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TRANSFORMATION OF DIDACTIC SPACE OF BLENDED LEARNING AT UNIVERSITY

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Abstract

The article substantiates the relevance of the strategic focus on modern education modernization, specifically, its technological transformation through the combination of traditional and electronic media formats of education in the educational process. Blended learning is the key of the innovative development of higher education; it benefits individual educational trajectory and the formation of universal and professional competencies in the context of digitalization. The necessity of designing a didactic space of blended learning at a university is revealed. The methodological basis of the study is a set of systemic, competency-based and technological approaches, whose leading ideas and specifics enabled to present the main provisions of an integrative didactic learning system in the digital educational environment of a university. The article proposes an organizational and didactic classification of blended learning models in higher education based on the generalization and systematization of theoretical and empirical experience. The classification includes organizational, supportive, didactic and self-developing models. The authors substantiate the approach to the typology of blended learning models that can be implemented at different levels. Based on the study, the requirements for the organization of blended learning, creating new opportunities for transforming the didactic space and solving a set of educational tasks in the conditions of the electronic educational environment of the university, are discussed. It is concluded that it is necessary to determine didactic strategies for the transformation of the educational process at the university, which are a complementary basis for building a polymodal educational process regarding the possibilities of augmented reality.

Keywords: Blended learning, digitalization of education, digital didactics

1. Introduction

Fundamental changes in education focused on the need to introduce digital educational technologies are initiated in the context of global sociocultural transformations (Belogash & Melnichuk, 2020; Gnatyshina et al., 2019; Starichenko, 2020). New electronic media formats of education have determined the relevance of the search for and understanding of the pedagogical possibilities of their effective use in the process of university training (Sergeeva & Sokolova, 2020). At the same time, a harmonious combination of traditional and distance education is recognized as strategically important; blended learning is one of its options (Krasnov et al., 2020). There is no doubt that an important scientific pedagogical task is to develop an organizational and didactic model of the educational process that meets the needs of digitalization and ensures the updating of the mechanisms for harmonization, maintenance and integration of traditional and electronic formats for obtaining knowledge at a university.

2. Problem Statement

A large body of Modern research and personal experience indicate the need to build an open educational environment including a set of resources, conditions and opportunities for learning, development, and manifestation of subjective activity and educational independence of the student (Salavatulina et al., 2021). Blended learning models actualize the pedagogical potential of media education, ensure the formation of an individual educational trajectory, enable to manage learning motivation by creating conditions for mastering the content of education activity and the formation of universal and professional competencies (Pletyago et al., 2019). However, it should be noted that the forced transition to a distance format has led to the problem of inconsistency between the existing training programs for the new digital reality; spontaneously emerging and spontaneously developing digital education paradigms are not always rapidly accepted by Russian pedagogical consciousness. The focus on the formation of online space and the construction of educational networks is replacing the possibilities of blended learning and the didactic aspects of its implementation. The analysis of global transformations indicates the need to transform the didactic space of blended learning at the university.

3. Research Questions

The subject of our scientific research is to identify the most effective models of blended learning and didactic strategies for transforming the educational process at a university, which are a complementary basis for building a multimodal educational process regarding the capabilities of augmented reality.

4. Purpose of the Study

In this article, we suggest to discuss an organizational and didactic typology of blended learning in higher education and the rationale for constructing a didactic space during the transition to blended learning technologies using innovative analogue forms and the capabilities of a digital educational environment.

5. Research Methods

A significant method of this study is the theoretical and methodological analysis of scientific literature, which enabled to come to a scientific understanding of the category "blended learning", to develop foreign and domestic experience of its construction in higher education. The works of American researchers Bonk and Graham (2006), Rooney (2003), Staker and Horn (2012) and Russian scientists Blinov and Sergeev (2021), Glotova (2020), who influenced the reflexive understanding of the basic concept of the study, are worth mentioning.

The methodological strategy and specific scientific tactics of the indicated research was a combination of systemic, competency-based and technological approaches.

The system approach enables to construct an integrative didactic system of education in the conditions of the digital educational environment of the university, which should be dynamic, open but quite autonomous, having its own infrastructure and developing according to its goals and patterns. Moreover, it makes possible to classify blended learning models into organizational, supportive, didactic, self-developing, which give originality to the digital educational environment of modern education in the context of globalization.

From the standpoint of the competency-based approach, the transformation of the didactic space of blended learning creates opportunities for personalizing the educational process based on building an individual educational trajectory, personal and professional development of students, and the formation of universal digital competencies.

The technological approach enables to present a didactic toolkit of blended learning adapted to the typological and individual characteristics of the students and focused on the use of pedagogically justified digital technologies in the educational process.

6. Findings

Based on theoretical approaches and principles of openness, variability, dynamism, it is necessary to formulate the main provisions for constructing a didactic space in the transition to blended learning.

1. Educational goal setting should be based on the didactic capabilities of digital technologies. They are a platform for learning individualization in the main areas (in terms of complexity, content, pace of assimilation, method of presenting educational material), provide a high level of learning motivation and complete mastering of educational material.

