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THE BLENDED LEARNING IN HIGHER EDUCATION

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Abstract

In the article, the author defines the possibility of integrating modern learning technologies in the conditions of digitalization of higher education. Blended learning in the preparation of university students includes a combination of mobile learning, e-learning, distance learning, and mass open courses. The prospects of implementing the most common models of blended learning are considered. The use of digital learning technologies with the inclusion of modern approaches in training: project training, team building, case studies allows you to get a synergistic effect in the preparation of a modern specialist. In the Russian Federation, the process of digitalization of education is being activated as part of the implementation of the state program "development of education". Teachers of the higher education system of Russian universities are actively involved in the process of integrating e-learning technologies in courses of disciplines. The article presents the experience of implementing models of blended learning in the electronic educational environment of higher education institutions. There is an increase in the involvement and motivation of students during the course of the discipline using a blended approach to learning. The advantages, difficulties and key performance criteria of each blended learning model presented in the study are identified. The role of mobile learning for the modern generation of university students and teachers is defined, the advantages of mobile learning in the implementation of blended models in the electronic educational environment of universities are presented.

Keywords: Blended learning electronic educational environment, mobile learning, mass open online courses, project learning, team building.

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1. Introduction

In modern conditions of spreading negative consequences of globalization, educational institutions are faced with the problem of activating e-learning resources. As Zinina et al. (2020) mentioned: “At the present stage, the leading countries of the world attach special importance to education in the formation and accumulation of human capital” (p. 102). All levels of the educational system in Russia have switched to distance learning. This forced measure has set serious challenges for every teacher who is faced with the need to implement the educational process in remote mode. Most institutions involved in the process of education digitalization in the framework of the state program in the Russian Federation "Development of education", approved by decree of the Russian Federation government from December 26, 2017 № 1642 "About approval of the state program in the Russian Federation "Development of education" and the order implementation form the Ministry of education in the Russian Federation of December 2, 2019 № 649 “About target model approval of a digital educational environment”. The modern educational environment is being transformed into an electronic educational environment and promotes unlimited access to knowledge, its use and accumulation (Belyakova et al., 2019).

Teachers of the higher education system develop and implement digital learning technologies - LMS Moodle, MOOC, m-learning - in the educational process. As Zinina et al. (2020) concluded: “Innovations in an educational institution based on distance learning technologies are a key mechanism that allows creating advantages in a competitive environment” (p. 55). When preparing e-courses of disciplines, teachers adhere to the established rules for the using e-learning, distance learning technologies by organizations engaged in educational activities in the implementation of basic educational programs and / or additional educational programs. As Kapsargina and Olentsova (2020) think: “The introduction of information and communication technologies (ICT), including those implemented on the basis of electronic platforms, in the field of education has allowed teachers to change qualitatively the content, methods and organizational forms of education, to intensify and individualize the training of students” (p. 89).

2. Problem Statement

The modern generation of students and teachers is ready to use the electronic learning model, because as Kapsargina et al. (2019a) mentioned: “Progressive development of the Internet as a system of shared access gives new opportunities of acquiring knowledge” (p. 361). This makes it possible to optimize and reach a larger number of students, expand access to information, and activate students to participate in communications. There is still a controversy between the three points of view:

1) Teachers who support e-learning and find the advantages of this approach in education. As Khudoley and Olentsova (2018) think: “Students can take part in online discussions and chat sessions with teachers or students, instead of having to attend courses in traditional lecture halls” (p. 225).

2) Teachers who consider the traditional learning model to be the most effective.

3) Teachers who share a point of view about the possibility of an effective combination of digital learning technologies and traditional teaching methods, because as Kapsargina and Olentsova (2019c) think: “Electronic testing has replaced traditional forms of control, which corresponds to the modern concept of modernization and informatization of the Russian educational system” (p. 237).

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3. Research Questions

The presented research raises questions related to the possibility and necessity of implementing blended learning in the training of specialists at the university.

