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DISTANCE LEARNING IN HIGHER EDUCATION: THE EXPERIENCE OF THE COVID-19 PANDEMIC AND WAR IN UKRAINE

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ABSTRACT

Distance learning has become one of the most popular educational trends of the 21st century, and the COVID-19 pandemic and war in Ukraine has only accelerated the process of its integration into the education sector.

*The **purpose** of our work is to study the influence of the online learning format on the adaptation and academic success of students, as well as to search for promising analogues.*

*The **methodology**. In addition to a comprehensive theoretical analysis, which included a comparison of different approaches and research, we used the method of interviewing respondents, which involved 200 first-year students from 6 Ukrainian higher education institutions (H.S. Skovoroda Kharkiv National Pedagogical University, Taras Shevchenko National University of Kyiv, V. N. Karazin Kharkiv National University, National Technical University*

of Ukraine Kyiv Polytechnic Institute, State Biotechnology University, Kharkiv National University of Radio Electronics). The survey was conducted online using the Google Forms platform in the period from December 19 to 26, 2021, the calculation and visualization of the received data were performed using Microsoft Office tools. Fisher's statistical test (online-tool) was used to establish differences between the indicators of academic success of the respondents of the two groups.

***Results**. We decided to compare the academic success of students who study online with students included in the blended learning system. Thus, only 8% of the respondents who took the course in an online format received a mark of 5 at the end of the academic semester, while almost a quarter (25%) of the students of the second group who took the course in blended learning received the highest score. We also asked respondents to evaluate the process of their own adaptation to new conditions (distance and blended learning). The results of the survey showed that the adaptation process proceeds much easier in the conditions of the blended learning or Flipped Classroom blended learning model, while the adaptation of respondents to the online format had a number of problems.*

***Conclusion**. Online learning has a high potential, which is difficult to realize due to the high demands on technical support, communication problems in an unfamiliar space, and the lack of social presence of participants in the educational process. Blended learning, as a combination of full-time and distance learning, can offset the shortcomings of online learning and realize its potential. The next step in our research will be to compare the performance of another learning models.*

KEYWORDS: *Academic Success, Distance Learning, Ukraine's Higher Education System, the COVID-19 Pandemic, Experience, Student, War.*

INTRODUCTION

The modern era is characterized by a sharp transition of society from the post-industrial stage to the information age. Such a transition affects a huge number of factors and processes of habitual human life. Education, as one of the most important and at the same time the most innovative institutions of society, is forced to adapt, focusing on technological progress.

Pedagogical technologies come to the fore, which form students' internal motivation for education, the ability to analyze and systematize information, make decisions quickly, and effectively organize the process of their own education. Traditional forms of education can no longer satisfy the high demands of the labor market and society development, while innovative technologies open up access for students to non-traditional sources of information, increasing the efficiency of independent work and providing previously unseen opportunities for creativity and self-expression.

COVID-19 pandemic has fundamentally changed the traditional learning process. Dealing with a whole range of new educational problems, teachers faced the question of finding a universal solution. Distance learning, which is now strongly

associated with online education, has shown itself to be an obvious alternative that can be effective under the constraints of pandemic, war or others «force majeure». Thanks to technological advances in learning, the distance format includes the active use of computers in improving the quality of learning.

Online platforms are considerable for use in the process of teaching mathematical disciplines that require high accuracy, accurate, fast and reliable graphic display of educational elements. The computerization of the educational process has proven itself well within the framework of the study of mathematical concepts, especially those based on geometry, calculus, statistics and functional graphics even before the conditions of distance learning occurred.

Although online education has been around for more than a decade, until recently it has come under considerable criticism from both academics and education managers.

However, the conditions of the pandemic have helped stakeholders reach a consensus and allow distance learning to show its full potential in the context of the new educational paradigm. Today, there are signs that distance learning will soon become a traditional form of the educational process and will firmly enter the education system after the end of the pandemic and the beginning of war.

The COVID 19 experience has forced educators to experiment with online education and has generated sympathy and acceptance along with its limitations (Nambiar, 2020). World organizations such as UNESCO provide support to various countries through the provision of solutions for inclusive distance learning. UNESCO is working with local organizations to ensure continuity of learning for all groups of students, especially disadvantaged children and adolescents, who tend to be the hardest hit by school and university closures. Many commercial organizations have already experimented with working from home and have expressed a desire to continue working in this mode over the next 5 years.

