

## **Aspects of digital pedagogy**

A simple way to describe digital pedagogy in the application of modern educational technologies is teaching, training and project work organized using electronic devices and tools. In other words, digital pedagogy is the use of information and communication technologies (ICTs) in teaching. In these definitions, the concept of digital pedagogy is used to describe primarily the technical means of teaching themselves. Digital pedagogy is a term that is difficult to describe, as its definition varies. Thus, the peer-reviewed journal Hybrid Pedagogy defines digital pedagogy as follows “ ” Digital pedagogy is rather not the use of digital technologies for teaching, but, more precisely, an approach to these tools from a critical pedagogical point of view [1].” Thus, it is not only about professional use of electronic tools, but also about deciding when to use them, in order to draw the teacher's attention to the impact of digital tools on learning, both positive and negative.

Modern technologies and technical means are information, educational and auxiliary materials or tools, everything that can also be presented in electronic format. To plan the learning process in this format, it is necessary to consider several available ways of organizing training. Within the framework of digital pedagogy, methods of organizing learning are used both in the environment of traditional classroom classes and on the Internet. However, the main focus of digital pedagogy is the web-based learning environment, tools used on the Internet, digital tools and devices, tools for information work, social networks, artificial intelligence, etc.

The virtual learning environment at the present stage provides the opportunity to simultaneously use two learning strategies, thereby providing a special approach to each of the students and a wide coverage of the audience of educational services. The SPOC strategy (Small Private Online Course) is designed for a personalized approach to learning [2]. The features of such courses are: No more than 20 students can participate in each course; Availability of prerequisites for further completion of the

course; Students must register and apply, depending on the course purpose and learning objectives; All training takes place online, synchronously or asynchronously, with the possibility of face-to-face meetings; Teachers of all SPOC courses provide constant feedback to students; The group is supported by a moderator who accompanies the students throughout the course.

The methodology used in SPOC, when teaching the theoretical foundations of the subject, is based on the use of short videos (and video simulations) to transfer knowledge in the form of mini-lectures [3]. Students perform practical tasks independently. The autonomy of the actions of each of the students is ensured by self-examination, self-reflection and exchange of experience with other classmates who are taking the same course. This strategy in education is carried out mainly on the basis of universities and colleges, at the level of higher education based on adaptive learning, and has a number of characteristics that distinguish them from traditional online education courses.

The MOOC strategy (English: Massive Open Online Course) can be based on three independent models, aimed at an adult audience that learns throughout life. Also, the MOOC concept is widely used at the level of secondary specialized and higher online education, which was developed on the basis of a traditional course under the guidance of a teacher, but it is characterized by an automated, mass and online learning process [4]. The features of mass open online courses are: Unlimited number of participants; These courses do not put a limit on the level of knowledge and early professional training for participation; All training takes place online, synchronously or asynchronously, without face-to-face meetings. The format of traditional and distance learning is supported;

Different models of mass open online courses are presented in Table 1 [5].

Table 1. Models of mass open online courses

<b>Cognitive behavioral theory</b>	<b>Social constructivist theory</b>	<b>Connectivist theory</b>
<i>Each of the participants separately</i>	<i>Groups</i>	<i>Communities / Networks</i>
Individual interactions; Personalized approach; Knowledge is acquired through a training program developed by experts, the learning process is strictly controlled by teachers.	Social, collaborative interactions; Contextual approach; Knowledge is acquired in the process of socialization, through the exchange of individual experiences, taking into account several points of view.	Network interactions; Adaptive approach; Sources of knowledge are instantly placed and redistributed through established connections in the Internet network.

<i>Pedagogy</i> The teacher controls the level of students ' autonomy; The content of the training and its direction is determined by the teacher; The complex structure of the course and the controlled learning process on the part of the teacher; The low level of autonomy of students, their independence.	<i>Andragogy</i> Independent learning; The student determines the content of the training and its trajectory with the teacher, who provides guidance and support; Emphasis on the acquisition of competencies and the development of skills.	<i>Eutagogy</i> Self-study; The student fully determines the goals and direction of the learning process; Emphasis on developing critical thinking, and learning how to learn.
<i>xMOOC Model</i> Based on the training content; Interaction one teacher - many students	<i>Hybrid model</i> Group interaction, project work, communicative orientation of the learning process.	<i>cMOOC Model</i> Based on a network of interactions; Interaction between students; Self-organized network training.

When choosing a certain approach to teaching, the teacher should not only choose the optimal strategy, but also pay attention to the technical means of teaching, the equipment of both the educational institution and the places of residence of the students. In addition, the compatibility of the software and the devices themselves plays a special role. One of the main problems of modern education in general and distance learning in a virtual environment is the choice of a technical device available to each of the students. Digital pedagogy also considers the issue of equipping with technical means and Internet access (English: homework gap). When studying this issue, we can come to the following conclusions [6]: Not all teachers can say that they are very comfortable using technology to facilitate student collaboration, integrate mobile devices into learning, or differentiate learning using digital tools; It should be noted that teachers who adhere to the traditional approach to teaching do not find it necessary to work with teaching methods based on the active use of educational technologies; Teachers with little experience need guidance on how to utilize modern educational technologies. Moreover, each of the teachers must develop a new strategy for working in the classroom;

Each of the participants in the educational process believes that the effective use of technology is important for the future of any education system.

According to the information document of the national educational non-profit organization "Project Tomorrow", three conditions can be identified that contribute to the way teachers apply various types of educational technologies in the educational process [6]: 1) Most likely, teachers were introduced to technology as a means for entertainment and personal use of social networks. This experience has an impact on

personal beliefs about the use of technology in the classroom. 2) Most professional development guides focus on the use of various technology tools, how they should be used, rather than helping teachers integrate digital content and resources into their curricula. This discourages teachers from making their own value propositions related to the use of technology beyond compliance, thereby going beyond traditional teaching. 3) Many educational institutions focus entirely on the implementation process, rather than on retraining the teaching staff. Each specialist needs more time to thoroughly master the tools of digital learning.

By choosing a learning strategy and taking into account the advantages and disadvantages of using educational technologies in the educational process, the teacher can choose one of several approaches to teaching. Within the framework of digital pedagogy, the following topics are considered: personalized learning, adaptive learning, and blended learning.

Personalized learning refers to the learning paradigm, which is aimed at promoting the individual development of students, thus teaching methods, techniques, content, starting points, evaluation methods, should correspond to the individual characteristics and potential of each of them [7]. The student can independently choose the content of the lesson, make a training schedule and participate in the preparation of individual tasks.

In adaptive learning, the teacher is primarily guided by the result of those technologies that help him to assess the progress of students. In this case, the teacher uses the data to make changes to the learning process at any time [7]. The approach of adaptive learning is based on the experience of the student, the learning process itself changes depending on his performance and the manifestation of motivation in relation to certain course materials.

The most appropriate approach for a teacher from the point of view of digital pedagogy, including the above aspects, can be considered mixed learning, which combines traditional classes in an educational institution and distance learning. Since distance learning takes place in a virtual learning environment, the teacher can also use appropriate elements of personalized and adaptive approaches.

Taking into account the positive and negative aspects of online learning using a mixed approach, classes and their organization can take place on the principle of an inverted class. The inverted class is the principle of teaching a mixed approach, in which classes are planned to alternate in the traditional and remote format during the regular and after-school hours. The stages of distance learning are carried out with the help of training videos in the format of lectures and training tasks, which have a practical orientation and are conducted in the educational institution as well as laboratory classes. The whole process can be built into the web environment.

#### Literature:

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