What technologies are most often used in teaching students?

How can we expand the possibilities of using different approaches in training?

What models of blended learning are implemented by university teachers?

What are the advantages and disadvantages of blended learning models?

4. Purpose of the Study

The purpose of the study is to compare models of blended learning, determine their advantages and disadvantages, and present recommendations and models for integrating mobile learning, distance learning, mass open lectures, project learning, team building, and case studies in an electronic environment.

5. Research Methods

5.1. The analysis of possibilities of blended learning

The greatest interest from students and many teachers is mobile learning. The term "mobile learning" (m-learning) refers to the use of mobile and portable IT devices in teaching and learning, such as PDAs (Personal Digital Assistants), mobile phones, laptops, and tablet PCs.

When developing a course using m-learning, keep in mind that it should fit content in a small space, and there is usually no more than one idea per screen. Developing discipline modules for m-learning is a complex task, and Kapsargina and Olentsova (2019b) agree: “It should be recognized that the creation of educational materials that meet modern requirements is a difficult task for their author” (p. 232). The basic rule for creating successful disciplines for m-learning is that understanding the context and duration is crucial. For students and smartphone users, you need to use less time, so to create an m-learning course, you should set the duration of the module to no more than 20 minutes. It is recommended that if each module is less than 15 minutes, it can be considered ideal for use. You can use videos for m-learning with a maximum duration of 3 minutes. It makes sense to create simple content based on the interaction between one and two fingers, with an area large enough for one finger or an adult's thumb (Tynchenko et al., 2019).

M-learning contributes to the successful implementation of the course in LMS Moodle (Golitsyna & Polovnikova, 2011). E-Learning and m-learning are integrated, and in many cases, they are used interchangeably, despite the fact that the two methods of learning differ in many aspects. And as Kapsargina et al. (2020) mentioned: “E-learning environment LMS Moodle allows the teacher to build a diverse and interactive work with the text” (p. 236). Most often, they are presented in a blended curriculum, where m-learning complements the electronic course of the discipline.

Blended Learning is a promising learning system that combines the best aspects and advantages of traditional classroom and interactive electronic learning to create accessible and motivating courses for modern students (Fearon et al., 2011). Innovative technologies "disruptive" technologies that radically change the world of blended learning can increase the effectiveness of training and motivation of university students (Owston et al., 2013). Modern university teachers who share a common point of view about the

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possibility of an effective combination of digital learning technologies and traditional teaching methods develop their own models of blended learning (Golitsyna & Polovnikova, 2011).

5.2. Typology of e-learning in higher education using MOOCs

An additional electronic resource for teaching students using distance learning technologies is MOOC, because as Zinina and Olentsova (2020) mentioned: “The main tasks of the university effectiveness are the using distance learning technologies. They allow organizing the most effective access of people to data in digital form” (p. 57). MOOC can be integrated into the electronic course of the discipline according to the following models (Bruff et al., 2013):

Model 1. "MOOC-discipline support”

Model 2. "Discipline + MOOC”

Model 3. "MOOC + discipline”

Model 4. "Exclusively MOOC".

Key criteria for choosing models using MOOC in the process of teaching university students:

- regulatory documents that regulate the organization of the educational process with MOOC must be approved:

1. Documented procedure " Development, examination and use of electronic educational programs in the educational process»;

2. Documented procedure "Organization of educational process with the use of massive open online courses»;

3. Standard contract forms for the creation of works that are electronic resources and a usage agreement:

- the working program of the discipline should include modules of the discipline implemented on the MOOC platform;
- defined forms of current and intermediate control when implementing models using MOOC.