The implementation of individual training programs, as well as the features of building a student -centered curriculum, were considered in the Iyer study (Iyer et al., 2020). Pedagogical and psychological tools for increasing students' motivation for distance learning were studied by Bazelais (Bazelais, 2018). Promising ways to increase student involvement in the distance learning process, as well as encouragement methods in this format, were given by Castro (Castro, 2019).

Key features of the "individual trajectory" model, namely the option of learning in accordance with one's own style and pace have been considered by Rizaq (Rizaq et al., 2021). Increasing student performance and academic success through online education was researched by Serrano (Serrano et al., 2019). The development of critical thinking skills in students of the humanities in distance learning was the object of research by Lackovic (Lackovic, 2017).

The forms of implementation of individual learning in the blended learning format were considered by Mata (Mata, 2016). Group activity and students interaction in the distance learning format was studied by Dabbagh (Dabbagh, 2012). Features of feedback as a psychological phenomenon in online learning were investigated by Nambiar (Nambiar, 2020).

The purpose of our work is to study the influence of the online learning format on the adaptation and academic success of students, as well as to search for promising

analogues. To achieve this goal, we have compiled a list of tasks:

1. Reveal the negative features of online learning;
2. Explore possible analogues of online learning in a pandemic;
3. Highlight the main requirements for an effective educational model in a pandemic;
4. Conduct an experimental study of the influence of online learning on students' adaptation, as well as their academic success.

METHODOLOGY

In addition to a comprehensive theoretical analysis, which included a comparison of different approaches and research, we used the method of interviewing respondents, which involved 200 first-year students from 6 Ukrainian higher education institutions (H.S. Skovoroda Kharkiv National Pedagogical University, Taras Shevchenko National University of Kyiv, V. N. Karazin Kharkiv National University, National Technical University of Ukraine Kyiv Polytechnic Institute, State Biotechnology University and Kharkiv National University of Radio Electronics).

The survey was conducted online using the Google Forms platform in the period from December 19 to 26, 2021, the calculation and visualization of the received data were performed using Microsoft Office tools. Fisher's statistical test (online tool) was used to establish differences between the indicators of academic success of the respondents of the two groups:

1. the actual results of the educational activities of students;
2. the degree of satisfaction of respondents the process of adaptation to new conditions;
3. a list of problems and their prevalence among the respondents.

RESULTS

In order to study in more detail the problems and possible risks of distance education, in our opinion it would be appropriate to compare it with traditional, full-time education and highlight the pros and cons. After COVID -19 situation most institutes and universities around the world have been forced to urgently create online courses for various types of diplomas, certificates and degrees. The Internet has already managed to change the world of education, not only for students and teachers, but also for regulators and administrators. Current war in Ukraine restricted many possibilities for students and teachers and practically made classical education forms impossible in dangerous conditions.

The existing experience allows us to highlight the following strengths of online education:

– Students are more empowered to manage their schedules and study programs using online tools. This gives participants the opportunity to simultaneously study using online courses and live in the same mode, without endangering their lives, sacrificing their work and home life for the sake of studying. Distance education maintains psychological harmony in their lives, which is an important factor in successful learning. It also allows students the opportunity to improve their skills without leaving their workplace. Some Scholars (Ching et al., 2020) believe that online learning is currently the only way to include education in the busy schedule of the average person.

– The financial cost of commuting to a school is greatly reduced or eliminated, and the direct cost of education is further reduced by lower tuition fees, lower facility maintenance costs, and reduced staff

hours. This increases the accessibility of education and makes it available to a wide range of students.

– Low requirements for learning space, which can be replaced by a comfortable home environment (Nahaev& Hrynova, 2020). With the necessary technical equipment, students have the opportunity to study from any safe and comfortable place in the world, which in turn increases the volume of training flows and at the same time reduces the cost per student. The same applies to teachers who have the opportunity to create their own office in any place convenient for them. The initial cost of investment is high (especially for technical support), but this is a one-time investment, while the profit will pay off the investment in subsequent months.

At the same time, online education has a number of negative aspects that are worth mentioning:

– Online education is demanding on the student's self-discipline, since in the conditions of distance education it regulates a much larger number of factors, while in the classical situation of full-time education, the conditions are set by the administration of the higher educational institution. A high level of self-discipline is one of the distinguishing features of a mature person, therefore, there are risks of reduced effectiveness of online education in the first study years at universities due to the lack of necessary competencies for students to control and regulate their educational activities, (Huiwen Gao, 2021).

