Scientific, Theoretical and Methodological Foundations for the Development of Information Competence Based on an Innovative Approach to Teachers of Mathematics General Secondary Education

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A B S T R A C T

The article states that a study conducted to determine the effectiveness of modern education shows that the level of achievement of educational goals is measured by the degree of increased mental activity of a student. The organization of the activation of the student's activity in the learning process by the teacher means an independent, active, purposeful study of the educational material, based on the use of methods and techniques of self-government, self-control of students. The form states the purpose of the study

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A school mathematics teacher must be able to use and apply modern information and communication technologies in the organization and effectiveness of the educational process:

➢ the use of modern information and communication technologies in the educational process;

➢ Ability to work with multimedia, its hardware and software;

➤ access to basic services and resources of the Internet;

➤ have the skills to work on the educational portal ziyonet.uz and educational sites;

Teacher:

➤ the use of information and communication technologies in the educational process in their specialty;

➤ the use of multimedia capabilities when creating lesson plans;

➤ use basic Internet services when organizing training;

➤ use of multimedia, its hardware and software;

➤ Be able to organize classes using the educational portal ziyonet.uz and educational sites.

Teaching the subject of information technology based on multimedia lessons provides a wide range of opportunities to differentiate and individualize education in the context of modern pedagogical technologies in order to increase the effectiveness of learning. Solving the problem of modern education requires direct reliance on new information technologies in education. The use of information technology is aimed at individualization and differentiation of educational content from standardization, which leads to individualization of education and the ability to manage the acquisition of knowledge.

Liberalization of education is one of the most important problems in education. Liberalization of education depends on when students realize the importance of self-improvement and self-study.

One of the most important tasks is to develop students' ability to work independently, which plays an important role in increasing the effectiveness of learning.

In order to increase the effectiveness of teaching, the integration and synthesis of disciplines based on a new approach to goals, methods, content, form, tools and learning processes is based on the design method, since it is purposeful. The project method is focused on the study of personal skills and abilities required to acquire knowledge.The main goal of the project method is to gain all the knowledge and skills necessary to complete a task in the process, with students sharing tasks by working independently as part of a project team, from planning to implementation and drawing conclusions.Studies to determine the effectiveness of modern education show that the level of achievement of goals in education is measured by the degree of increase in the mental activity of a student.

The organization of the activation of the student's activity in the learning process by the teacher means an independent, active, purposeful study of the educational material, based on the use of methods and techniques of self-government, self-control of students. understood.

As the expected outcome in education depends more on the relationship between teacher and student, there is a growing need for the development of collaborative pedagogy that serves to solve the problems associated with these relationships.

The main studied factors of interaction between a teacher and a student in achieving educational goals are:

➤ knowledge and skills of teachers and students in effective teaching height;

➤ Increased student need for education to intensify activity, in turn, the teacher himself performance and skills development;

➤ to simulate the teaching of students in small groups;

➤ Creation of conditions for self-assessment of students.

Based on theoretical and practical research, the following conclusions can be drawn about the effective study of information technology:

➢ learning should be encouraged (by praise);

➢ whether students are aware of their academic achievements;

interest increases;

➢ it is necessary to organize active periods of study;

➢ use many opportunities during study, study you need to adapt to your situation;

➢ The more actively students learn, the more continuous learning and will be successful using interactive teaching methods and conduct group training;

➢ The effectiveness of teaching using auxiliary methods in the learning process can be increased.

"Information technology", taking into account the role of polytechnic education and technological training in improving the methodological training of mathematics teachers in the field of teaching information technology and the continuous development of information competencies based on innovative approaches, the formation of an able-bodied person in the information environment The need to study the field of education and its main goal - the formation of a new technical and economic thinking and technoethics in order to ensure the life of the younger generation, its interaction with animate and inanimate nature and interaction. It can be assessed as the integration of humanitarian, natural science and technological knowledge, complementing each other.

