PEDAGOGICAL POSSIBILITIES OF BLENDED LEARNING MODELS IN THE MODERN EDUCATION SYSTEM

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Abstract: *This article analyzes the theoretical foundations of the blended learning model, which is widely used in the modern education system, and its pedagogical significance. As a result of the rapid development of information and communication technologies, the integration of traditional education and distance learning is forming new educational approaches. The article highlights the content of blended learning, its role and effectiveness in the educational process. It also analyzes the specific aspects and didactic possibilities of blended learning models such as the Rotation model, Flex model, Face-to-Face driver model, Online Labs, Self-blend model and Flipped Classroom. The research substantiates the importance of the blended learning model in developing students' independent thinking, individualizing the learning process and increasing educational efficiency. As a result, it is scientifically substantiated that blended learning serves to improve the quality of education as an innovative pedagogical approach in a modern educational environment.*

Keywords *: Blended learning, digital education, pedagogical technologies, distance learning, interactive learning, flipped classroom, rotation model, flex model, innovative education, educational effectiveness.*

ZAMONAVIY TA'LIM TIZIMIDA ARALASHTIRILGAN TA'LIM (BLENDED LEARNING) MODELLARINING PEDAGOGIK IMKONIYATLARI

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Annotatsiya: *Ushbu maqolada zamonaviy ta'lim tizimida keng qo'llanilayotgan aralashtirilgan ta'lim (blended learning) modelining nazariy asoslari va uning pedagogik ahamiyati tahlil qilinadi. Axborot-kommunikatsiya texnologiyalarining jadal rivojlanishi natijasida an'anaviy ta'lim va masofaviy ta'lim integratsiyasi yangi ta'lim yondashuvlarini shakllantirmoqda. Maqolada aralashtirilgan ta'limning mazmuni, uning ta'lim jarayonidagi o'rni hamda samaradorligi yoritilgan. Shuningdek, Rotation model, Flex model, Face-to-Face driver model, Online Labs, Self-blend model va Flipped Classroom kabi aralashtirilgan ta'lim modellarining o'ziga xos jihatlari va didaktik imkoniyatlari tahlil qilinadi. Tadqiqot jarayonida aralashtirilgan ta'lim modelining talabalarning mustaqil fikrlashini rivojlantirish, o'quv jarayonini individuallashtirish hamda ta'lim samaradorligini oshirishdagi ahamiyati*

asoslab berilgan. Natijada aralashtirilgan ta'lim zamonaviy ta'lim muhitida innovatsion pedagogik yondashuv sifatida ta'lim sifatini oshirishga xizmat qilishi ilmiy jihatdan asoslab beriladi.

Kalit so'zlar: *Aralashtirilgan ta'lim, blended learning, raqamli ta'lim, pedagogik texnologiyalar, masofaviy ta'lim, interaktiv ta'lim, flipped classroom, rotation model, flex model, innovatsion ta'lim, ta'lim samaradorligi.*

ПЕДАГОГИЧЕСКИЕ ВОЗМОЖНОСТИ МОДЕЛЕЙ СМЕШАННОГО ОБУЧЕНИЯ В СОВРЕМЕННОЙ СИСТЕМЕ ОБРАЗОВАНИЯ

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Аннотация: *В данной статье анализируются теоретические основы модели смешанного обучения, широко используемой в современной системе образования, и ее педагогическое значение. В результате стремительного развития информационно-коммуникационных технологий интеграция традиционного образования и дистанционного обучения формирует новые образовательные подходы. В статье освещается содержание смешанного обучения, его роль и эффективность в образовательном процессе. Также анализируются специфические аспекты и дидактические возможности моделей смешанного обучения, таких как ротационная модель, гибкая модель, модель очного обучения, онлайн-лаборатории, модель самообучения и перевернутый класс. Исследование обосновывает важность модели смешанного обучения в развитии самостоятельного мышления студентов, индивидуализации учебного процесса и повышении эффективности образования. В результате научно обосновано, что смешанное обучение служит улучшению качества образования как инновационный педагогический подход в современной образовательной среде.*