– Homeschooling can negatively affect students' motivation and sometimes interfere with the formation of the necessary work environment, although there are studies proving that it is possible for some people to simultaneously enjoy the comforts of home with their families and at the same time excel in the learning process. However, home learning conditions can negatively affect the student's adaptation process and their academic performance, primarily due to a large number of distractions (relatives, household chores, extraneous noise, etc.). Building an effective educational space is one of the prerequisites for an effective educational process, especially when it comes to online education, which is characterized by social distance and lack of close contact with other participants in the process.

– Students have the opportunity to formally stay in an online educational conference, turning off the sound of their videos and microphones, which is a convenient option for the students (it allows them to solve personal or domestic issues that distract them from the educational process), but it has a destructive effect on other participants in the process. This leads to the fact that other students are less actively involved in the educational process, dropping out of the general discussion, and teachers are forced to interrupt, returning inactive participants (Seethal et al., 2019). The lack of effective pedagogical tools for such situations among teachers can significantly reduce the productivity of online education.

– The campus of the university/college was a meeting place for students, and at the same time an important psychological resource, a social field for communication and part of the educational environment. Campus attendance in some Ukrainian cities has become a rarity these days due to the war and may all disappear in the future as students choose to study online after the war ends. The college campus culture will be gradually eradicated due to the online education model.

– The high demands on both the technical equipment of both sides of the educational process, and the constant availability of an Internet connection, which is an indispensable element of online learning, can become an insurmountable obstacle in certain places. This makes this form of education vulnerable and dependent on external factors, which was not a limiting factor in the face to face form.

– Orientation to technical means and long-term concentration on the monitor screen as a prerequisite for the inclusion of a student in a distance learning environment leaves an imprint on his internal state. Existence and successful activity in a new space for him also puts forward a whole list of specific requirements, such as the ability to isolate and analyze the necessary information from the general flow; the ability to succinctly and competently formulate a question or request, the ability to correctly distribute the load and quickly process the information received, etc.

Thus, we can state with confidence that distance learning has a number of negative features and is not a perfect educational form. High demands, dependence on technical equipment, psychological artifacts that arise in the learning process – all this can adversely affect the student's adaptation to new conditions and, as a result, his academic performance. A number of scientists propose blended learning as a more effective alternative to online education.

Blended learning means the combined use of face-to-face learning in its classical sense and online learning using Internet technologies, which allows students to combine self-education, effective online technologies (virtual laboratories, remote internships, communication and exchange of experience with teachers and specialists around the world) and full-time education within the walls of the university.

Thus, flexible blended learning is called hybrid learning by some scholars (Smith, & Hill, 2019). Blended learning is the optimal response to the needs of modern students for the flexibility to decide what topic they want to study, when, where and how, as well as in accordance with a student-centered learning model. Blended learning technologies will reach more students worldwide and achieve the sustainable development goals (Jdaitawi, M. 2020).

As such, blended learning, as a synergistic combination of face-to-face learning and online learning, is gaining momentum and seems to be preferred by students as it actively integrates student-centered curricula and is flexible according to student needs. Students can choose their preferred format of learning, depending on both external factors and individual features. Despite the fact that the distance component of blended learning is considered by many scientists as a key one, blended learning can significantly expand the understanding of face-to-face learning, change the learning environment with more freedom for students.

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Table 1

Comparison Face-to-face, Online and Blended Learning Technologies

Face-to-face Learning	Online Learning	Blended Learning
face to face mainly relies on holding classes within the walls of educational institutions and the use of lecture rooms, laboratories, etc.	Uses online resources to provide training courses, online and offline materials.	Combines online learning with full-time learning, as well as student self-education under the supervision of tutors and teachers
Guarantees an educational environment in the form of a campus of an educational institution	Formalized environment may be completely absent	Partial acquaintance of students with the campus of the educational institution
Widely accepted, classic teaching format based on long-standing pedagogical traditions	Based on innovative technologies, constantly changing format, which is now the subject of discussion	This is a compromise between the two models, which is gradually gaining acceptance around the world.
Expensive maintenance of resources, premises and infrastructure of an educational institution	Only initial investments in the technological support of the educational process are needed, a cheaper option	Investment is greater than in online education, but less than in face-to-face programs.
Teachers and staff are already well trained and have the necessary professional competencies	Employees face the need to improve ICT competencies to work effectively remotely	Employers are actively developing training according to this model, new teacher roles (tutor, mentor) are emerging, for which there are already developments
Unable to use this model due to social distancing in a COVID situation.	A popular option during the COVID situation	A popular option during the COVID situation when the necessary conditions are met; has the potential to be the future of education
Independent of technology related issues	Internet infrastructure and bandwidth issues can become critical	Internet infrastructure and bandwidth issues are an important but optional element of the learning process

