documents. So what is the current state of the problem we are considering? What are high, medium and low indicators?

Based on the above, the current situation in secondary schools was studied and reflected in the dissertation. The study found that although positive experience has been gained in the formation and development of students' cognitive activity in the process of teaching technology in grades I-IV of secondary schools, not all teachers take into account opportunities and do not use opportunities in terms of cognitive activity of individual subjects. Therefore, the organization, conduct and analysis of the results of the pedagogical experiment were considered expedient.

Chapter II of the dissertation, entitled "“Methodological system for the development of pupils' cognitive activity in the process of teaching technology at primary school” includes 5 paragraphs. The first paragraph of the chapter is entitled "***The role of cognitive activity in the integrative inculcation of technological knowledge at primary school***." We read: By creating integration in the teaching of different subjects taught at the primary level, students gain the necessary knowledge and skills, activity. The knowledge included in the content of the subject of technology, the practical solution of the acquired theoretical problems is manifested in cognition. That is, it goes from living observation to abstract thinking, and then to practice. According to the content of the subject of technology, processing technologies, technical elements, household culture, training materials on graphics are practically realized in cognition.

On the basis of technology, pupils are formed skills of comparison and sorting, primary processing, private service and joint activities, simple design, layout, modeling, design, service to wildlife, measurement, proportion, symmetry and other geometric concepts Therefore, certain skills, abilities and abilities in cognitive

activity in the junior aged pupils should be practical. To do this, their practical activities must come to the fore with certain results.

Each student should compare and sort the material used in the preparation of the product. To do this, it uses the appropriate technological means, ie measuring, cutting, cutting, joining, etc. should benefit. In the next stage of the process, the student must prepare simple products by engaging in cognitive activities, perform other household services, and demonstrate teamwork skills.

Every student who correctly understands the theoretical foundations of knowledge in accordance with the concepts puts them into practice. When you perform simple, uncomplicated tasks that require creativity, there is no problem in building a model and project. It is impossible to achieve its practical, ie cognitive activity without gaining relevant knowledge on the content lines of the subject of technology. There can be no cognition without knowledge.

In accordance with the requirements of the program, pupils in grades I-IV at the end of the school year gain the expected learning outcomes on the subject of technology and expand their knowledge on the relevant recurring concepts. This work on primary school is grouped as follows:

The first-grader recognizes simple processing technologies, prepares for the processing process, prepares and presents simple products in compliance with safety and sanitary-hygienic rules; carries out classification of technological machines and technological means, distinguishes them separately from each other; clarifies the rules of self-care, plant care and cultural behavior in a simple form; demonstrates the ability to use the necessary household appliances; gives a graphical description of simple objects.

The second grader demonstrates familiarity with simple processing technologies and tools; carries out preparatory work for the processing process; makes simple products from given materials (paper, cardboard, fabric, plasticine); demonstrates mastery of technological machines and technological means; proves that he has acquired the basic skills necessary for everyday life, graphically depicts simple things.

The third grader understands the essence of processing technologies; carries out preparatory work for the processing process; manufactures various products from different materials (paper, cardboard, fabric, plasticine); demonstrates knowledge of technological machines and technological means, basic skills necessary for everyday life; gives a graphical description of various objects.

It turns out that the fourth-grader understands the essence of processing technology. It prepares for the processing process; makes various products from this or that material (paper, cardboard, fabric, plasticine, wood, food); knowledge of technological machines and technological means; shows that he / she has acquired basic skills that are necessary in everyday life; depicts various items graphically. In primary school, the study of pupils' technological concepts in accordance with the content lines is carried out according to the standards, ensures their cognitive activity and prepares them for working life in a market economy.

Thus, the expansion of pupils' cognitive activity in technology lessons ensures their comprehensive development. Therefore, classroom teachers should focus on the role of cognitive activity in the integrative inculcation of technological knowledge at primary school, and take advantage of the opportunities of topics in technology lessons.

Paragraph II of the chapter is devoted to the issues of ***"Content standards and cognition of the practical solution of teaching the subject of technology".*** This paragraph clarifies the following issues. Technology content standards of the subject algorithmically embody its essence. According to the requirements of the curriculum, teaching the subject develops students' cognitive activity. In the primary grades, technology does not change the content lines of the subject and the corresponding basic standards. Variable substandards. Preparation for each subject is important in the teaching of the subject. In this pedagogical process, active learning should be carried out in accordance with the content content

standard. The latter requirement, which serves as a principle in resolving inconsistencies in research, must be met.

