Electronic Didactic Support For Developing Professional Skills Through Digital Platforms

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Abstract: This article talks about didactic support for organizing the educational process using digital platforms, its purpose and forms, content and requirements.

Key words: *education, digital platform, teaching methods, didactic support, electronic didactic support, didactic principles, digital didactics.*

Raqamli Platformalar Vositasida Kasbiy Ko'Nikmalarini Rivojlantiruvchi Elektron Didaktik Ta'minot

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Annotatsiya: *Ushbu maqolada raqamli platformalar vositasida ta'lim jarayonlarini tashkil etishning didaktik ta'minoti, uning maqsadi va shakllari, mazmuni va unga qo'yiladigan talablar xaqida so'z boradi.*

Kalit so'zlar: *ta'lim, raqamli platforma, o'qitish usullari, didaktik ta'minot, elektron didaktik ta'minot, didaktik tamoyillar, raqamli didaktika.*

Аннотация: В данной статье говорится о дидактическом обеспечении организации образовательного процесса средствами цифровых платформ, его цели и формах, содержании и требованиях.

Ключевые слова: *образование, цифровая платформа, методы обучения, дидактическое обеспечение, электронное дидактическое обеспечение, дидактические принципы, цифровая дидактика.*

The use of modern information technologies in education is one of the important factors in the development of the educational process. In recent times, great attention has been paid to learning through digital platforms and the creation of its didactic support, which can be assessed as a serious step towards solving targeted problems.

The scientific and pedagogical foundations for creating electronic didactic support are defined in the scientific works of E.I. Mashbitz, V.P. Bespalko, I.V. Robert, T.P. Avanesova, A.A. Andreev, A.V. Abramova, P.V. Sisoev, and others.

Modern information technologies allow for the simplification and development of the effectiveness of comprehensive perception processes at a completely different level.

Electronic didactic support is a set of information and communication technologies aimed at improving the quality and effectiveness of educational processes.

E.G. Skibiski emphasizes this concept as a set of diverse educational information related to the didactic goals and objectives of education, meeting the requirements of pedagogy, psychology, computer science, and other disciplines.

I.N. Buldakova understands a person-centered technology that includes the goal and its arguments, didactic tools, various didactic content adapted to the individual characteristics of the learner, and methodological recommendations for the teacher.

In our view, electronic didactic support (EDS) is a set of electronic educational resources designed to organize and support the educational process. Unlike ordinary electronic content, electronic didactic materials are specially developed for didactic purposes, that is, taking into account the principles of education and upbringing.

Electronic didactic support may include a variety of resources listed below:

- educational electronic publications: these are electronic analogues of textbooks, teaching aids, textbooks and other types of printed publications. They may include text, images, audio and video content, interactive elements, and tests;

- electronic modules: independent blocks of educational content aimed at developing the professional skills of future elementary school teachers or a specific topic;

- training programs and simulators: interactive programs aimed at developing the professional skills of future elementary school teachers;

- electronic tests and control work: assessment tools that monitor the development of professional skills of future elementary school teachers;

- multimedia presentations: tools for visualizing information and explaining complex topics.

- digital library and archive: a collection of digital educational resources;

- educational management systems (LMS): platforms that ensure the organization and management of educational processes, interaction between the teacher and the student.

Understanding the principles of digital didactics allows for the most effective organization of educational processes on a digital platform.

Education is primarily provided through the didactic support of a digital platform aimed at developing the professional skills of future elementary school teachers, and it is considered a comprehensive system using digital technologies. This is not just a system for transmitting information, but an interactive and person-centered system that provides for the widespread use of the digital platform's capabilities beyond this limit.

Electronic didactic support plays a crucial role in developing professional skills using a digital platform. The goal of this is, first and foremost, to implement platform-based learning, which involves developing professional skills for future elementary school teachers, and the general public emphasizes that this is a comprehensive system using digital technologies. Therefore, this is not just a system for transmitting information, but an interactive and person-centered system that provides for the widespread use of the digital platform's capabilities beyond this limit.

Such a system, that is, a digital platform, has a number of its own principles:

- availability: availability of education at any time and in any place;

flexibility: the ability of future elementary school teachers to learn at their own pace and based on a schedule.

- Interactivity: providing for the use of various educational methods to ensure the interest of the educational process;

- scalability: the ability to train a large number of users simultaneously through a digital platform;

- savings: savings on printing materials, buildings and transportation costs;

- modularity: the digital platform consists of separate, independent modules (components), that is, the harmlessness of adding or removing content, making changes to this system without affecting other parts of the platform. Such capabilities ensure that the digital platform adapts to changing requirements, as well as adding new features to the platform.

- confidentiality: the platform fully meets the privacy requirements;

- data and analysis: the platform should have the ability to effectively collect and store data about users and their activities, as well as analyze user activity.