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Blending learning allows students to follow their own flexible plan and learning style, learn at their own pace, following their own educational trajectory and adapt their educations to difficult or dangerous life situations. Blended education also offers a high level of accessibility that allows students to access materials from anywhere at any time while enjoying the benefits of personal support and teacher referral (Bruggeman et al. 2021).

Blended learning supports more effective interaction between students and their teachers through the use of email, forums and chats combined with live, informal communication and a sense of socialization. Students and teachers can track student progress using technological tools (such as online monitoring platforms) and make adjustments to the learning process using classic pedagogical tools.

Modern education must be consistent with the expectations of students in order to effectively use relevant technologies. As part of the remote component of blended learning, the creation, formatting, saving, recording, sending, delivery and verification of educational materials are entirely dependent on technical support. Technology is the main condition for a smooth transition from classical learning to blended learning (Lazar et al., 2020).

The effectiveness of this stage depends entirely on the technical resources and competencies of the IT team. Technological support of blended learning involves one-time investments, as well as subsequent support of the educational infrastructure. The situation with the COVID pandemic has made blended learning a possible next step in the development of online learning, and established technologies have become the main means of its implementation.

Thus, this need for technology has made experience and technical know-how mandatory for all teachers and administrators, as well as for students (Apandi et al., 2020). The main factor influencing the use of technology is the predicted value of the technology to the organization.

The ease of use of relevant technologies for education in teaching and learning will affect the actual use of the blended learning system. The majority of students prefer to use technologies based on PC platforms, mobile devices or smart gadgets, so the complexity of their integration is significantly reduced (Kim et al., 2017).

The relative benefit of using technology to implement blended learning lowers barriers and increases educational potential, while perceived risks are minimal given the current war situation in Ukraine. Gamification can also be used to keep students interested and improve the skills needed in the industry (Ramirez et al., 2021).

Obvious transformations in the structure of the educational process determine the nature of the professional activity of the scientific and pedagogical staff. What is the role of the teacher in the innovative educational environment of the student? Is a classical teacher needed in a blended learning system if the main generally accepted principle of this model is focused on the initiative of the student and his activity?

Thus, a teacher within the system of mixed education is forced to restructure, mastering a new set of professional competencies of a facilitator - a person who organizes and conducts group forms of work in order to increase their effectiveness (Rabia et al., 2016).

In the new system of interaction, it is the student who occupies a central position in the educational process, while the teacher is assigned the function of a consultant, organizer of the educational and creative process, but no longer the main resource for obtaining information.

A number of scientists also highlight the human factor as crucial in the implementation of a blended learning system (Aditya et al., 2021). The administration of the educational institution should not only encourage awareness of the need for change, but also ensure smoothness and "painlessness" through social and psychological trainings, professional development programs, exchange of experience, etc.

Skills and knowledge should be transferred by the organization to its employees (Oliveira et al., 2021). Enforcing these changes and ensuring that educators stay within the new educational process and do not revert to old systems is the last step of the envisaged changes (Siegel et al., 2017; Vaportizis et al., 2017).

The successful implementation of blended learning systems depends on the satisfaction of a whole list of requirements, which can be roughly divided into three groups. The first group of factors includes the optimal organizational conditions for the successful implementation of blended learning systems:

– a sufficient number of classrooms equipped with the necessary technical equipment;
– stable Internet streaming for playing video materials/ video lectures and performing interactive exercises, functioning of online laboratories, organizing online conferences, keeping records of student progress;
– website of an educational institution, where students can get all the necessary information at any time;
– safety of the process of control and testing of students' knowledge;
– availability in the state of providing technical support for the distance component of blended learning for both students and teachers.