The practical solution of teaching technology is based on the integration of cognitive activity in training. In this regard, unlike traditional teaching, the application of the curriculum should be considered as the main didactic requirement in the creation of problematic conditions in the pedagogical process. Creating a problem environment in training is an important mechanism, conditioned by the level of special training, theoretical knowledge and practical skills of the teacher. Our research, observations and surveys show that we do not seriously consider creating a problem environment using traditional teaching methods. There are several subjective and objective reasons for this. Curriculum reform, which is being implemented through the introduction of active learning, makes it necessary for teachers to have extensive training in the general foundations of their professional activities, specialties, and innovations. One of the advantages of an active learning approach with an interactive level in the pedagogical process is the need to create a problem environment. Problem conditions, first of all, create conditions for students to be active.

The teacher wants all the pupils he teaches to be active in teaching. What do you need to do for this? It is important to create problematic conditions. To do this, cognitive activity must be ensured, knowing the nature of the problem.

The facts of psychological research allow us to substantiate the fact that the satisfaction of cognitive needs is related to the normal development of the student, as well as learning activities. Based on the content standards of the practical solution of teaching the subject of technology optimizes learning. Because the cognitive need of the student in the practical process according to the content standard becomes the main factor that ensures his activity.

Cognitive interests in young students have different stages of development. Formed cognitive interest increases the effectiveness of pupils' subsequent learning activities in learning. Scientifically based training improves pupils cognitive interest.

In technology lessons, it is advisable to give pupils a variety of tasks in order to gain practical skills and habits. Some requirements must be met when assigning assignments. Let us consider them: 1) assignments should serve the conscious activity of pupils; 2) assignments should be clearly understood by pupils; 3) the content of the tasks should be composed from simple to complex; 4) pupils should be able to control themselves during the performance of tasks. To achieve this skill, the pupil acquires basic knowledge to differentiate the sequence of work to be done at the "learning" level, to clarify their characteristics in a simple way. In grades I-IV, the teachers involved in the experiment used two main types of active (interactive) lessons in technology lessons: inductive and deductive research. Inductive research moves from specific knowledge to general knowledge, while deductive research does the opposite. Inductive research can be more useful when conducting a new topic. Deductive research is used to strengthen and deepen the topic.

After defining the objectives of the technology lesson and the type of lesson in the experimental primary classes, the teacher was already planning the lesson in stages according to the structure of active learning. During the research, it was achieved that, for example, the content of the initial labor training of a pupil in the first grade from technology was formed in advance, purposeful, organized, planned organization was built in accordance with the tabs of the curriculum. In the process of technological activity, thinking of pupils took a leading place. Achieving the result was considered as a pedagogical factor that helps to cultivate students' interest in work, to form them as individuals. The result is that all the effort required to achieve a standard-based goal is always made. As a result of cognitive activity during the experiment, the child's personality stubbornness, resourcefulness, ingenuity, ability to act consistently, etc. the development of individual qualities was achieved.

Cognitive orientation was provided in the requirements of content standards in the technology curriculum in the primary grades.

Concluding the paragraph, it should be noted that the practical solution of the teaching of technology subject is conditioned by content standards and cognition. In this area, of course, the teacher is required theoretical and methodological training, competence, pedagogical skills.

The third paragraph of Chapter II is entitled ***"Opportunities to increase pupils' cognitive activity in the teaching of technology."*** This paragraph states that the structure of any pedagogical system consists of a set of interrelated elements. Let's bring them to the center of attention: students; general and special purposes of training and education; content of training and education; training and education process; teachers; technical training aids; forms of organization of training and educational work; training, management of educational process; technology of education and upbringing process; results of training and education process.

Each of the components of this system can be broken down into the smallest elements. In other words, the pedagogical system is a stable organizational and technological complex that ensures the achievement of the set goal. The pedagogical system cannot exist without technology. Where there is technology, there is quality. Quality determines the capabilities of the pedagogical system, and it depends in some way on management. The productivity of the training and education process is always related to the improvement of the pedagogical system.

As society develops, new requirements are set in the pedagogical field, as in any other field. This makes it necessary to improve the pedagogical process, to apply new content, forms and methods. In grades I-IV involved in the experiment, the improvement of the pedagogical system was carried out in two ways: intensively; extensively.

The extensive approach involved the involvement of additional forces, time and resources in the pedagogical process. It was characterized by extending the training period and expanding the programs in order to give the learners more solid knowledge. That goal could have been achieved without it. The scale of innovation in

the pedagogical process can be different. In the experimental classes, pupils' cognitive activity was developed by improving a certain method, form, applying new work technologies, or updating the education system.

At present, reforms are being carried out in the field of education in our republic, great changes are taking place in the material base of education, in the content, methodology, teacher-student relations, and management of educational work. The main directions of innovations in the pedagogical system are: democratization of school; humanization of the pedagogical process; application of collaborative pedagogy; individualization of the educational process; improving the content of education and upbringing; optimization of the educational process; application of new pedagogical technologies; improving the school management system; reconstruction of the in-service training system; building education in accordance with world standards.

