THE IMPORTANCE OF PEDAGOGICAL SOFTWARE IN USING INFORMATION COMMUNICATION TECHNOLOGIES IN EDUCATION

Nafasov Ganisher Abdurashidovich - Associate Professor, Department of mathematics, Gulistan State University, doctor of Pedagogical Sciences (PhD)
Nafaova Gulnoza Bahtiyorovna-Gulistan state university, department of physical,
e-mail: gnafasova@gmail.com

Abstract: This article describes the prospects of using information and communication technologies and effective methods and tools in the training of future pedagogic personnel. The methods of harmonious application of software tools together with innovative pedagogical technologies in the organization of the educational process are highlighted.

Keywords: Education, pedagogue, technology, innovative, software tool, didactic resource, methodological support, test

Pedagogical software tools are didactic tools designed for partial or complete automation of the educational process with the help of computer technologies. They are considered one of the promising forms of increasing the effectiveness of the educational process and are used as teaching tools of modern technologies.

Pedagogical software tools include: a software product (set of programs) aimed at achieving specific didactic goals in a subject, technical and methodical support, additional auxiliary tools.

Pedagogical software tools can be divided into:

- educational programs - guide students to learn new knowledge based on their level of knowledge and interests;
- test programs - used for checking or evaluating acquired knowledge, skills and abilities;
- exercises - serve to repeat and strengthen previously learned educational material;
- programs that create a virtual learning environment with the participation of the teacher.

In order to implement the technology of creating pedagogical software tools, there are a number of positive factors that confirm their superiority over traditional tools. These factors were divided into didactic, psychological, economic and physiological groups.

Didactic requirements for pedagogical software tools include: scientific, intelligible, strict and systematic description (ensuring the possibility of constructing the content of educational activities, taking into account the basic principles of

pedagogy, psychology, informatics, ergonomics, the fundamental foundations of modern science), continuity and integrity (is a logical consequence and complement of previously learned knowledge), consistency, problematic, demonstration, activation (independence of teaching and the presence of 201 features of activity), stability of mastering the results of teaching, interactivity of communication, integral unity of teaching, education, development and practice. Methodological requirements include the following: taking into account the specific characteristics of a specific educational subject, taking into account the uniqueness of a certain subject, the interdependence, interrelationship, diversity , implementation of modern methods of information. Psychological requirements include perception (verbal-logical, sensory-perceptive), thinking (conceptual-theoretical, visual-practical), attention (persistence, transference), motivation (active forms of work, high level of visuality, high level of students with the help of timely feedback constant stimulation of level motivations), taking into account memory, imagination, age and individual psychological characteristics (taking into account acquired knowledge, skills and qualifications, the content of academic subjects and the level of complexity of educational issues should match the age capabilities and individual characteristics of students, excessive feeling in mastering educational material - protection from exposure to emotional, nervous, mental loads). Technical requirements include modern universal personal computers, external devices, test resources. Network requirements include "client-server" architecture, Internet navigators, network operating systems, telecommunications, management tools (individual and collective work of the educational process, external feedback). Aesthetic requirements include: orderliness and expressiveness (elements, location, size, color), functional function of decoration and compliance with ergonomic requirements.

Specific requirements include: interactivity, goal orientation, independence and flexibility, audioization, visibility, access control, intellectual development, differentiation (classification), creativity, openness, feedback, functionality, reliability. Ergonomic requirements include: friendliness, user adaptability, organization of screen shapes. Methodological requirements take into account the specific features of the subject, its laws, research methods, and the possibilities of introducing modern methods of information processing.

Pedagogical software tools created from subjects must meet the following methodological requirements:

1. Pedagogical software tools - construction based on the interdependence of conceptual, figurative and moving components of presentation of educational material.

2. Pedagogical software tools provide educational material in the form of a high-order structure. Consideration of interdisciplinarity.

3. Creation of opportunities to determine whether the learner has gradually mastered the educational material in pedagogical software tools based on the

implementation of various controls. Functional and psychophysiological capabilities of students must be taken into account when forming independent learning skills and qualifications of students based on the use of pedagogical software tools. Educators' desire to cover as much information as possible on the basis of pedagogical software tools can lead to excessive fatigue of the student. On the other hand, increasing the speed of data transfer has a negative impact on the quality of information acquisition, the number of errors, and the student's well-being and health. Physiological-hygienic research shows that the mental capacity of computer learners changes inversely proportional to the amount of information to be learned.

This is explained by the following reasons: - increasing load on the organs of vision; - cessation of the initial emotional uplift that occurs when receiving news; - accumulation of negative emotions due to possible uncertainty and errors; 202 - the reception of a large amount of educational resources prevents the active assimilation of subsequent information resources. This situation makes it necessary to develop pedagogical software tools in the educational process, taking into account the necessary didactic, psychophysiological and methodological requirements. The psychophysiological effectiveness of pedagogical software tools is determined first of all by students' mastery of educational materials, education and intellectual development, performance indicators, and levels of motivational stability. Secondly, it is related to the teacher's activity and is determined by the indicators of rational use of teaching concepts, pedagogical technologies and educational tools, the teacher's stable motivation towards work, and the ability to work.

References

1. Nafasov, G. (2019). Model of Developing Cognitive Competence at Learning Process Elementary Mathematics. Eastern European Scientific Journal, (1).

2. Nafasov, G. A. (2023). Determination of the Low Pressure Zone of the Water Conducting Tract of Reservoirs. Genius Repository, 25, 28-32.

3. Abdullayeva, B. S., & Nafasov, G. A. (2019). Current State Of Preparation Of Future Teachers Of Mathematics In Higher Education Institutions. Bulletin of Gulistan State University, 2020(2), 12-17.

4. Nafasov, G., Kalandarov, A., & Xudoyqulov, R. (2023). Developing students'cognitive competence through teaching elementary mathematics. Евразийский журнал технологий и инноваций, 1(5 Part 2), 218-224.

5. Kengash, J., & Nafasov, G. A. (2023). On the Self-Similar Solution of The Problem of Unsteady Movement of Groundwater Near a Reservoir in the Presence of Nonlinear Evaporation. Genius Repository, 22, 37-41.

6. Nafasov, G., Xudoyqulov, R., & Usmonov, N. (2023). Developing logical thinking skills in mathematics teachers through digital technologies. Евразийский журнал технологий и инноваций, 1(5 Part 2), 229-233.