The second group of problems is related to the level of professionalism of the teacher and his pedagogical competencies, as a structured set of knowledge, skills, abilities, and attitudes acquired in the course of learning (Chernenko, 2021).

– willingness to review and adapt existing pedagogical strategies;
– sufficient informational and communicative competence;
– optimal distribution of own resources with the obligatory allocation of time for the development of new educational technologies;
– ability to create high-quality electronic content in various formats;
– willingness to act as a tutor or mentor for students.

The third group of factors contributing to the successful application of blended learning technology directly relates to the personality of the student. These requirements include:

– formed internal motivation to gain knowledge and willingness to take responsibility for the results of their studies;
– discipline and self-organization skills for timely completion of tasks and active self-education;
– conscientiousness in the performance of tasks and honesty in the process of checking and controlling knowledge, which in a remote format is subject to the risk of falsifying the results.

An analysis of the literature allows us to conclude that the successful implementation of blended learning technology is possible only when all three groups of problems are solved. Neglecting or ignoring any of the above conditions will hinder the achievement of planned results and significantly reduce the effectiveness of the blended learning system, which will further negatively affect the academic performance of students.

The results of a study conducted by scientists from the Clayton Institute for Disruptive Innovation Christensen, identified the key parameters of high-quality blended learning:

– a high level of personalization of curricula, encouraging students to build an individual learning path, the inclusiveness of the educational process, its accessibility and openness;
– learning based learning (Bloom's theory), according to which, students must demonstrate perfect mastery of what they have learned before moving on to new material.
– an environment of high achievement, where each student has a range of professional reference points, as well as teachers who are ready to help form a step-by-step path to achieve their goals; the student is able to engage in learning activities, achieving this goal).

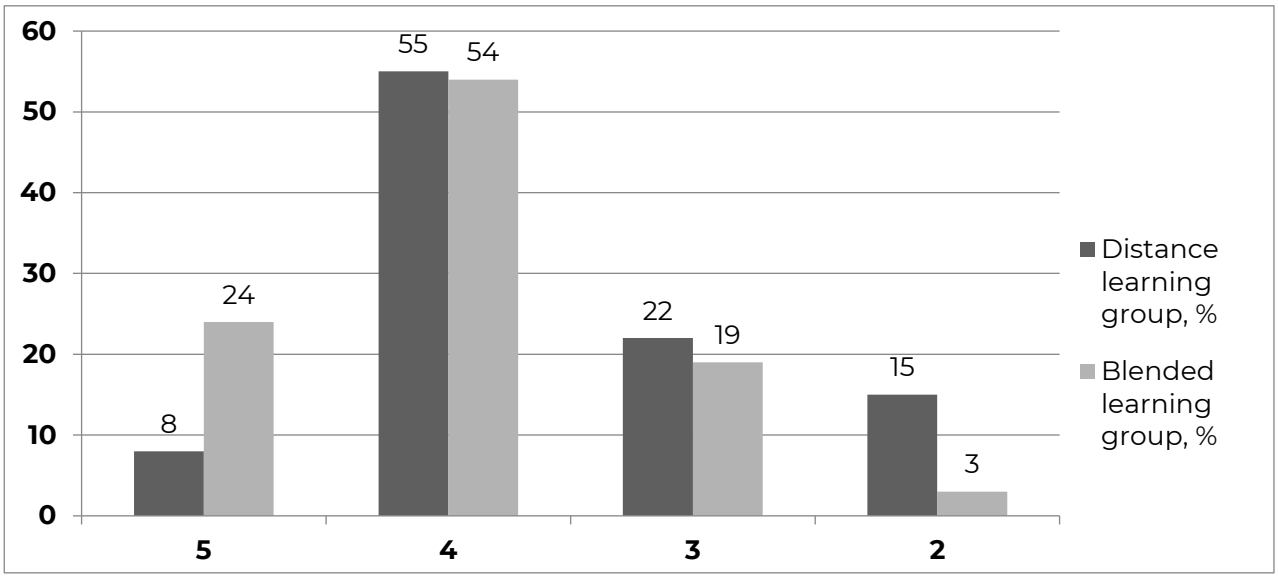
We decided to test the hypothesis about the effectiveness of blended learning on the example of the Flipped Classroom model in comparison with the online learning format. The study was conducted on the basis of Ukrainian educational institutions. The respondents were students of the first year of study in the specialty "Psychology".