This should be taken into account in the teaching of technology. Democratization, humanization, teacher-student cooperation, classroom and pupil management in technology classes were in the focus of attention in the secondary schools involved in the experiment, including in the first stage of general education - primary school.

Our conclusion on the issues discussed in this paragraph is that the subject of technology has great potential in terms of increasing the cognitive activity of pupils. The teacher must take advantage of these opportunities, achieve the cognitive activity of the junior aged pupils, and manage this process skillfully.

The fourth paragraph of Chapter II, entitled ***" Ways of developing the cognitive activity of the junior aged young schoolchildren in the teaching of technology "*** covers the following issues: research has shown that the optimal ways to increase the cognitive activity of the junior aged pupils in the teaching of technology is based on relevant principles. The main requirement here is to set a problem that ensures the validity of cognition to motivate pupils to the practical solution of the theory in teaching.

Every teacher, including a teacher of technology in the primary grades, has to look for several options when solving a well-defined problem. However, the shortest and most efficient of these options is the most optimal. Optimizing the teaching of technology should be understood in a broad sense to determine the most appropriate option for the performance of any task in the appropriate environment. Develops independence, thinking and creative approach by implementing optimization activity in technology lessons. The essence of the teacher's activity is always to create optimal conditions for the creative search for better options for training and education of students, the successful implementation of topical educational tasks.

An important aspect of optimizing the learning process in the teaching of technology is the efficient use of time in the classroom, as well as the achievement of intensification of the learning process.

Optimizing the teaching of technology is the achievement of high results by the junior aged pupils in a short period of time with little effort. The optimality of pupils' cognitive activity must implement special psychological mechanisms that ensure its creation and maintenance. Mechanism - the movement of one element is a complex of parts that creates the forced movement of others. In this case, the speeds and accelerations of all points in the system can be determined. Mechanisms are used to transmit motion.

Pupils are involved as the first requirement in creating a problematic situation in the teaching of technology. According to the principle of person-centered learning, the teaching process is optimal only because it is effective based on the research position of the young student, his cognitive interests. Research is needed to establish this position. Each research begins with a problem related to the topic being taught.

The method of active (interactive) learning is based on the creation of a mentally tense (problematic) situation due to the contradictory and incomplete information provided. This situation motivates students to look for ways to achieve their goals. This

activates their thinking. As a result, cognitive activity is formed in pupils. Their research activity is growing.

Optimization of the process of education, training and upbringing is an innovation of the pedagogical system as a whole. Optimization is the process of choosing the best of the possible options. As a pedagogical system, there are thousands of possible options for building and organizing the process of training, education and upbringing in a complex, dynamic, multifaceted system, and achieving goals there. Only one of them may be the best in a given situation. Finding it is the main task of optimization. This task is solved by comparing possible options and evaluating alternatives.

Optimization of the subject of technology is possible only if the teacher has mastered the basic pedagogical knowledge and skills, the leading laws and principles defined by pedagogy, the technology of organization of collective, group and individual activities. sun, understand the responsibilities of education, upbringing and development. Optimization is also based on the experience of advanced teachers.

Research shows that a teacher must have a number of qualities in order to successfully optimize students' cognitive activity when teaching technology. Let's focus on them: creative thinking style; agility of thinking; concreteness of thinking; systematic thinking; the ability to wait for limits when making decisions and acting; the ability to communicate faster and wait for pedagogical tact.

Examples are given of some lessons organized for the formation of cognitive activity in young schoolchildren in the process of teaching technology in grades I-IV, which joined the study as experimental groups. It is possible to get acquainted with them in the dissertation.

Teaching technology in this way helps to develop the main cognitive (mental) processes (memory, attention, thinking, imagination, perception, etc.), which allows young students to have cognitive activity.

The fifth paragraph of Chapter II is devoted to "***Organization, conduct and results of pedagogical experiment".***

Individual subjects, including technology classes, have ample opportunities to increase students' cognitive activity in primary education. An experiment was conducted during the study. The following stages of the experiment were in focus: identifying, teaching, and testing.

The following hypothesis was put to the experiment: the development of the process of cognitive activity of pupils during the teaching of technology at primary school will be effective in the organization of learning activities in the following organizational and pedagogical conditions:

The use of interactive methods in increasing the cognitive activity of the junior aged pupils should become the main goal of the training; In order to increase cognitive activity in grades I-IV, the teacher's skills and ability to use appropriate mechanisms should be in line with professionalism; To inculcate knowledge and skills through interactive methods in increasing the cognitive activity of pupils s i the integrative teaching of technology in primary education.

As a result of research, we have learned that primary school teachers do not use modern educational technologies in teaching, and pay less attention to the development of cognitive activity of young students in technology lessons. A much lower, relatively different average level of cognitive activity is observed, and a high level is very low. Cognitive demand is extremely weak. Cognitive interest as well. All this showed that special attention should be paid to increasing the cognitive activity of students in technology classes, and this work should be purposeful, systematic, continuous.