5.3. Models of Blended Learning in the electronic educational environment of a university

The use of digital learning technologies with the use of modern approaches in teaching project training, team building, and case studies contributes to improving the effectiveness of teaching students at the university, because as Kapsargina and Olentsova (2019b) think: “The use of information and communication technologies in educational and research processes is an indispensable requirement for the implementation of the modernization concept of higher education in Russia” (p. 235). Integration of modern approaches in the implementation of the educational process in an electronic educational environment can be implemented using the following models of Blended Learning.

Model 1. Blended Learning "LMS Moodle + project learning”, (Table 01)

Model 2. Blended Learning "LMS Moodle + team building”, (Table 02)

Model 3. Blended Learning "LMS Moodle + case study”, (Table 03)

Model 4. Blended Learning "LMS Moodle + project training + team building”, (Table 04).

Model 5. Blended Learning "LMS Moodle + project training + team building + case study", (Table 05).

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Table 01. Model 1. Blended Learning " LMS Moodle + project learning"

Using models for Blended Learning	Advantages of the model	Disadvantages / difficulties of the model	Risks in using this model
Model 1. "LMS Moodle + project training"	In this model, the online course is used as a Supplement to the materials of the full-time discipline. Classes on the subject in an electronic environment complement the traditional format of training, while the teacher recommends students educational materials in LMS Moodle to prepare for classes, perform independent work, as well as additional materials for a more in-depth study of the discipline. Project training helps to increase the motivation of students to be active, to implement skills and knowledge when working together on a project.	To access the lectures of the online course, students must register on the university's e-course website and enroll in a course of discipline in LMS Moodle. Therefore, the first class in LMS Moodle can be held in a computer class, so that the teacher can check whether all students have access to the online course. Manifestation of different degrees of activity and participation in the preparation of the project task.	The university should adopt regulations governing the process of preparing and implementing online learning. This can be recorded in regulatory documents using e-learning and distance technologies.

Key criteria of selection conditions for Model 2. Blended Learning "LMS Moodle + team building":

- in this case, the teacher must first evaluate the content of the course in LMS Moodle in terms of the possibility of using project-based learning in the educational process (Dalsgaard & Godsk, 2007).

Table 02. Blended Learning "LMS Moodle + team building"

Using models for Blended Learning	Advantages of the model	Disadvantages / difficulties of the model	Risks in using this model
Model 2. Blended Learning "LMS Moodle + team building"	In this model, only part of the full-time training, lecture material is transferred to the electronic environment. In the classroom, when working in contact, students are given tasks for team building, and their ability to work in a group is revealed.	To access the online course lectures, students must register on the platform and sign up for LMS Moodle. Therefore, the first lesson can be held in a computer class, so that the teacher checks whether all students have access to the online course. When performing a team building task students do not show activity and interest.	The amount of teacher's contact work may be reduced, since he does not conduct full-time lectures on the discipline. Interpersonal relationships in a group of students are of great importance, which can reduce the effectiveness of team work.

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Key criteria of selection conditions for Model 3. Blended Learning "LMS Moodle + case study":

- in this case, the teacher must first evaluate the content and format of presentation of lectures on the LMS Moodle platform for compliance with the goals and formed competencies, as Rozhkova and Olentsova (2020) mentioned: "Case-study method provides an opportunity to expand this set and go beyond specific disciplines when analyzing the situation" (p. 115);
- assessment of interpersonal relationships in the group, absence of conflicts.

Table 03. Model 3. Blended Learning « LMS Moodle + case study"

Using models for Blended Learning	Advantages of the model	Disadvantages / difficulties of the model	Risks in using this model
Model 3. "LMS Moodle + team building"	In this model, most of the lessons in the discipline are transferred to the online environment. When conducting face-to-face classes, the teacher answers students' questions and helps them deal with complex cases.	Most of the work on the discipline takes place in an electronic environment.	To implement this model, the teacher must prepare a large number of cases on each topic of the discipline. Cases should be aimed at mastering the skills of solving practical problems within the discipline. The situation described in the case may be misunderstood.