Ключевые слова: *смешанное обучение, цифровое образование, педагогические технологии, дистанционное обучение, интерактивное обучение, перевернутый класс, ротационная модель, гибкая модель, инновационное образование, эффективность образования.*

In the current era of globalization and the rapid development of digital technologies, fundamental changes are also taking place in the education system. The widespread introduction of information and communication technologies has expanded the possibilities for modernizing the educational process, improving the quality of education, and effectively organizing the learning process. In this process, along with traditional forms of education, there is a growing need for new educational models based on modern pedagogical

technologies. The blended learning model, which is considered one of the modern pedagogical approaches, is based on the integration of traditional face-to-face education with distance or online education. This model allows organizing the educational process in a more flexible, effective, and interactive way. Through blended learning, students have the opportunity to independently study educational materials, consolidate their knowledge, and effectively use educational resources with the help of modern technologies. Therefore, the blended learning model is considered an important pedagogical innovation in the modern education system. This article analyzes the theoretical foundations of blended learning, the characteristics of its main models, and its didactic possibilities in the educational process.

The introduction of modern technologies into education has changed the processes and models of education. Mail, radio, television, telephone and the Internet are the main information carriers. The use of these technologies in the educational process has always yielded positive results. The above technologies have expanded the boundaries of education and created the opportunity for people living at a distance to receive education. The development of computer technologies has led to the emergence of the term "electronic learning" in the educational process. The combined use of computer technologies in education has further increased the opportunities for organizing the relationship between the teacher and the student in the educational process using various modern devices, conducting lessons using electronic means, and students to master lessons and educational materials at a time convenient for them. By adapting basic eLearning to traditional classrooms or adding lectures and labs to an online environment, education has been blended with modern technology, a process known as blended learning.

In the research literature, the terms "blended learning", "hybrid learning", "technology-mediated instruction", "Web-enhanced instruction" and "mixed-mode instruction" are often used interchangeably. Although the basic concepts of blended learning first emerged in the 1960s, it was defined in various ways until the late 1990s. The term was first used in an article entitled EPIC Learning in the Atlanta-based Journal of Interactive Learning Centers for Education in 1999. In 2006, the term was more clearly defined in the first handbook "Blended Learning" by American scholars C. Bonk and C. Graham. C. Graham, emphasizing the broadness and vagueness of the definition of the term, defined "blended learning systems" as a learning process carried out using educational systems that "combine face-to-face learning with computer-assisted learning." [V16] The modernization of manufacturing enterprises has increased the demand for employees who can use new technologies and are interested in innovation. In the period of development, no enterprise wants to lag behind its competitors, therefore, currently there is a great demand in the world market for personnel trained on the basis of "blended learning", which has become a model of education, because personnel trained on the basis of this model can independently use computer technologies, and considering their ability to work independently and collaboratively, the enterprise is considered a good personnel for the organization. This educational model is based on the concept of student independent learning and achievement, while in traditional classes,

students are taught more, and in the process of independent learning, the student does not have enough motivation and competence to work on his own.

Blended learning is an educational approach that combines online learning materials and online classes with traditional methods.[V16]

Blended learning is a modern educational technology, which is based on the concept of combining classroom lessons, information and communication technologies and electronic technologies based on modern teaching aids. In such an educational environment, it is difficult to achieve the desired result by providing students with ready-made materials. Several models have been developed to organize and work with blended learning, including: Rotation model, Flex model, Flipped Classroom model, Enriched Virtual model, Standard Inverted Classroom, Micro Flipped Classroom, Discussion-Oriented Flipped Classroom, Demonstration-Based Flipped Classroom, Faux-Flipped Classroom, Group-Based Flipped Classroom, Virtual Flipped Classroom, Role-Revals 2.0(Flipping The Teacher) [V15], Face-to-Face driver, Online Labs, Self-blend, Online driver [V16, V17].

