IMPLEMENTATION OF "FLIPPED LEARNING" TECHNOLOGY IN HIGHER EDUCATION WORK PRACTICE

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Abstract. *Flipped learning is an innovative educational model gaining traction in higher education, promoting active student engagement through a blend of independent and interactive learning. Originating from Sal Khan's educational videos and refined by J. Bergmann and A. Sams, this approach shifts theoretical content to self-paced, at-home study via video lectures, enabling classroom time for discussions, practical activities, and skill application. This model enhances student motivation, critical thinking, and adaptability while addressing challenges like teacher preparation and student unfamiliarity. By integrating technology and interactive phases, flipped learning fosters personalized learning, collaborative environments, and improved educational outcomes in higher education.*

Keywords: "*Flipped learning" technology, higher education, work practice*

Today higher education desires new innovative approaches, pedagogical technologies and new learning models. One of such technologies that is beginning to be actively used in higher education is flipped learning. The originator of this technology is Sal Khan, who in 2005, as a hedge fund analyst, created a program and video instructions for completing math problems to help cousins with distance learning. His exercises became very popular on YouTube with many users, including Bill Gates. In 2007 this principle of building educational programs was adapted by science teachers (J. Bergmann, A. Sams) and offered to students of the Woodland School in the state of Colorado (USA). These teachers offered short video podcasts of lecture material for students to watch at home. The lessons themselves were devoted to laboratory work and to answering to students' questions. According to a study by the Center for Digital Education and Sonic Foundry among members of the online community Educational Exchange (Center for Digital Education), half of American university teachers already use Flipped Learning in classes.

The problem of implementing the technology of "Flipped learning" in higher education is being studied in the works of such domestic scientists as M. Kademiya, O. Kuzminska, S. Popadyuk, M. Skurativska, N. Prykhodkina, K. Yalova, K. Yashina, and others. Among the foreign studies of this problem, the scientific works of such researchers as J. Bergmann, A. Sams, A. Roehl, L. Reddy, G. Shannon, H. Marshall and others stand out.

Results and their discussion. The "Flipped learning" model is a type of blended learning technology. The basis of the "Flipped learning" model consists of two concepts:

1) psychological concept: due to the visualization of the content, it is possible to learn the educational material better and remember it for longer

2) pedagogical concept: it is more effective to spend classroom time for the implementation of active cognitive activities through discussions, solving practical tasks, consolidating theoretical knowledge, reproducing tasks by example, etc. [5, p. 328].

This technology involves the transfer of learning theoretical educational material to the independent work of students outside the classroom by means of the informational technologies. "Inverted learning" involves the integration of traditional forms of learning with elements of distance learning. Blended learning combines various learning activities, namely: face-to-face learning, online e-learning and self-learning (e-courses, practical learning, work on specific projects, use of e-books, mobile learning, coaching, educational games and simulations, etc.). In addition to

that, the technology of "flipped learning" refers to the technologies of intensive learning. The model of " flipped learning" helps to increase the volume and speed of assimilation of the material by the students with minimal expenditure of efforts of pedagogical personnel; activation of students' activities, their psychological reserves, etc. Such changes in the educational process cause its intensification and the achievement of maximum efficiency in a short educational time. Therefore, the technology of " flipped learning" contributes to the optimization of learning in higher education, and is based on such ideas as active learning, involving students in joint activities, and a combined learning system. The essence of this technology is that students independently familiarize themselves with new material at home based on video lectures and presentations. The following classroom work involves discussion of problematic issues, consolidation of theoretical knowledge and development of practical skills, assessment of mastering of new material, etc. The use of videos and pre-recorded media allows students to determine their own pace of learning, develop individual strategies for working with educational material. As noted by T. Tsegelnyk and Yu. Silenko, the flipped class technology is easy to use. However, although the idea is simple, it requires careful preparation. Recording and editing lectures requires effort and time on the part of teachers, additional materials must be integrated to implement the learning model, and students must be motivated to perceive new learning content this way. Students are given the task of watching certain videos from Internet resources, as the teacher, meanwhile, organizes an active discussion of the received information in class [4, p. 392]. As goes for any educational technology, " flipped learning" is characterized by its algorithmicity and a certain order of educational actions. M. Kademiya describes the stages of implementing the technology of flipped learning: in educational institutions that have a corporate network with access to the Internet educational portals are created to host electronic educational and methodological complexes (such as video lectures, laboratory works, practical and seminar classes with the content of relevant materials, monitoring block of students' knowledge, etc.). Then each student gets the opportunity to repeatedly review educational materials, as well as to carry out individual independent work in the digital environment. The teacher monitors and corrects students' actions, checks their tests. The interactive nature of studying the educational material is ensured by the interaction of students with teachers, and students with students. It is very important that the work is being done both short-term and long-term on separate topics, especially integrating from several disciplines. This enables the teacher to select and implement projects for specific professional activities, based on real-life situations [1, p. 147-149]. Therefore, the technology of " flipped learning" involves a collective and personally significant solution of educational and professional problems of each participant in the educational process. This process begins with independent viewing of video lectures by students, discussion of the main issues in the classroom during seminar classes and ends with control and correction of students' knowledge by teachers.

