

HOW CAN BE USED BLENDED LEARNING
TECHNOLOGY IN MATH

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Abstract. *Here, was seen 'Blended learning' as one of the perspective models of education that allowed the introduction of modern technology into the learning process, making the process of learning more efficient without abandoning the traditional teaching methods that have been tested in time, as well as increasing students' interest in the process of learning.*

Key words. *Material, education, learning, process, student, teacher, teach, flipped, model, classroom, independent, work, depend, system.*

Today, blended learning is becoming one of the perspective models of education that allows the introduction of modern technologies into the educational process, making the educational process more effective, without abandoning the traditional methods of teaching that have been tested by time, as well as increasing students' interest in the educational process.

'Blended learning' includes:

- information system used to create, maintain, assemble and or deliver educational content-independent work of students in and beyond the audience using the educational management system LMS (Learning Management System);
- variety of educational and methodological materials;

- interactivity;
- archiving and monitoring of students' independent work;
- flexible system for assessing students' achievements.

We know from a list of scientist's works that there are 6 different models of blended learning, and the teacher has to choose the most appropriate one.

Face-to-Face Driver - improving traditional education with a computer tool. In this case, the teacher teaches theoretical material. Students complete learning assignments on computers when needed in practical exercises.

The Rotation Model (rotation model) is a stand - alone online education with full-time education in a traditional audience.

Flex Model (flexible model) - mainly based on the Independent Education of the student in the online system. The teacher works with students individually or in small groups, depending on the need.

Online Lab (online laboratory) model - the training course is organized in the classroom in full online mode. It is compatible with traditional education only in terms of the schedule of training sessions.

Self-Blend Model (model 'mix yourself') - the student chooses which courses to study in an online system.

Online Driver Model-most classes are organized in an online system. As required or periodically, control training sessions may be organized.

Another model of blended learning is 'Flipped learning', which seeks to change the traditional teaching process and change the purpose of classroom work with homework [1].

The authors of flipped learning technology are chemistry teachers Aaron Sams and Jonathan Bergmann (USA). In 2008, they began to write their lectures in the form of video and offer their students to do their homework. In their book 'Flip Your Classroom. Reach Every Student in Every Class Every Day' (Flip Your Classroom. Reach Every Student in Every Class Every Day), they describe the features of this technology and its potential [2]. In 2010,

Clintondale High School in Detroit, USA, became the first ‘Flipped Classroom’, fully adopting the principles of flipped learning technology.

Based on this approach, students independently study the content of educational information (department, module, topic) at home, watch video lectures or video comments, and then, with the support and support of the teacher, the material studied in the training session is discussed and used to carry out practical tasks and analyze the information received. In fact, whatever is done at home is done in the classroom with this technology and vice versa.

‘Flipped learning’ has some similarities to ‘advanced independent work’, where students learn new material before the teacher presents it in a lecture or practical class. The main difference is that in ‘advanced’ independent work, the student independently carries out cognitive-search or creative activities outside the audience, while in flipped learning the student learns new material using computer technology, and the teacher virtual manages this process (video recording, control questions) [2].

There are different ways to implement flipped learning, but they all rely on one basic principle: direct instruction takes place outside the classroom, while practice and application take place in the classroom. In this way, students, under the guidance of the teacher, perform tasks in the classroom that require more complex cognitive activity. In this case, the task facing the teacher in the training session is not to describe the content of the topic, but to direct the student to its main or difficult aspects and activate the process of his practical cognitive activity [2].

There are several reasons to use flipped learning. First, it helps students better understand the material, improves interaction with the teacher and other students, develops critical thinking, and makes it a natural part of the learning process [3]. Secondly, the time of the audience is used wisely when using this model.

To effectively implement flipped learning, a certain periodicity is used: learning video, interactive classroom work, observation - feedback - assessment [2]. Each stage requires the development of additional teaching and control materials.

To prepare for a lesson, students watch their video lessons at home at a convenient time to see teachers' comments or questions and explanations in the textbook. During the training session, the teacher will provide practical assignments and necessary additional materials. During the task, students work individually, in pairs, or in groups, while the teacher monitors the students' activities, identifies the main difficulties in mastering the material, explains difficult points, and evaluates the students' work.

Often, video lessons play a key role in flipped learning, but this is not mandatory, as the main goal of flipped learning is to effectively help students develop various skills. Video tutorials are the most attractive part of this learning model, but the teacher can recommend students to use other methods of searching for knowledge: viewing websites, searching for information on the topic, filling out a questionnaire, creating a presentation, using loaded ready-made materials on the platform, etc. For example, in pharm and biology, we know that math has to be given in simple way, thus in the topic of function teacher can give for student model of function like this task: 'Let's say a patient is given 100 mg of a drug, and the drug has a half-life such that 10% of the drug is eliminated every hour'. Pharmacists use this function and can determine when to give the patient the next dose of the drug.

In other words, in this approach, the student is at the center of the training: assignments in the auditorium are aimed at identifying problem areas in the application of knowledge received at home and mastering the material, the student is given the opportunity to delve deeper into the issues being studied and master complex material with the support of the teacher. The responsibility for learning is shifted from the teacher to the student: students can control the

process of mastering the material, its speed, and the process of evaluating the results, that is, they complete the learning process themselves.

The concept of 'flipped learning' is not synonymous with the concept of online 'video learning'. Particular importance is attached to the content of the tasks proposed in the process of interaction and live communication of the teacher and student in this technology. Flipped learning does not mean replacing the teacher with video technology, nor is it distance learning, nor does it mean that students constantly work on computers in the classroom or that they are isolated from the learning process [4,5].

Advantages of flipped learning technology:

1. Individual approach and feedback.
2. See how many times a student needs auxiliary material able to.
3. In the training session, all difficult questions are considered.
4. The teacher can organize their educational activities, giving a task for all students in the auditorium.
5. Study hours are separated together to carry out practical work (laboratory work, seminars, etc.).
6. The 'flipped learning' model can be applied to all types of continuing education [5,6].

Thus, 'flipped learning' is a learning model in which a student-centered approach prevails, and the interaction between the student and the teacher is significantly enhanced. In this case, the teacher acts as a mediator of the learning process, and the student acts as a person responsible for the learning outcomes of the process, using an active-constructive approach [7].

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