Electronic didactic support plays a crucial role in the implementation of the teacher's information and managerial activities. They stimulate and support the cognitive (cognitive) processes of future elementary school teachers, enhance the visibility of the learning content being studied, and also activate the mutual and individual actions of students.

Electronic didactic support also stimulates and supports the cognitive processes of future elementary school teachers, utilizing interactive and multimedia capabilities of digital technologies. An example of this is the following main methods:

Method 1: by increasing motivation and activity. Interactive, multimedia, and special (adaptive) digital platform systems are used.

- Interactivity: the electronic didactic support of the digital platform allows you to offer interactive tasks, games, simulations, quizzes, which in turn makes learning more interesting and attractive than text-based passive learning. These opportunities are manifested in increasing the motivation of future elementary school teachers to learn, as well as in memorizing various information.

- Multimedia capabilities: video, audio, animated presentations and 3D models of the digital platform, ensuring the visibility of educational content. This is particularly effective for students with different learning styles.

- Special (individualization): flexible electronic didactic support systems take into account the individual speed and learning styles of future elementary school teachers by establishing feedback and ensuring the complexity of tasks. These opportunities will help them see their own growth and further increase their motivation.

Method 2: by improving perception and memory. This is facilitated by the visibility, structurality of didactic support, and the possibility of their reproduction at will.

- Visuality: graphic objects, diagrams, images and video information of the digital platform help to better understand complex concepts or abstract ideas and make them easier to remember.

Structural information: didactic support implies the presentation of information in a structured form using diagrams, memory cards, headings, which in turn facilitates the assimilation and memorization of information.

- Multiple repetitions: repeated referrals to the topics covered, testing and the ability to complete assignments create a foundation for strengthening the knowledge, skills, and abilities (KAS) of future elementary school teachers.

Method 3: Developing critical thinking and problem-solving skills. This includes didactic support for situational tasks, the use of simulations, and the completion of project work.

Situational tasks and cases: didactic support can offer tasks that require analysis of the situation, search for solutions, and drawing correct conclusions based on them.

Simulations: virtual simulations allow for learning by conducting experiments and learning from mistakes and drawing conclusions in a safe platform environment.

- Project work: didactic support allows future elementary school teachers to develop their research work, analysis of research work, and presentation of the obtained results, supporting group and individual project work.

Method 4: Supporting self-regulation and metacognitive abilities. This involves establishing direct and feedback links on the platform, highlighting the capabilities of the testing module and educational processes.

- Establishing direct and feedback: establishing direct direct and feedback on the digital platform will help future elementary school teachers track their progress, identify gaps in knowledge, and correct their learning behavior in a timely manner.

- Passing independent testing: the ability to pass the platform's testing module and immediately see the assessment results will help future elementary school teachers develop self-assessment and self-management.

- Teaching organization tools: the platform's calendar, planning, and note-sending modules help future elementary school teachers effectively manage their time and organize the learning process.

In pedagogical practice, great attention is paid to the creation of didactic support complexes for various disciplines. They are designed to enhance

pedagogical skills; enhance the effectiveness of educational processes; create a didactic unit for mastering the system of knowledge and developing the creative activity of future elementary school teachers, and so on.

The methods described above provide for the continuity of the educational process, lifelong learning - lifelong learning, as well as individualization of education based on advanced learning technologies.

In pedagogy, the concepts of "electronic didactics" (U.I. Inoyatov, B.S. Abdullaeva, E.V. Shirshov, N.E. Beketova, and others) and "digital didactics" (G.Zh. Bomurodova, A.A. Blinov, V.I. Andreev, A.A. Andreev, A.V. Soldatkin, A.V. Khutorskoy, and others) are distinguished.
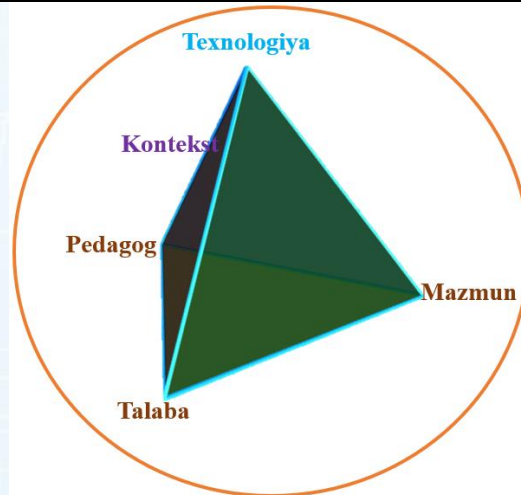
In our opinion, the concept of "electronic didactics" is given a very abstract definition, and electronic didactics is a human resource in the informatization of education. Digital didactics, or in science, it is also called didactics of digital education, which implies the systematic solution of educational problems through electronic didactic support and methods of modern education, i.e., the integration of digital technologies with traditional technologies, i.e., blended, synchronous, and asynchronous learning.

Synchronous learning is manifested in real-time communication between two or more students (Zoom, Skype, Chat, or Webinar). Asynchronous learning is more flexible than synchronous learning. Training is carried out simultaneously, and conditions are created for the learner to participate at another time, at a time convenient for them.