O. Kuzmynska singles out four phases in the process of "flipped learning" education organization:

1. *Experience*. The cycle begins with the involvement of students in experimental activities, actualization of existing experience, motivation to research a specific subject area and reconstruction of one's own knowledge and experience, establishing connections with real life, determining the practical significance of expected results, goal setting, etc.

2. *Research*. During the implementation of this phase, students investigate questions or look for ways to solve certain problems in experimental activities.

3. *Awareness of the result*. The purpose of this phase is students' reflection on their activities and results obtained during the implementation of the previous stages. This phase is the realization of test results and learning and analysis of materials from experts.

4. *Demonstration and application*. At this stage, students demonstrate the results of their studies in an attractive for them form (Kuzmynska, 2016: 88-89). Thus, O. Kuzmynska have made a psychological analysis of the "inverted learning" technology, and identified its phases, which involve motivation, goal-setting of students' activities, their involvement in the study of specific problems, awareness of the results of their own work based on reflection and their presentation. J.

Bergmann and A. Sams detail the structure of a classroom session using the "inverted learning" technology and offer the following components: "warm-up" (introduction to the topic, 5 minutes), questions about the video (10 minutes), independent practical work (75 minutes) [6, p. 15]. Thus, scientists distinguish three main stages of "flipped learning". They are based on the actualization of students' knowledge, problematic questions and clarification of the main theoretical provisions, practical activities. The last stage is the largest and involves the cooperation of students and the practical application of the acquired knowledge.

We agree with N. Prykhodkina that there is no single model of "flipped learning". This term is widely used to describe the structure of almost any classes, which are based on watching pre-recorded lectures followed by their discussion directly in the audience [3, p.143]. However, for the effective implementation of "inverted learning" certain cycles (phases) are used, among which stands out the phase of watching an educational video; phase of interactive work; phase of awareness of the result; feedback phase, etc. Each stage requires activity of not only students, but also teachers regarding the development of additional educational or control-measuring materials for classes.

"Flipped learning" as a modern technology shows both positive and some negative aspects in the process of its application. H. Marshall believes that the advantages of using "inverted learning" are, firstly, that it contributes to a better understanding of the material, increases interactivity of teacher with other students, develops critical thinking and makes it a natural part of the learning process. Secondly, when using this learning technology, classroom time is spent more rationally and effectively [8]. Scientists are united in their views on innovativeness and the need to use "inverted learning" as a technology of intensive learning in the practice of higher education.

A. Roehl, L. Reddy, G. Shannon highlight the low readiness of students to review materials developed by teachers among the shortcomings and difficulties of implementing the technology of "inverted learning" into the practice of higher education; unfamiliarity of students with such a technology of preparation for lectures, the need for adaptation to it; the low technical training and lack of IT education of the teachers, which prevents the high-quality designs and presentation of the developed lectures [7]. We believe that the above-mentioned shortcomings are easily solved in the long term, namely: the readiness of students to review materials depends mostly on the quality and availability of the material presented, and the constantly growing computer and information literacy contributes to the improvement of these indicators; similarly, the repeated use of the technology of "inverted learning" contributes to the adaptation of students to it and the improvement of computer literacy of teachers. The student community acquires the skills of independent work and planning their time only by the fourth year of study. According to this, only by the end of the institution of higher education, the student of higher education becomes the most prepared to be included in the model of "inverted learning". The level of awareness of the model of "inverted education" among teachers is quite low, and they rarely try to apply it in practice. The number of obstacles in the implementation of this innovation also includes the lack of time for the teaching staff to prepare lecture materials in the format of video lectures and the need for technical support for "flipped learning".

Conclusions. So, "flipped learning" is a modern technology based on the ideas of active learning, involving students in joint activities, and is a combined learning system. The essence of this technology is the independent familiarization of students with new material at home on the basis of video lectures, presentations, and in the process of classroom work there is a discussion of problematic issues, consolidation of theoretical knowledge and development of practical skills. Such work allows students to develop their own learning pace, create individual strategies for working with educational material, check-up their knowledge individually and interact with each other in an interactive mode. Certain cycles (phases) are used for the effective implementation of "inverted learning", among which the phase of watching an educational video; phase of interactive work; phase of awareness of the result; feedback phase, etc. Each stage requires the active activity of not only students, but also teachers regarding the development of additional educational or control-measuring materials for classes.

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