Rotation model . In this model traditional in the classrooms lesson schedule based on lesson in the process students teacher with face to face communication as studies , group become exercises to do and independent online reading it is possible , this students table based on movements need will be .
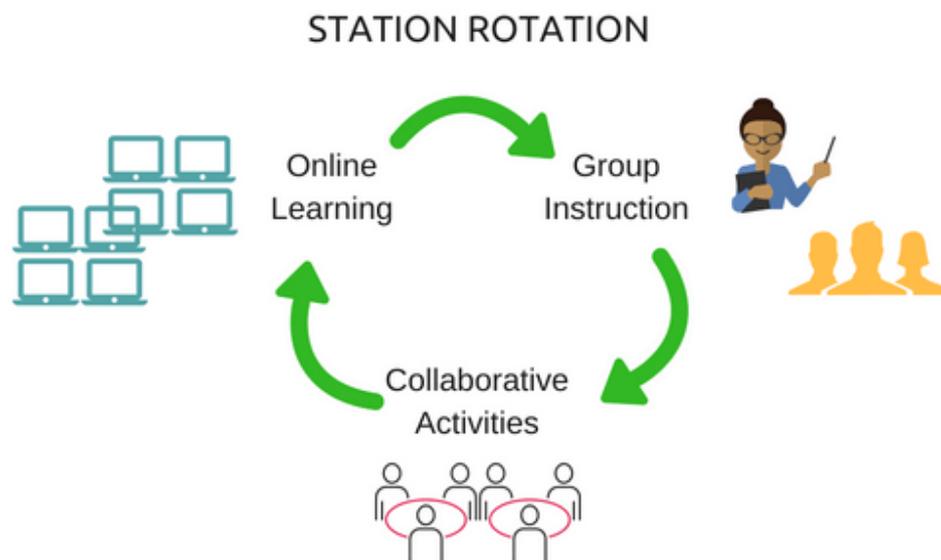

Figure 28. Rotation model or alternating current model)

Rotation model (rotational or alternating model) working process. [V15] Rotation model is also divided into: Lab Rotation and Individual Rotation based on the lesson process.
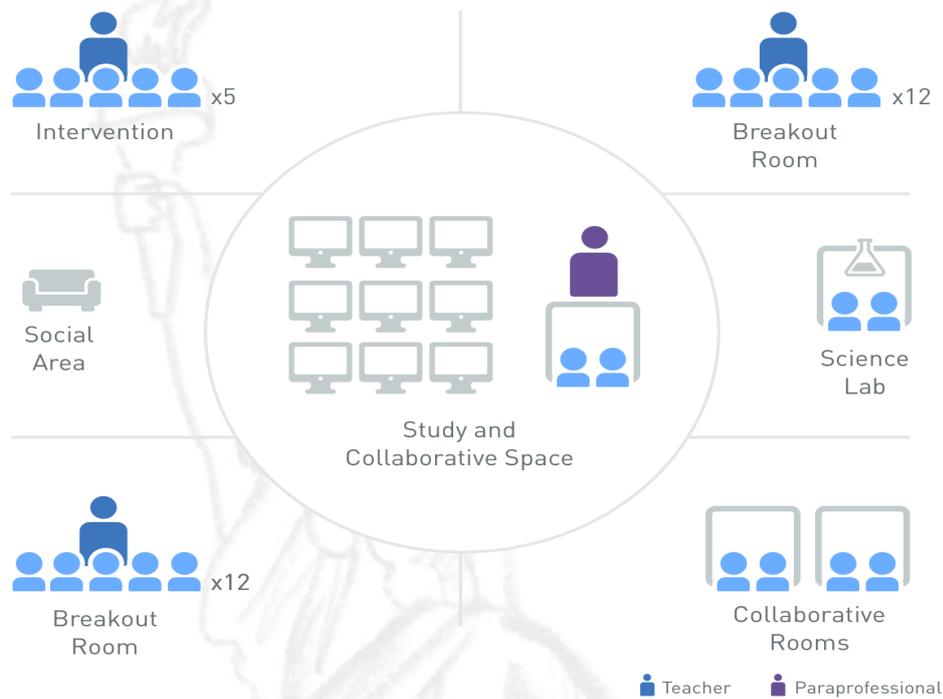
Figure 29. Flex model .

Flex (flexible) model. The model is designed primarily for teaching students who are learning online, focusing on face-to-face and independent learning for students. All information and lessons are delivered to students online, and the teacher guides them and monitors the results of the students. Lessons can be organized in various formats, creating small groups online, and conducting a certain part of the lesson in the classroom based on individual and student needs. This model can also be a starting point for switching to online classes. The advantage is that students can accumulate the necessary points and work more on themselves and consolidate their knowledge. Compared to traditional schools, costs are somewhat reduced, but this model requires a lot of technical equipment and specialists to organize.