As a result, the polytechnic development of youth, acquaintance with modern and promising technologies for the transformation of materials, energy and information, taking into account economic, environmental and entrepreneurial knowledge, the acquisition of general labor skills and abilities, creative and aesthetic development of students. To acquire the skills and abilities necessary for life, including including the culture of behavior and conflict-free communication in the process of work, self-awareness of students, choosing a career based on themselves, learning the world of professions, providing practical experience of elements of professional activity.

Achieving these goals includes:

1) To develop in students the qualities of a person who thinks creatively, actively and needs action in new socio-economic conditions, easily adapting to the needs of the product from its sale; Students should be able to: a) determine the needs and opportunities of their activities; b) search and use of the necessary information; c) promotion of ideas for solving problems (design development and choice of technologies); g) planning, organization and execution of work (start-up of the installation, operator activity); d) evaluation of the results of the stages of work, adjustment of their activities and the fulfillment of the conditions for the sale of the products of the activity; formation of knowledge and skills in the use of means and methods of converting materials, energy and information into finished consumer goods and services in conditions of limited resources and freedom of choice; prepare students for informed career choices and humane achievement of their life goals through differentiated learning; formation of a creative approach to the quality of work; develop different personal qualities and the ability to professionally adapt to changing socio-economic conditions. In the process of teaching the direction "Information technology" the following tasks should be performed: 1) formation of knowledge about the most widespread and promising technologies and the system of mental, sensory and physical behavior; 2) to acquire basic vital knowledge and skills of housekeeping and family farming; 3) familiarity with the basics of modern products and services; 4) development of students'

independence and ability to solve creative and inventive problems; 5) make sure that students understand themselves, get to know the world of professions, take tests for choosing a profession in order to choose a career that suits them; 6) education of industriousness, enterprise, teamwork, humanity and kindness, purposefulness, conscientiousness, responsibility and order, culture of behavior and conflict-free communication (moral education); 7) education of respect for nature and natural resources; the formation of an active ecological life position in educational and labor activities (ecological education); 8) develop the basic concepts of market economy, management and marketing and the ability to apply them when selling their products and services; 9) teach students to use consumer goods as objects of labor, to design them in accordance with the requirements of design and arts and crafts to increase their competitiveness in sales.

Development of the child's artistic initiative (aesthetic education). The listed goals and objectives are intended for implementation during the academic year, from the first to the eleventh grade. What is the role of math teachers in achieving them? Its main tasks - along with the formation of accounting rules and skills in students - are to teach students to learn, communicate, think correctly, instill a habit of systematic work, show the first valuable directions based on the learned elements. technological knowledge, etc. To solve the main task of the field of education "Information technology" and the entire education system - creative. Personal shaping often depends on the teachers in the school.

How school teachers teach children to respond to work depends on whether they will become in the future: creative thinkers or simply passive creators. It is well known that primary school students, when encouraged and guided by a teacher, can identify the needs and opportunities of their activities, find and apply the necessary information, plan their work and solve problems that arise. Have the ability to decide, evaluate, and correct their performance. Later it will serve as a basis for assimilating the content of education "Information Technologies" in middle and high school.

Mathematics consists of vocational education - the formation of ideas about the work of adults, professions and industries, accounting rules and the study of the interests and abilities of students. The level of development of competence largely depends on innate abilities, conditions of education and upbringing. Psychological research shows that abilities are present in movement and development. They are highly flexible, even when compensatory mechanisms of one ability are replaced with another if necessary. Therefore, when preparing students for an informed career choice, it is important to take a cut of the development of skills, determine the propensity for a particular type of profession in mathematics, and plan further work based on the results obtained.

With the help of tests proposed by L.Z. Krasnovsky, it is possible to determine which type of profession is preferred and develop skills. Certain psychological requirements are imposed on each type of profession. For example, for human-technical professions, clear vision, hearing, vibration, kinesthetic perception, good coordination of movements, developed technical and creative thinking, switching attention from one subject to another and must have a resume, observation skills.

All of these qualities are formed mainly in the process of practical work in mathematics lessons for schoolchildren, as well as in solving technical and technological problems.

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