

## Distance learning hybrid format for university students in post-pandemic perspective: Collaborative technologies aspect

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### Abstract

The relevance of the research is determined by the key ideas of the hybrid format of students distance learning and collaborative technologies of its implementation in the post- pandemic perspective of the university educational process. The authors, taking into account the trends of transformations of the educational process of the university in the post-pandemic perspective, reveal the content of the key concepts of the hybrid format of distance learning for students. The priorities of collaborative technologies aimed at supporting the hybrid format of distance learning of university students are determined. Based on the results of the study, the authors of the article substantiate the productivity and prove the effectiveness of the implementation of platform models of the hybrid distance-learning format. The materials of the article are recommended to teachers and students of the university, methodologists, curators, tutors.

**Keywords:** student's personality, post-pandemic perspective of university development, distance learning, hybrid format of distance learning, mixed learning, collaborative technologies, platform model, pedagogical design.

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## 1. Introduction

### 1.1. Study Relevance

Priority in making important decisions caused by post-pandemic consequences in the educational activities of universities is given to issues of transition from the traditional (face-to-face) learning to new remote formats (Grishin, Domashenko & Konstantinova, 2020; Nikulicheva, Djakova & Glukhovskaya, 2020; Lessons of the Stress test, 2020). The introduction of modern advances in the field of technologies for processing, storing, transmitting and using information in student education has intensified the pandemic transformation of its various formats. In the course of analytical and expert assessments by specialists of new formats of distance learning for university students, special priorities of hybrid learning were identified due to the convergence of collaborative technologies and cloud information platforms for educational purposes (Aleshchanova,, Frolova & Zheltukhina, 2019; Dokukina & Shtykhno, 2020; Trifonova, Korolev & Khutieva, 2020; Galchenko et al., 2020; Stress test lessons: Universities in the context of a pandemic and after it, 2020). The results of this study prove that collaborative technologies bring not only visible results of traditional methods automation in the implementation of educational activities, but also create active areas for rethinking and transforming the processes of distance learning of students associated with the organization of effective support for its hybrid format. In this regard, in this article, collaborative technologies are justified as a priority condition for the implementation of a hybrid format of distance learning for students in a post- pandemic perspective. The authors with support from the electronic mail (e-mail), blogs, forums, chats, video, and mobile services for the formation of sites based on collaboration platforms Moodle and Zoom carry out development and implementation of theoretical and practical foundations of this approach. In the article, taking into account the trends in the stabilization of the University educational process in post-pandemic term, the content of key concepts of hybrid formats of students distance-learning are revealed. The priorities of collaborative technologies aimed at supporting the hybrid format of distance learning are determined. Based on the results of the research, the authors of the article substantiate the productivity of platform models of distance learning's hybrid format for students in the conditions of a post-pandemic perspective. The effectiveness of the models is confirmed by the results of their applications in the hybrid format of distance learning.

### 1.2. Literature Review

The hybrid format of distance learning of university students in scientific discourse is presented in a number of works before the pandemic period (Andreev, 2013; Verbitsky, 2019; Bayanova et al., 2020; Volobueva, 2017; Galikhanov & Khasanova, 2019; Driver, 2012; Kalinina, 2015; Kizilova, Fadeev & Volkov, 2018; Kvon et al., 2019; Rubtsov & Panich, 2017). The results of the authors' research served as a basis for solving the tasks of this study: determining the educational priorities of distance learning hybrid format in the post-pandemic perspective and synchronizing pedagogical and automated resources in the design of collaborative technologies based on these approaches. These works are also of scientific and practical interest for defining the conceptual and categorical apparatus of hybrid learning, separating the concepts of mixed and hybrid learning, and for solving many other problems in the transformation of the educational space of universities in the post-pandemic perspective. During the research, the authors have identified the peculiarities of approaches to the problem of hybrid learning by English-speaking authors, which consist in its large-scale identification with the problems of mixed learning at all levels of educational systems development (Gabriellova et al., 2020). In most English-language works, hybrid learning is considered as the result of mixing traditional pedagogical and modern electronic formats of the educational process in a modified environment (Bonk & Graham, 2006; Clifford, 2017; Driver, 2012; Richey, 2013; Tomlinson & Whittaker, 2013; Michael & Heather,

2017). The results of this study indicate that despite the interest of specialists in using innovative approaches to hybrid formats of distance learning for students in the changed educational environment of the university, a holistic scientifically based approach to their implementation in the post-pandemic perspective is not yet traced in the presented works. To date, there is a disparity in the definition of the conceptual and categorical apparatus; there are significant differences in approaches to solving technological aspects, implementing models of collaborative platforms, and a number of other problems that do not contribute to their productive solution. Therefore, the study of specific, practice-oriented aspects of the implementation of distance learning's hybrid formats for students with the support of collaborative technologies seems justified and timely for the educational theory and practice of universities in the predicted educational conditions.