As practice shows, the most common form of learning is blended learning, where a combination of asynchronous and synchronous learning is used. The digital platform created by the researcher allows for the equal use of all these types of education.

The concept of digital didactics is only just emerging, but ideas about how it should be are already present (see Figure 1).

In the context of this study, e-learning is understood as a means of transmitting the experience of future elementary school teachers and achieving the expected skills using interconnected modules on the platform, and it answers the following main didactic questions: "What to teach?," "How to teach?," "Why to teach."

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Figure 1. The traditional tetrahedron of didactics.

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Implementation of the principles of electronic didactics. The principles of electronic didactics define the main rules for organizing educational processes and the main requirements for the teacher's work (see Table 1).

1-table.

The role of e-didactic principles in the educational process

Principles	The requirements of the principles, the link to the standard of education, the digital platform resources that make the principles work	The role and importance of principles in the work of a pedagogue. He must do the following:
Organization of educational environment		
Digital platform saturation	The saturation of the digital platform with various contents, technologies and educational tools, the possibility of choosing educational contents	Development of an independent TS based on the existing DTS.

	depending on the age and educational goals of future elementary school teachers. Availability of testing, interactive tasks and other resources on the platform.	
Multimedia (multimodality)	Use of various methods of content presentation in educational processes: text, hypertext, graphics, animation, video, etc.	Using different methods of presenting content on the platform, taking into account the simultaneous presence of visuals, audios and kinesthetics in the audience; offering students different methods of learning and memorizing content, relying on mnemonics and graphic methods of information systematization and structuring.
Fitness for purpose	Digital resources should be directed to the defined purpose, that is, to solving the tasks specified in the educational standard: formation of functional literacy, variability (variability) of education, etc.	Determining the intended purpose of using various resources (for the teacher and the student), analyzing which results have been achieved and which have not been achieved.
Organization of educational processes		
Dominion	In the educational process, the student is active, and the pedagogue is his	Activation of individual, paired and group independent work of

	assistant and adviser. In this, interactive exercises, cloud service, etc. are used to organize independent work.	future elementary teachers, use of new models of training based on active independent work (flipped education, changing workplaces, etc.).
Person oriented	Individual training programs and individual educational directions (ITY) are created for future elementary school teachers. Here, the resources necessary for their independent work while moving in the direction of individual education are important.	Helping future elementary teachers to create ITY and follow their progress in this direction. Diagnosis, control and reflection using the platform.
Practical guidance	BKM should be applied in life. Tasks focused on practical solutions are offered here. It is required to carry out project work in and out of class and ultimately achieve the creation of a digital product.	Functional literacy focuses on the performance of life-related issues and tasks to develop global competencies and creative thinking components. The focus is on practice rather than theory.
Adaptive, flexible	Taking into account the level of difficulty and interdependence of content when learning. It is taken into account that the tasks offered on the platform are dependent	Various tasks are offered on the platform depending on the execution of the exercises presented as examples. The basis for creating a database of educational content is

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	on the tasks that preceded them.	created using the task and exercise constructor.
Compounding	Step by step complexity of the studied issues, transition from simplicity to complexity in learning content is ensured.	To offer future elementary school teachers tasks of varying complexity and to provide a step-by-step transition from simplicity to complexity.
Activities of future elementary school teachers		
Evaluation	Evaluation is seen as a continuous process and it allows to identify the achievements and shortcomings of future elementary teachers, draw conclusions and make recommendations. On the platform, practical tasks with testing and output of results and evaluation criteria, opportunities for collecting statistical data have been created.	It is recommended to practice assessment for learning and assessment as learning, using computers, criteria and scoring systems.
Cooperation and interaction	Active interaction of future elementary school teachers (in pairs, groups, teams), mutual evaluation, involvement of parents in educational processes. Cloud resources are essential for collaborative activities.	Extensive use of platform resources and technologies.

Didactic principles should be considered in all classes. In modern conditions, it is very important to organize traditional classes with a strict structure (learning, repetition, knowledge reinforcement) in harmony with innovative classes (reversed learning, changing jobs, working on mini-projects, etc.). The content of these principles is widely explored in the scientific works of A.Z. Alekseeva, V.I. Blinov, V.I. Glizburg, N.P. Kalymbetova, A.A. Marinyuk, Yu.A. Serebrennikova, and others. In these research papers, the characteristic features of any didactic platform are its completeness, orderliness, and stability. Electronic didactic support, developing professional skills through digital platforms, involves the widespread use of digital technologies in creating an interactive and effective learning environment for future elementary school teachers. It is based on active, personalized, and productive learning. On the other hand, didactic support also fulfills the educational and developmental functions of future elementary school teachers.

Developmental functions are linked to a combination of methods and technologies implemented through didactic support, forming a conscious need to be in the process of constant development and self-improvement in professional activity.

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