2. There is a need for digital integration resulting in a holistic neoplasm, as a consequence of a comprehensive synthesis of the educational process and the digital environment. This can be achieved through the transformation of the educational process into a set of individual educational trajectories, which, on the one hand, are based on the educational needs of the individual, on the other hand, consider the possibility of using distributed forms of the educational process in the educational network.

3. The dominance of the learning process, which involves reliance on educational independence and subjective position in the process of learning and self-education of students. Teaching is considered as the organization and management of this process and is of an auxiliary, supportive nature.

4. The adaptability and flexibility of the blended learning paradigm actualizes the system for diagnosing individual learning styles and strategies, creates the opportunity to vary the quantitative ratio of learning components, determine the level and nature of pedagogical support in the digital educational space.

5. Administrative and information technology support determines the nature of pedagogical interaction, the choice, implementation of forms and methods of work. It involves the creation of an excess resource opportunity for building an individual educational trajectory, and also requires the transformation of controlling assessment into an individual assessment of educational success, personalized recommendations for setting and adjusting the goals of educational activities.

Considering the content of the didactic space, it is advisable to correlate it with the requirements for the organization of blended learning, which create new opportunities for its construction and solution of a complex of educational tasks amidst digitalization.

1. Individualization of the educational environment aimed at the subjective alignment of the content of education, the construction of individual educational trajectories with the possibility of using digital and mixed technologies.

2. The motivational nature of the educational space, which creates opportunities for maintaining sustainable learning motivation for various groups of students at all stages of the educational process.

3. Openness and accessibility of the system, which implies the possibility of augmenting the digital educational environment with innovative technologies and unlimited functionality of all its elements for each user in accordance with educational goals and needs.

4. Interactivity, which ensures multi-subjectivity in the process of communication and interaction, the involvement of students in intense activities, the rational use of time in training sessions.

5. Polymodality, which contributes to the integrated inclusion of all channels of perception into the educational process.

6. Practical orientation creating conditions for reproducing future professional activities through networking, virtual reality tools, digital simulators enabling professional competencies development.

7. Monitoring educational results based on cumulative assessment and automation, which contributes to high-quality learning in the educational network and self-learning in the educational environment.

Summarizing the results of theoretical research and empirical experience, we realized the need to create an organizational and didactic typology of blended learning in higher education (see Table 1).

Table 1. Organizational and didactic models of blended learning

Models	Description of blended learning	Model examples	Advantages
Organizational	Imply the use of online courses in the process of implementing tertiary educational programs. At the organizational and pedagogical level, they provide an individual approach for persons with disabilities, students mastering several educational programs, combining work and study, etc.	Massive open online courses (MOOC), National Open Education Platform, Interscholastic Group	Self-development, individual educational needs fulfillment, mobility, continuity of learning

Supportive	Mastering the educational program in a traditional format with the auxiliary role of a remote component that provides access to electronic resources. It involves the synthesis of various components and is using active methods.	Model of M. Horn and H. Staker, "Face-to-Face", "Rotation", "Flex", "Self-Blend", "Online Driver", model of an electronic educational center, a mixed subject	The use of ICT technologies and active learning methods, the principles of supporting the educational space, learning in various environments and spaces
Didactic	A combination of educational online and offline formats, pedagogical technologies and individual learning styles. Determine the nature of pedagogical interaction, the content of training, activities through discussion, project forms and electronic formats	Integrated multiple model, learning through exploration, flipped classroom, online lab	Flexible nature regarding the specifics of the discipline, integration of the pedagogical and technological components, interactivity
Self-developing	Determine the nature of functioning and interaction in a multimodal environment mediated by interactive ICT technologies. Interdisciplinary, flexible nature of subsystems interacting on a non-linear basis.	Model of the University of the national technology initiative "20.35", Integrated adaptive system CO.	Synergistic effect in the educational process, the content influenced by other subsystems amidst blended learning, constant technologies updating by introducing new learning formats, pedagogical support, students acting as researchers; practice

Thus, the presented classification includes organizational, supportive, didactic, self-developing models identified in accordance with the leading function and compared regarding the multidimensional terminological field of blended learning.

Each of the presented models can be partially adapted to the space of electronic education:

1) part of the content sections of the educational program (mixed curriculum, mixed subject);

2) part of the students (interschool group, online laboratory);

3) part of the didactic and technological stages of the educational process (flipped class, mixed project).

Certainly, some models are combined, mixed in nature, comprising several designated options. However, such a combination is a separate scientific and methodological task.

7. Conclusion

In the course of the study, it was found that the dynamics of the introduction of blended learning at the university is positive, which naturally reflects the modernization of higher education in the context of digitalization.

Blended learning can be considered as an innovative approach only when, in addition to the integration of online and offline formats of educational activities, there is a pedagogically elaborated support for the individual educational trajectory of the student.

Blended learning models undergo both internal changes and qualitative external transformation as part of integrated components, are modified and applied in various combinations. In their implementation, it is extremely important to have levels (plan, subject, occupation, topic/section, technology), the dominant functional feature, structural and content components and design principles.

The transformation of the didactic space of blended learning at the university aims to create interactive polymodal content, the optimal alternation of digital tools and the real educational process, involves the intensification of educational activities in the digital educational environment, stimulates the activity, independence, and professional mobility of all subjects of the educational process.

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