### 1.3. Key Concepts

The transformation of qualitative and quantitative reincarnations of distance learning of university students into the format of hybrid learning in this study received its concrete reflection in the process of filling the key concepts of its new discourse with semantic content:

1) Post-pandemic perspective. As a prototype of the innovative educational environment of the campus, it identifies its predictive functions, reformats itself from a source of knowledge into a full participant in the creation of new information that meets the needs of a hybrid distance-learning format supported by collaborative technologies. As a result of reformatting with the help of high-speed Internet, local Wi-Fi network, interactive panels in classrooms, local network servers, laptops, tablets and gadgets of teachers and students, the nature of interaction between the teacher and the student is changed; the distance learning of students is reloaded with new generation software, accessible open education platforms, information systems that provide access to modern educational resources; the transition to online learning (e-learning) is being made, which allows organizing educational activities based on platform models of the hybrid format of distance learning for students (Moodle, Zoome, Atutor, iSpring);

2) Hybrid learning. In modern education, it is a collaborative strategy for moving to a new level of almost all educational processes, since it is not limited to any time and territorial limits, and can manifest itself in a variety of spheres of life, in the interaction of different people and entire societies. In the course of this study, it is found that hybrid learning in the educational process is often replaced by the concept of mixed learning, but its distinctive feature is the creation of a complete, new product based on the process of collaboration of traditional and innovative formats. Hybrid learning has a long tradition. In the recent past in educational processes, organizational forms and methods (lectures, practical and research methods and technologies) were integrated, they were combined into sections of textbooks and other didactic materials, were combined into modules, and traditional university structures were combined with structures of a new type. In modern conditions, the hybridization format has no boundaries. Its various combinations arise spontaneously: traditional full-time and remote, structured and unstructured, independent and collaborative, work and training. Solving these problems is the main strategy of universities for the coming future;

3) Mixed learning. The discourse of blended learning has been used in English-language pedagogical literature since the late 90s of the twentieth century. However, for the first time, its semantic content, as a form of learning based on mixing traditional learning in the course of personal communication (face-to-face) of teachers and students with learning through the use of modern electronic technologies in a changing educational environment, is presented in the works of C.J. Bonk, and C.R. Graham (2006); B. Tomlinson and C. Whittaker (2013). In the works of domestic researchers, mixed learning is considered

as one of the principles of collaboration in a hybrid format of distance learning (Kalinina, 2015; Kizilova, Fadeev & Volkov, 2018; Maksimenkova & Neznanov, 2019; Trifonova, Korolev & Khutieva, 2020).

## **2. Results and Discussion**

### *2.1. Priorities of Collaborative Technologies in the Hybrid Format of Distance Learning for University Students*

In the course of this study, it is proved that collaborative technologies are a new direction in the implementation of distance learning's hybrid format, which has become a priority due to the use of new means of telecommunications and human – machine interaction in the educational space of the university. Currently, collaborative technologies attract users by the stability of the existing structure of artifacts; the exclusion of plagiarism; and support for proctoring. The study proved that the use of collaborative technologies in the implementation of a hybrid format of distance learning for students allows you to eliminate the routine work of synchronizing workplaces from any supported devices – workstations, tablets, smartphones; eliminate duplicate artifacts; delete unnecessary emails in the mailbox by aggregating several notifications in one email; create competent collaborations; various types of convenient feedback; reuse of artifacts; automatic publication on the Internet. Based on the results obtained in the course of the study, the authors of the article established the basic levels of implementation of collaborative technologies to support the hybrid format of distance learning for university students.

The first level is informational. It is characterized by a focus on assisting students in obtaining methodical support for collaborative interaction in the educational process. To this end, in the course of the monitoring study, the authors of the article implemented a webinar Hybrid format of distance learning: educational experience, collaborative solutions. In the process of participating in the webinar, students analyze objective information about the problems of the hybrid format of distance learning with the support of collaborative technologies. Based on the information of the reference, technological direction, knowledge of special software and technical tools, students form an understanding of modern educational strategies of the university in the space of telecommunications channels and computer equipment.