The total sample was 200 people, from which 2 groups of 100 people were formed. The first group included respondents who were trained in a distance format (online training). The second group included students who were trained in the same subjects, but under the conditions of the Flipped Classroom blended learning model.

The first aim of our study was to compare the academic semester results of the respondents of both groups. The results are clearly presented in Figure 1.

Figure 1

Comparison of the performance of respondents in both groups at the end of the academic semester



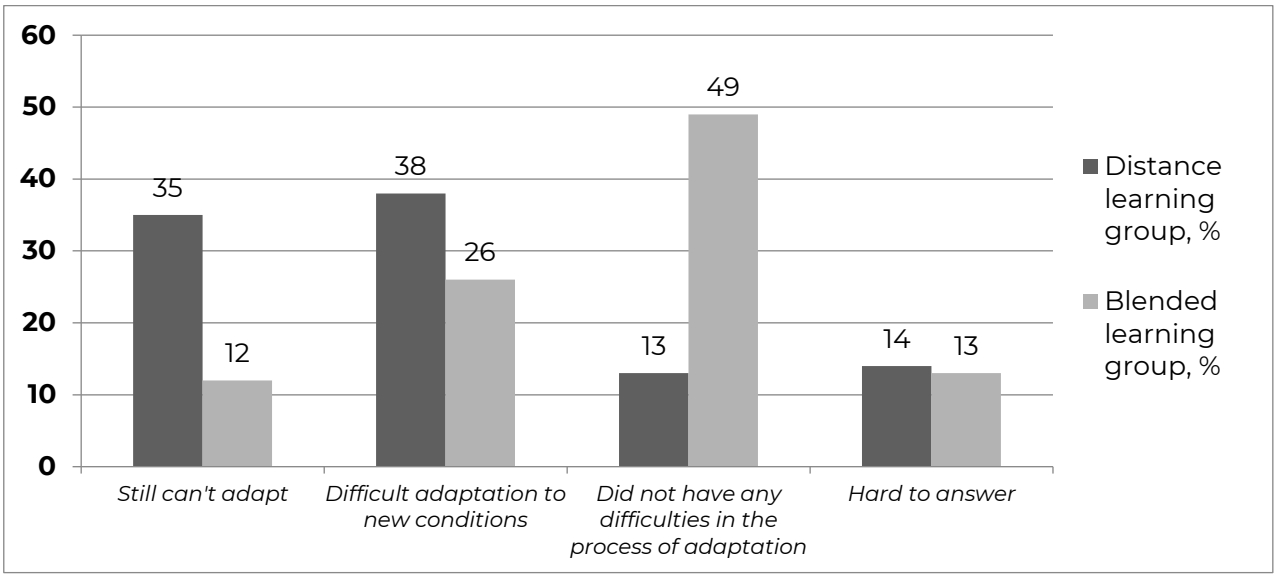
As can be seen from the presented diagram, only 8% of the respondents who took the course in an online format received a mark of 5 at the end of the academic semester, while almost a quarter (25%) of the students of the second group who took the course in blended learning conditions received the highest score (φemp. = 3.185). Almost half of the respondents in both groups finished the semester with a score of 4, about a fifth received 3 points, according to these indicators, the difference can be considered insignificant.

It is worth noting that 15% of the respondents of the first group received the lowest score at the end of the semester, while only 3% of the students of the second group had a score of 2 (φemp. = 3.162). Thus, we can confidently assert that there are statistically significant differences between the results of the respondents of both groups.

The next stage of our research was the study of the process of adaptation of participants in the educational process to innovative conditions. The results of the survey are clearly presented in Figure 2.

Figure 2.

The results of a survey of respondents on the topic "How can you describe your adaptation to a new format of education?"



After analyzing the results, we came to the conclusion that the adaptation process, which, as previously established, is one of the most important aspects of an effective educational process, proceeds much easier in the conditions of the «Flipped Classroom» blended learning model, while respondents' adaptation to online-format had a number of problems. In order to study the adaptation process in more detail, we interviewed respondents, asking them to describe the main problems they faced.

