

THEORETICAL FOUNDATIONS OF THE USE OF PEDAGOGICAL SOFTWARE TOOLS IN AN INFORMED EDUCATIONAL ENVIRONMENT

Kudenov Temurbek Maxsetbayevich

Department of methods of teaching mathematics, assistant teacher
Nukus State Pedagogical Institute named after Azhiniyaz
Nukus city, Uzbekistan
kudenovtemurbek509@gmail.com

ABSTRACT

This article analyzes the theoretical foundations of using pedagogical software in the information educational environment. It highlights the use of software in education, their didactic functions and methods for increasing their effectiveness. It also examines the role and prospects of technological approaches in the modern educational environment.

Keywords: Informational educational environment, pedagogical software tools, didactics, technological approach, educational efficiency.

INTRODUCTION

The development of information and communication technologies (ICT) has created new opportunities in the educational system. With the help of pedagogical software tools, it became possible to organize the educational process interactively, personalized and efficiently. This article is aimed at analyzing the theoretical foundations of pedagogical software tools, their didactic significance and their place in the educational process.

The essence of pedagogical software tools

Pedagogical software tools are technological tools specially developed for the organization, management and control of the educational process, which perform the following basic functions:

1. Didactic: facilitates the assimilation of educational materials.
2. Organizational: allows you to effectively manage the learning process.
3. Diagnostic: allows you to assess the knowledge of students and monitor the

process of assimilation.

Pedagogical software tools bring interaction between teacher and students to a new level in an informed educational environment.

The main roles of pedagogical software tools in self-development

1. Organization of Independent Education

Pedagogical software tools allow students to independently organize the educational process:

- Individual planning: students can develop and implement study plans that suit them.
- * Flexible learning materials: provides each student with resources that are relevant to their level of knowledge and interests.
- * Distance learning: through programs in the online mode, students will be able to receive education regardless of geographical location.

2. Improving the quality and efficiency of Education

With the help of pedagogical software tools, the educational process is effectively organized:

* Multimedia materials: the process of obtaining knowledge through materials of text, video, audio and graphic appearance becomes more interesting and understandable.

* Interactive methods: strengthens student knowledge through software tools with hands-on activities, simulations and virtual laboratories.

• Self-assessment: special tests and Assignments give students the opportunity to independently assess their level of knowledge.

3. Individualization and personalized training

Software tools provide an individual approach, taking into account the differences between students:

• Artificial intelligence (AI): analyzes the student's level of knowledge and provides him with suitable materials.

• Digital assistants: there are chatbots and interactive guides to help with the teaching process.

* Flexible education programs: students can choose courses in different directions to suit their interests.

4. Development of the student's abilities

Pedagogical software tools serve to develop various skills in students:

* Building creativity: digital platforms and gameplay elements encourage students to take a creative approach.

* Developing critical thinking: through simulation and problem-solving training, students grow critical thinking skills.

• Increased responsibility: through independent assignments and project work, students realize their responsibilities.

5. Self-assessment and Development Monitoring

Pedagogical software tools allow you to monitor self-development:

* Development progress tracking: students have the ability to track their results in real time.

• Feedback system: receives feedback from teachers or an automated system on their activities.

* Identify shortcomings: the program identifies the weaknesses of the student and gives recommendations for their improvement.

Distinctive features of an informed educational environment

An informed educational environment has the following characteristics:

1. Interactivity: provides real-time interaction between students and faculty.

2. Personalization: adapts education to suit the needs of each student.

3. Access to unlimited resources: provides full access to learning materials through the Internet and digital platforms.[1,56-57p

In an informed environment, pedagogical software tools are important in providing these features.

Types of pedagogical software tools

1. Electronic textbooks and tutorials

* Resources in electronic form, fully covering educational materials.

• Is in multimedia format and includes various didactic tools.

2. Testing and evaluation programs

• Applications used to verify and evaluate student ar knowledge.

• For example: Google Forms, Kahoot, Quizlet and similar tools.

3. Interactive simulators

* Virtual programs that introduce students to practical skills.

• For example, virtual laboratories, programs for simulating experiments in chemistry or biology.

4. Gamification platforms

* Tools that organize education through game elements.

• E.g.: Duolingo (language learning), Kahoot (quizzes).

5. Training platforms and LMS (Learning Management Systems)

* Involvement of students in the distance learning process and management systems of educational materials.

• Example: Moodle, Blackboard, Google Classroom.

6. Artificial intelligence applications

• Analyzes students' abilities and recommends suitable educational materials for them.

For example: auxiliary tools such as ChatGPT, Grammarly.[2,68-69p]

Didactic functions of pedagogical software tools

1. Information transmission: to facilitate the attention and acquisition of students by delivering information in an interactive form.

2. Performing practical exercises: applying theoretical knowledge to practice using simulators and virtual laboratories.

3. Control and evaluation: assessment of students' knowledge through online tests and automated systems.

4. Providing feedback: establishing interactive communication between teacher and student.

Advantages of using pedagogical software tools

• Increases educational efficiency: interactive technologies help to master learning material faster and deeper.

* Provides a flexible educational opportunity: provides an individual approach to each student.

• Increases student motivation: game-shaped approaches and interesting content increase student engagement.

• Saves resources: delivers many training materials electronically.[7,135-143p]

Practical approaches

In order for the use of pedagogical software tools to be successful, the following are recommended::

1. Studying the needs of students: choosing software tools that are suitable for each student.

2. Teacher training: improving the knowledge and skills of teachers in order to effectively use software tools.

3. Methodological development: development of special methodologies for adapting software tools to the educational process.

4. Implementation of the assessment system: the use of diagnostic functions of software tools to analyze the knowledge acquired by students.[3,75-79p]

Pedagogical aspects

1. Individualization and flexibility

ZAT allows you to provide materials suitable for the needs and abilities of each student in the educational process:

• Individualized curriculum: Organization of activities corresponding to the abilities of students.

* Flexible educational platforms: provide students with the opportunity to gain knowledge based on their interests.

2. Enhance interactivity and communication

Through ZAT, students' communication with each other and with the teacher will be more effective:

* Collaboration in a Virtual environment: for example, online forums and group projects.

- Feedback system: teachers have the opportunity to give students quick feedback about their activities.

3. Making the learning process interesting

With ZAT, teachers can organize classes to be fun and interactive:

- * Multimedia tools: video, animation and game elements are effective in engaging in the lesson.

- * Simulations: helps to understand complex processes easily.

4. Evaluation and control efficiency

With the help of ZAT, it is possible to objectively and quickly assess the knowledge of students:

- Online tests and quizzes: allows you to view results in Real time.

- * Automated analysis: makes it easy to analyze results and identify weaknesses.

5. Distance learning opportunities

The possibility of distance learning with the help of ZAT is expanding:

- No geographical boundaries: students can study anywhere.

- * Constant availability of educational materials: learning is facilitated through electronic libraries and online courses.[4,90-97p]

Prospects in the educational system

The modern educational system cannot develop without pedagogical software tools. In the future, these tools will improve in the following directions:

1. Integration of artificial intelligence: each student is offered a flexible education plan.

2. Virtual and augmented reality technologies: the possibility of visualization of complex processes is created.

3. Development of digital skills: students acquire skills in working with modern technologies.[6,145-149p]

Pedagogical software tools are one of the main tools in the self-development of students. They provide students with a high degree of independence, interest, and efficiency in the learning process. Mastering and proper use of such tools will greatly contribute to the personal and professional development of students. Therefore, in the educational process, it is important to widely introduce pedagogical software tools and fully reveal their capabilities.[5,110-112p]

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