The second level is instrumental. It is represented by a variety of tools that are characterized by free of charge and the speed of their implementation in the hybrid format of distance learning.

1. Universal technologies: 1) Microsoft Office 365 Education; 2) Google-G Suite for Education.

2. Specialized technologies for creating artifacts: development of software tools for beginners and for serious teamwork; creation of intelligence maps; writing scientific papers; work with bibliography and citation; support for project management.

Third level. Responsibility for collaboration in the process of interaction between the teacher and students. The introduction of collaborative technologies radically changes the interaction between the teacher and students, initially changing their worldview. Students become critics, link collectors, and co-authors of materials. Some of them become opinion leaders, which is confirmed by the real pedagogical experience of students' communication in the collaborative space and specific artifacts. In this regard, recognizing such facts, the teacher should be ready to evaluate, analyze and aggregate this data in a new way; use it as an integral part of the planning process for each individual student, group of students; be open to new learning strategies; have a broad outlook; be able to differentiate learning in accordance with the needs of students; be a leader in the organization of educational activities in the space of collaborative technologies. With this approach, the teacher's responsibility for the quality of

collaborative interactions in the innovative space of the hybrid distance learning format moves to a qualitatively new level of partnership interaction (Maksimenkova & Neznanov, 2019).

## *2.2. Platform Models of Distance Learning's Hybrid Format for Students in the Post-Pandemic Perspective*

In the course of the study, the authors of the article analyzed the most priority platforms for software and technical equipment of the hybrid distance-learning format, which determines the development of directions for using these resources. In the process of designing a platform model of a hybrid distance-learning format for university students, the authors of this article tested the parameters of platforms focused on the trends of the hybrid-learning format. Moodle, Zoome, Atutor, and iSpring platforms that have proven themselves during crises of distance learning in the context of a global pandemic correspond to all these parameters.

1. Moodle. Free e-learning platform. The prototype of the platform has open source code that allows you to add various modules; an easy-to-use interface; flexible settings; a personalized control panel that displays current, past and future courses and assignments; tools and activities for collaboration; an intuitive text editor; automatic notifications about new tasks and deadlines, forum posts, as well as personal messages. It has a flexible set of tools to support both the hybrid-learning format and other online courses.

2. Atutor. Free and open source distance learning system. In general, the functionality is similar to Moodle, except that Atutor has a built-in test constructor. It has a simple and intuitive interface and flexible settings. The system is well suited for creating small online courses. Atutor will help each user quickly get used to and learn how to work with distance learning platforms. However, this platform has much less technical documentation and articles on configuration than Moodle, Zoome, which somewhat narrows the boundaries of its activities.

3. iSpring. Russian distance learning platform. Unlike previous platforms, iSpring is sold by subscription. The platform provides unlimited file storage, easy integration with other services using an open API. The built-in gamification of the system and ratings allow you to analyze your results against the background of others and visually summarize the results of your work. The iSpring platform is simple and convenient for a hybrid distance-learning format; the functionality is identical to Moodle.

4. Zoom - a platform for wireless interaction of university students for organizing video conferences, webinars, group chats, including through mobile video and audio communication. The Zoom platform is used wherever you need to communicate with remote employees in the process of video and audio communication: at conferences or webinars; in collaboration rooms; in support of desktop sharing for remote work of performers on joint projects.

### **3. Conclusion**

The conducted research confirms the theoretical and practical significance of new approaches' development to the implementation of the hybrid format of distance learning for students as an independent scientific direction of the transformation of the educational process of the university in the post-pandemic perspective. Based on the results of monitoring the transformations of the practical activity of universities, the study identifies the priorities of collaborative platforms that expand the hybrid format of distance learning of students with the support of collaborative technologies with their automated systems. In the article, taking into account the collaborative trends in the transformation of the activities of universities:

- 1) the content of the key concepts of the hybrid format of distance learning for students is disclosed;
- 2) the priorities of collaborative technologies aimed at supporting the hybrid format of distance learning of university students are defined;
- 3) The implementation efficiency of platform models of the hybrid format of distance learning for students in the context of a post-pandemic perspective is justified. The effectiveness of the platform models is proved by the results of collaborative technologies' use in the hybrid format of distance learning for students.

This problem as an independent scientific direction does not exhaust itself by solving the tasks set. The results of the study determine the need to continue research in the field of developing new conceptual approaches to improving the skills of university teachers, focused on large-scale collaboration of the educational process.

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