Thus, the respondents of the first group, who took part in the online format, mentioned: the lack of live contact with the teacher (68%), the low level of interaction with the team (52%), problems with self-organization during the educational process (50%), poor communication quality (35%), low level of computer competence of the teacher (27%), fatigue and overexertion (20%), lack of learning motivation (15%). At the same time, among the problems characteristic of adapting to blended learning, respondents mentioned the complexity of

the organization of the educational process (48%) and high fatigue (25%).

Suggested on the blended learning as the best way to integrate distance technologies into the system education has great potential and gives students the ability to quickly adapt to modern processes of transformation of the education system. However, a great emphasis on independent work of students and the ability to productively organize their time puts forward the requirements for effective pedagogical accompaniment and requires the solution of a number of problems, namely:

1. adaptation of available materials to new pedagogical tools and educational environment, as well as to the characteristics of students; to the current level of knowledge, personal needs and external factors (maximum accessibility of education, regardless of the financial capabilities of the student);
2. support and control of the student's educational activities by the teacher, adjustment of the work plan in case of poor progress;
3. providing constant feedback at different levels of interaction and support and with the provision of various communication channels;
4. intensification of the learning process through the implementation of various types of interactivity and the use of active learning methods.

Scientists and specialists in the field of blended learning argue that today there is no universal conceptual apparatus of blended learning. Most often, blended learning refers to a wide range of situations of integrating online learning into the traditional model. The most popular definition of blended learning emphasizes the combination of “face-to-face and distance learning, with one of them being basic depending on the preferred model” (Adams et all, 2017).

However, in our opinion, such definitions are not fully reflect characteristic features of blended learning, since the maximum potential from this integration can only be unlocked by creating an integral whole, synergy between the two models, which ensures the personalization of learning and the adequacy of the methods used (Nebytova, 2022).

At the same time, we maintain the point of view of the authors, pointing out the need for systematic planning of the content and structure of the course, the use of innovative teaching methods and knowledge control, which in turn allows us to consider blended learning as pedagogical approach that improve the efficiency of the educational process by improving the level of interaction between all its participants. Therefore, we assume that in order to achieve the planned results in blended learning, the development of a pedagogical model is mandatory.

The essence of the blended learning or “Flipped Classroom” model lies in “turning over” the key elements of the educational process, while the “flipping” is carried out not only in terms of stages (classical classroom work is done at home in the “Flipped Classroom” model), but also in the transformation of the role teacher and student responsibility for their learning.

So, the teacher ceases to be the main translator information, giving way to other sources (first of all, the Internet environment), at the same time there are prerequisites for the development of learning in cooperation (peer-assisted learning, collaborative learning; cooperative learning). In current educational conditions, this model is based on the active implementation

online learning environment, as well as strengthening the role of independent work and creative activity of students, which in turn requires special attention to the problem of planning, forecasting and designing the course, as well as organizing the educational process.

Available studies have shown that the Flipped Classroom model makes it possible to significantly increase the level of independent extracurricular work of students. Also, within the framework of this model, there is an increase in the level of their educational autonomy, which helps to increase the internal motivation of the participants in the educational process, allows them to effectively use various pedagogical tools, which, together with the pedagogical competence of the teacher, makes it possible to jointly building individual educational trajectories.

CONCLUSIONS

The COVID -19 pandemic, which the whole world was forced to face, has had an irreversible impact on the education sector. By limiting the teacher's existing pedagogical tools due to quarantine restrictions and almost completely changing the educational environment, the pandemic has challenged the classical, well-established learning process.

Remote educational technologies, namely online labs, conferences, interactive whiteboards, educational Internet platforms, chats, websites, blogs and instant messengers, have become almost the only adequate solution to the problem of organizing the educational process in the new conditions. Such a sharp transition from classical, "live" teaching to an innovative form forced educational institutions to radically restructure the learning process, which was accompanied by the process of students' adaptation to new, unusual conditions. It is also impossible to predict how online learning will affect the academic performance of students.

At the same time, online education has a number of negative aspects that are worth mentioning: online education is very demanding on the student's self-discipline; can negatively affect the motivation of students, and sometimes interfere with the formation of the necessary working environment; students have the opportunity to turn off the webcam and microphone, formally remaining in the webinar room, but at the same time dropping out of the educational process, which negatively affects group dynamics; due to the lack of the need for a live visit to the educational institution, the campus culture will be gradually eradicated due to the online education model; high demands on the technical equipment of both sides of the educational process; focus on technical means and long-term concentration on the monitor screen, as prerequisites for including a student in a distance learning environment, leave an imprint on his internal state.