Dozens of measures were taken to increase the professional competence of primary school teachers in the experimental groups. No such events were organized with teachers or students in the control groups. During the experiment, we carried out diagnostic activities with teachers and the junior aged pupils in both experimental groups and control groups, and studied the situation. It turned out that the indicators in the control groups remained almost

unchanged. Significant progress was observed in the experimental groups. The members of this group were characterized by the following indicators: "were ready to apply the knowledge acquired dynamically for life activities (in terms of speed and quality of the task)" and "high level of willpower to achieve the goal (insist on technological tasks, mobilize forces demonstrated complete independence, focused on the task at hand).

Students receive information from a variety of sources to meet their cognitive interests; They were active in answering questions. At the same time, they were able to perform technological tasks at a high level of difficulty. In some cases, the interest in games outweighed the cognitive interest in the junior aged pupils in the control group.

Pupils from the experimental groups received the necessary information independently from many sources, and when this information was not enough to solve the problem, they turned to their teachers and parents for help.

Primary classes of secondary schools in Baku were involved in the experiment. It is possible to get acquainted with the results of the experiment in detail in the dissertation.

The study led us to the conclusion that the primary school teachers participating in the experiment significantly increased their attempts to create pedagogical conditions for students to achieve cognitive activity. This set them apart from the control group teachers.

It was found that the level of development of cognitive activity on all components and indicators increased in the junior aged pupils from the experimental groups. Thus, the purpose of the study was achieved.

The following **conclusions** were drawn from the study:

1. Under the conditions of new pedagogical thinking, the development of pupils' cognitive activity in the process of teaching individual subjects in educational institutions, including general education institutions, should be in the center of attention. From this point of view, consideration should be given to the formation of

cognitive activity of the junior aged pupils at lessons on technology in classes I-IV.

2. Preparation for career choice and employment should also be in focus. Preparing the pupils for the choice of profession and labor activity should be one of the main issues and tasks facing the technology subject.

3. Teachers who conduct classes on the subject of technology should have a clear idea of the pedagogical and psychological foundations of the work related to the formation of cognitive activity of the junior aged pupils.

4. Imagination was formed in the period of the corresponding development of labor, during the adjustment and improvement of labor tools, or rather, in the process of the creative activity of the personality. Pedagogical professionals, including technology teachers, should remember this and inform their pupils about it.

5. Attention to cognitive activity at technology lessons ensures comprehensive development of pupils. Therefore, teachers should focus on the role of cognitive activity in the integrative instillation of technological knowledge in primary classes, and should take advantage of the opportunities of topics at technology lessons.

6. It is necessary to condition the practical solution of technology teaching with content standards and cognition. In this field, of course, theoretical and methodical preparation, competence, and pedagogical mastery are required from the teacher. In terms of increasing the cognitive activity of pupils, the possibilities of the technology subject are wide. The teacher should take advantage of these opportunities, achieve the cognitive activity of young schoolchildren, and manage this process skillfully.

7. In order to effectively operate in the information society, there is a growing demand for students who have cognitive activity, the ability to think independently, and the ability to demonstrate creativity. Effective teaching of the technology lesson helps in the development of the main cognitive (mental) processes (memory,

attention, thinking, imagination, perception, etc.), which allows the junior aged pupils to be cognitively active.

8. When education of diligence in cognitive activity is carried out in a regular, systematic way, it becomes easy to create labor tools and demand for labor.

9. The research gave us the reason to come to the conclusion that the teachers of the experimental classes did not spare their efforts to achieve the cognitive activity of their pupils. This allowed the students of the experimental class to achieve high results. Thus, the aim of the research has been achieved. This allowed the pupils of the experimental class to achieve high results. Thus, the aim of the research has been achieved.

It is advisable to make the following suggestions regarding the research:

1. Given the urgency of the problem, it would be useful to conduct research to increase pupils' cognitive activity in technology lessons in middle (V-IX) grades and upper grades.

2. It is recommended to prepare a monograph or textbook entitled "Formation of cognitive activity of students of I-IV grades in the process of teaching technology lessons."

3. During extracurricular activities, it is necessary to conduct research and write a booklet that combines the development of cognitive activity in students.

The content of the dissertation, the main scientific ideas and the results obtained are reflected in the following works published by the applicant:

1. Instilling technological culture in students // -Baku: Journal of Artisan of the Ministry of Education of the Republic of Azerbaijan, Scientific-theoretical methodical journal of pedagogy, - 2017. No. 1, -p. -35.
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13. Cognitive activity of the junior aged pupils at the technology lessons on Formation by interactive methods //- Uzbekistan: Termiz Davlat Universiteti Philological studies: language, literature, education, -2021, №.1 – p. 2.
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