Key criteria of selection conditions for Model 4. Blended Learning "LMS Moodle + project training + team building":

- in this case, the cases on the discipline should be selected in accordance with the content of the online course topics;
- it is necessary to consider the different level of perception of cases regarding the cultural characteristics of students.

Table 04. Model 4. Blended Learning "LMS Moodle + project training + team building"

Using models for Blended Learning	Advantages of the model	Disadvantages / difficulties of the model	Risks in using this model
Model 4. Blended Learning "LMS Moodle + project training + team building"	Integrating the advantages of Model 1 and Model 2	High load on students, different planning and variability of tasks.	Students may not be able to cope with project learning tasks and team building tasks. High requirements for the teacher's pedagogical skills.

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Key criteria of selection conditions for Model 5. Blended Learning "LMS Moodle + project training + team building + case study":

- in this case, the teacher needs the ability and experience of using technologies of project training and team building;
- pre-evaluate the content of the discipline course in LMS Moodle in terms of the possibility of using project-based learning in the educational process;
- preliminary assessment of interpersonal relationships in the group, absence of conflicts.

Table 05. Model 5. Blended Learning "LMS Moodle + project training + team building + case study"

Using models for Blended Learning	**Advantages of the model**	**Disadvantages / difficulties of the model**	**Risks in using this model**
Model 5. Blended Learning "LMS Moodle + project training + team building + case study"	Integrating the advantages of Model 1, Model 2 and Model 3.	High level of difficulty in completing tasks. The need to simultaneously perform various tasks. High degree of independence and reduced contact with the teacher	Difficulty concentrating on completing a single task, reducing the quality of the task. Acceptable for students with high creative potential and teamwork skills. High requirements for the teacher's pedagogical skills.

The most effective model is "LMS Moodle + project training + team building + case study". This model can be implemented in practice as follows:

- in this model, most of the lessons in the discipline are transferred to the electronic environment. At the same time, the teacher conducts part of distance classes in an online format, during which he answers students' questions, analyzes difficult moments, and motivates students to complete the course of the discipline;
- replacing most of the lectures in the format of webinars and practical classes in the format of an online conference;
- if most of the discipline, based on the results of monitoring in the electronic educational environment, is not mastered, the exam / test is held in the traditional form.

It is advisable to implement the presented models sequentially. In addition, you can implement blended learning models:

Model 6. Blended Learning "LMS Moodle + project training + case study"

Model 7. Blended Learning "LMS Moodle + team building + case study".

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6. Findings

Blended training on the model 2, 4, 5 allows you to more effectively implement the technology of team building. When training in a team, special attention is paid to "group goals" and the success of the entire group. This can only be achieved as a result of the independent work of each member from the group in constant interaction with other members of the same group when working on a topic / problem / question. The whole group is interested in learning the training information of each member, since the success of the team depends on the contribution of each, as well as in the joint solution of the problem set for the group (Stepanova, 2019).

The possibilities of blended models with the use of mobile learning in higher education are almost unlimited. Mobile devices provide always the access to connect with students. With this connection, you can instantly send quick messages and notifications about new additions to mobile training materials and segments. You can use this link to send reminders to students, for example, about incomplete modules. Integration of digital learning technologies contributes to effective learning using case studies. Mobile devices also allow the student to easily respond to short surveys about the content of a particular course, as well as allow them to make suggestions or report any problems with the performance of the lesson platform (Makarchuk et al., 2013).

7. Conclusion

The article defines the possibilities of using a blended approach to teaching university students. A significant problem for university teachers is the choice of a blended learning model that contributes to improving the quality of education, interest and motivation of students. Requirements for the content of the discipline and the level of using e-courses are increasing.

Blended learning leads to noticeable improvements in performance during the course of the discipline. University teachers note the increased involvement of students when using a comprehensive approach to learning. A comprehensive approach is to constantly improve the course of the discipline, in which subsequent implementations can be based on the successful experience of implementing various models of blended learning.

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