Face-to-Face driver model. Traditional schools will require the use of additional online materials to conduct regular classes with students, and students will be required to complete assigned classwork and lab work online.

Figure 30. Online Labs.

Online Labs. All curriculum is delivered through a digital platform, but students take traditional classes in this model.

Self-Blend model. After completing school classes, students are offered to choose one of the distance learning courses that suits them. The advantage is that students can choose the areas they consider necessary for themselves based on the knowledge they have acquired and their interests. Most students take advantage of this opportunity, as they choose them to study courses or topics that are not offered by the school due to lack of funds, students' interest or lack of time. In addition, students who have dropped out can resume their studies, accumulate credit points, save money for the student and school management, increase their level of work with computer technology, and continuously improve their skills. The disadvantage is that separate consultations are not provided for these courses.

Figure 31. Flipped Classroom

Flipped Classroom model. The materials to be completed in the model classroom are delivered to students in advance online, and students prepare for the lesson by studying the
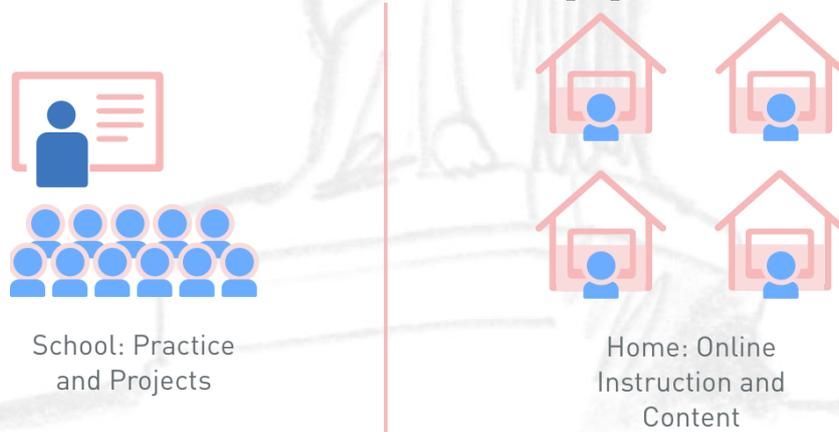
materials. During the lesson, the teacher monitors the level of mastery of the topic based on the questions asked by the students, fills in their shortcomings, and helps them understand the topic more broadly. In order for students to study independently, it is necessary to interest them in the topic with various examples, make them feel enthusiastic about the results they have achieved, expand their thoughts, and increase their self-confidence. Information is provided to students using podcast, vodcast, and prevodcast methods. The materials provided should give the student an understanding of the new topic and, most importantly, should arouse some questions in the students in order to organize a lively discussion during the lesson, that is, video lectures should be short and understandable. When preparing the materials, it is also possible to use videos or other sources available on the Internet. In addition to individual learning, students are divided into groups and given separate tasks for each group. They can also get answers to simple questions of interest by working on the tasks and communicating with each other. In traditional lectures, we are always used to getting "yes" or "no" answers from students. It requires preparing students for the lecture and delivering the necessary information in an interesting way. When using this model, the teacher may initially encounter many obstacles. For each lesson, he will have to collect video materials, create questions and tests, and work more with modern information technology tools. These obstacles will be more for the first year, but for the next year, the teacher will have some conveniences.

In 2019, 38 percent of faculty members used a blended or hybrid learning model, in addition to face-to-face learning.

In conclusion, the blended learning model is becoming an important component of the modern education system. This model serves to increase the effectiveness of the educational process by combining traditional teaching methods with modern information and communication technologies. Blended learning develops students' independent learning skills, makes the educational process flexible and interactive, and creates the opportunity for in-depth assimilation of knowledge. This model also helps to strengthen cooperation between teachers and students, effectively use educational resources, and form digital competencies. Therefore, the widespread introduction of blended learning models in a modern educational environment is of great importance in improving the quality of education and developing innovative pedagogical approaches.

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