At the same time, blended learning is becoming increasingly popular as a form of combining "live" communication with the teacher and teams and distance learning. Blended learning includes many models, one of which is the Flipped Classroom. We decided to compare the academic success of students who study online with students included in the blended learning system. Thus, only 8% of the respondents who took the course in an online format received a mark of 5 at the end of the academic semester, while almost a quarter (25%) of the students of the second group who took the course in

blended learning received the highest score.

We also asked respondents to evaluate the process of their own adaptation to new conditions (distance and blended learning). The results of the survey showed that the adaptation process proceeds much easier in the conditions of the Flipped Classroom blended learning model, while the adaptation of respondents to the online format had a number of problems. Thus, the respondents of the first group, who were trained online, mentioned the lack of live contact with the teacher, the low level of interaction with the team, problems with self-organization during the educational process, poor communication quality, low level of computer competence of the teacher and related problems, fatigue and overstrain, lack of motivation to learn.

Thus, we came to the conclusion about the low efficiency of distance learning in the absence of a face-to-face component. In our opinion, online learning has a high potential, which is difficult to realize due to the high demands on technical support, communication problems in an unfamiliar space, and the lack of social presence of participants in the educational process. Blended learning, as a combination of full-time and distance learning, can offset the shortcomings of online learning and realize its potential. The next step in our research will be to compare the performance of different blended learning models.

CONFLICT OF INTERESTS

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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АНОТАЦІЯ / ABSTRACT [in Ukrainian]:

ДИСТАНЦІЙНЕ НАВЧАННЯ В ВИЩІЙ ОСВІТІ: ДОСВІД ПАНДЕМІЇ COVID-19 ТА ВІЙНИ В УКРАЇНІ

Дистанційне навчання стало одним із найпопулярніших освітніх трендів 21 століття, а пандемія COVID-19 та війна в Україні лише прискорили процес його інтеграції в освітній сектор.

***Метою** нашої роботи є вивчення впливу навчання в форматі онлайн на адаптацію та навчальну успішність студентів, а також пошук перспективних аналогів дистанційному навчанню.*

***Методологія.** Крім комплексного теоретичного аналізу, який включав в себе порівняння різних підходів і досліджень, ми використовували метод опитування респондентів, до якого було залучено 200 студентів-першокурсників з 6 українських ЗВО (ХНПУ ім. Г.С. Сковороди, КНУ ім. Т.Г. Шевченка, Харківський національний університет імені В. Н. Каразіна, Національний технічний університет Харківський політехнічний інститут, Державний біотехнологічний університет, Харківський національний університет радіоелектроніки). Опитування проходило в форматі онлайн за допомогою платформи гугл форм в період з 19 по 26 грудня 2021 року, підрахунок та візуалізація отриманих даних були виконані за допомогою інструментарію Майкрософт. Для встановлення відмінностей між показниками академічної успішності респондентів двох груп був використаний статистичний критерій Фішера.*

***Результати.** Ми вирішили порівняти успішність студентів, які навчаються онлайн, зі студентами, залученими до системи змішаного навчання. Так, лише 8% респондентів, які проходили курс в онлайн-форматі, наприкінці навчального року отримали найвищий бал, тоді як майже чверть (25%) студентів другої групи, які проходили курс в форматі змішаного навчання, отримала аналогічний бал. Також ми попросили респондентів оцінити процес власної адаптації до нових умов (дистанційне та змішане навчання). Результати опитування показали, що процес адаптації проходить набагато легше в умовах моделі змішаного навчання, тоді як адаптація респондентів до онлайн-формату мала ряд проблем.*

***Висновок.** Онлайн-навчання має високий освітній потенціал, який важко реалізувати через високі вимоги до технічного забезпечення, комунікативні проблеми спілкування в незвичному просторі та недостатній рівень соціальної присутності учасників навчального*

процесу. Змішане навчання, як поєднання очного та дистанційного навчання, може компенсувати недоліки онлайн-навчання та повністю реалізувати його потенціал. Перспективним напрямком подальших досліджень бачиться порівняння ефективності інших моделей навчання.

КЛЮЧОВІ СЛОВА: *академічні успіхи, дистанційне навчання, система вищої освіти України, пандемія COVID-19, досвід, студент, війна.*

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