Pedagogical Foundations of Development of Technological Design Competencies of Primary School Teachers

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The aim is to ensure that the education system is systematically updated, reflecting changes in the fields of culture, economy, technique and technology.

We know that the educational system is designed to solve a number of tasks, including: "instilling basic values and passing on cultural heritage, supporting the personal development of young people and adults, promoting democracy and involving the younger generation in society, developing intercultural understanding, improving health and prosperity, supporting economic development, reducing poverty and increasing general well-being".

Focusing on achieving these goals allows for continuous learning.

Education cannot stand aside from the general trends of our time, among which the development of technological design competence of young elementary school teachers takes the main place in the age of digitization. As a result, in the conditions of digitalization, the problem of developing the technological design competence of elementary school teachers and preparing the teacher for flexible and mobile work appears.

In this regard, the trends are important: increase in the picture of the development of society; throw to the information society; emergence and increase of universal problems; constant need for skills development; increasing importance of the human factor.

Today also technological training or professional training as per today's fast-paced era is important in all phases of education.

First, let's clarify the concept of "Technology". This word entered the science in 1872 and is formed from two Greek words - "technos" - craft and "logos" - science, and means "craft science".

Technology means "craft science", from the Greek tēncē, techne, meaning "art, skill, skill of the hand".

Integrated technological design competence of teachers, technological culture, practical process objects, integrative design of processes. In this case, technological design competence is gradually improved by planning students' practical creativity in work processes.

To understand the relationship between science and technology, consider the following points:-

➢ Contribution of science to technology

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Technology means methods, systems and devices that are the result of scientific knowledge used for practical purposes.

In general, technology refers to the creation, modification, use, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization to solve a problem, improve a previous solution to a problem, achieve a goal, and manage it. Technologies significantly affect people's ability to manage and adapt to their limited skills.

The science of technology and its teaching methodology is designed to help solve the following problems:

A. to ensure that young elementary school teachers acquire knowledge related to social and useful work in the fields of technology, economy, production, and creative activities;

B. arming with the experience of independent creative activity aimed at meeting individual and community needs;

C. to help the development of responsibility for the results of productive work;

D. it is of particular importance to familiarize students with professions and to help them choose a profession suitable for their limited opportunities.

Technological education is considered the main component included in the curricula of general secondary schools. The introduction of the field of technology education reflects the trends in the development of education in primary education competencies. Based on these trends, technology is becoming the main subject of general secondary education. If the natural sciences teach the world, mathematics explains the abstract language for describing and researching the world, and the native language gives the possibility of customization, then the science of technology (mainly by using the results of design) variably teaches the surrounding world.

It is necessary to emphasize that the problems of the development of the field of learning technology and its teaching methodology play an important role in the assessment of the importance of giving technological education to the students of general secondary schools and preparing students for work.

The primary school teachers are designed to provide students with the opportunity to master the methods and tools of the surrounding environment, to retain the scientific knowledge that has been reduced in the study of other subjects in practical activities. This subject, created on the basis of planned work activities, encourages the implementation of positive local and foreign experience in terms of technological, practical, economic and ecological preparation of young primary school teachers, their orientation to the profession at a new level in terms of quality.

Design activity is related to the level of renewal, because it changes the existence, is built on the basis of the appropriate technology, so that it can be changed, reduced and improved. It is important to reduce the design basis, because, first of all, this technology has a wide spread at all stages of the organization of the educational system. Secondly, knowledge of social culture design logic and technology, allows to perform analytical and organizational management tasks at a higher level. Thirdly, the use of pedagogical technologies ensures that teachers become more competitive.

The successful results of education and upbringing of students depend on how well the teacher of science learns project activities, because this process develops the ability to learn new modern approaches and methods that are able to improve and form technological and technical solutions depending on the situation.

Designing is changing the environment with thought. The project is the result of activity in the information environment, and the product is the result of activity in the environment of material objects.

Project activities include: problem analysis; goal setting; choosing a means to achieve it; information search and processing, its analysis and generalization of knowledge; evaluation of the obtained results and conclusions.

problem analysis
goal setting
tool selection
information seeking
processing
analysis
generalization
evaluation

Stages of project activities

Project thinking includes the following indicators: constructiveness, expediency, alternatives, appropriateness of methods and methods are felt. Human interaction with the world of objects, as well as practical activities, historical culture, and a collection of interconnected topics that create colorful connections between nature and the world.

Stages of project thinking

The development of technological design competence has a wider and more voluminous appearance, depending on the methods of implementation of the set goals and tasks. Hence, it acts as a technological design tool. On the other hand, diversity activity can be aimed at determining all the educational bases of modern techniques and technologies, as well as the single organizational and economic bases of modern production, in this case it (activity) is a powerful factor of production preparation.

constructiveness
fitness for purpose
alternative
method
a combination of styles

They determined that the content of the technological design competence of the elementary school teachers is aimed at ensuring the possibility of mastering the invariant methods and tools of the environment for the development of the personality of the students. Based on this, the process of implementation of technological and design competencies within the technological science curriculum was organized as part of our scientific research work on the development of design competencies. Technological design skills of elementary school teachers were improved on the basis of prioritizing the formation of the skill of engaging in productive and reproductive activities, constructive and reconstructive, determining sensitivity to conflicts and expressing them in a goal-oriented manner.

In this case, technological design, qualifications and skills of primary school teachers will be activated on the basis of the organization of personal productive development experience in knowledge-acquiring activities.

In short, design as a creative process passes through stages such as inspiration, emotional shock, joint work of thinking and imagination, the most sharpening of consciousness, ways to achieve the set goal and its result is the brightest and brightest. This plays an important role in the development of technological design competencies of primary school teachers.

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