

Digitalization of Higher Education in 2021 – Challenges for University Students In Russia

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Abstract

Digital educational platforms emerged as an anticipated technological response to the need for the modernization of higher education. The digitalization of education was promoted at the state level as a strategy and an instrument to improve the quality and competitiveness of education. In 2020, the coronavirus pandemic accelerated the transition from the classroom to online-only, revealing the lack of purposeful online teaching methods, and insufficient digital competence among teachers.

The authors analyzed publications by foreign and Russian researchers to highlight the common problems of higher education digitalization, including datafication, limited capabilities of digital educational platforms, and the changing role of the teachers in e-learning. The article focuses on students' attitudes towards online education, and their voluntary or unwilling involvement in the digital educational environment, considering synchronous, asynchronous, and blended forms of learning before and during the pandemic.

The achieved results suggest that such factors as the novelty and accessibility of online courses at Western universities initially served as a factor of attraction the students, inviting them to diversify their studies in their own creative way. However, increased stress and workload, various technical problems, tough teachers' control on the one hand, and poor feedback, on the other, weakened the popularity of the digital educational environment. When asked to compare the pros and cons of online education, most students spoke in favour of maintaining the blended education format, as it allows for reducing the workload and – to some extent – enables the students to take control of their education trajectories.

This work is intended for educators and researchers interested in the challenges caused by integrating digital technologies into traditional forms of education.

Keywords

Digitalization of Education; E-learning; Distance Learning; Online Education; Blended Learning; Digital Educational Platforms; Digital Educational Environment; Online Courses; in Class Education; Independent Educational Trajectories.



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Цифровизация высшего образования в 2021 – вызовы для российских студентов

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Аннотация

Цифровые образовательные платформы появились как ожидаемый технологический ответ на необходимость модернизации высшего образования. Цифровизация образования продвигается на государственном уровне как стратегия и инструмент повышения качества и конкурентоспособности образования. В 2020 году пандемия коронавируса ускорила переход от аудиторных к онлайн-занятиям, что выявило отсутствие целенаправленных онлайн-методов обучения, недостаточную цифровую компетентность преподавателей. Авторы проанализировали публикации зарубежных и российских исследователей, чтобы выделить общие проблемы цифровизации высшего образования: датафикацию, ограниченные возможности цифровых образовательных платформ, изменение роли преподавателя в онлайн-обучении. В статье акцентируется внимание на отношении студентов к онлайн-образованию в его синхронной, асинхронной и смешанной формах, их добровольном и невольном включении в цифровую образовательную среду до и во время пандемии. Полученные результаты свидетельствуют о том, что такие факторы, как новизна и доступность онлайн-курсов в западных вузах, изначально служили фактором привлекательности, побуждая студентов творчески подходить к процессу обучения. Но из-за повышенного стресса и загруженности, различных технических неполадок, ужесточения контроля со стороны преподавателей с одной стороны и недостаточной обратной связи с другой, популярность цифровой образовательной среды ослабла. Сравнивая плюсы и минусы онлайн-образования, большинство студентов высказались за сохранение смешанного формата обучения, так как он позволяет снизить нагрузку и в какой-то мере получить возможность формировать свою индивидуальную образовательную траекторию. Данная работа предназначена для преподавателей и исследователей, изучающих проблемы, возникающие при интеграции цифровых форм в традиционные формы обучения.

Ключевые слова

цифровизация образования; онлайн-обучение; дистанционное обучение; онлайн-образование; смешанное обучение; цифровые образовательные платформы; цифровая образовательная среда; онлайн-курсы; аудиторные занятия; индивидуальные образовательные траектории



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Introduction

Digital technologies have penetrated into all spheres of human activities, of which the sphere of education is one of the most obvious targets. In 2006, digital competence was included in the list of key competencies contributing to a successful life in a knowledge society (European Commission Homepage), economic growth and increased competitiveness of both an individual and society (European Union Homepage). These technologies were supposed to redesign the learning environment to make it more flexible with higher degree of freedom for students to adapt the learning process to their individual requirements and backgrounds (Barnett, 2014; Smith & Hill, 2019; Vanslambrouck et al., 2018). The State Programme of the Russian Federation 'Information Society (2011-2020)' identified the development and implementation of information technologies as one of the main instruments for improving the quality of education. The project 'Modern digital educational environment in the Russian Federation' adopted on the basis of the Federal Law of December 29, 2012 No. 273-FZ "On Education in the Russian Federation" is aimed at developing the concept of lifelong education by modernization of distance education, creating online platforms and developing online courses. In 2020, in order to improve the quality and accessibility of education the Russian Ministry of Education and Science implemented measures to ensure the development of distant learning technologies and e-learning. Decree of the Government of the Russian Federation of November 16, 2020 No. 1836 approved the regulation on the state information system "Modern Digital Educational Environment" and ensured the development of the corresponding functionality. (Legal reference system "Garant"). The solution was implemented in the form of creating a unified register of online courses by integrating educational platforms. The formation and maintenance of the register will be controlled by the Russian Ministry of Education and Science. The system aggregates information about all online courses in the country and the results achieved by students.

Since the COVID-19 pandemic global lockdowns greatly affected higher education by substituting conventional education with e-learning it is especially important to estimate the advantages and disadvantages of blended learning. The authors hypothesize that individual experience of learning during the pandemic has significantly influenced the attitude of students to the online formats and therefore suggest taking a fresh look at the possibility of forming an individual educational trajectory.

The article analyses and compares attitudes to e-learning in Russia and western countries before 2020 and beyond. Most of the research papers focus on the study of the digital educational environment on the part of educators rather than students. Therefore, the authors aim at discovering students' attitude to various forms of distant education: synchronous, asynchronous, and blended



forms of digital learning within the framework of personality-activity approach basing on the students' questionnaire results.

Materials and methods

The study is based on the data obtained as a result of a survey of third-year students (167 participants) of one of the leading Russia's universities. Students could choose whether to fill out a paper version of the questionnaire or a google-form. The choice of 3rd year students was determined by their experience of studying in the traditional system of the university and the transition to an online format using various digital platforms during the pandemic. This sample allows getting a more objective idea of the advantages and disadvantages of digital learning from the students' point of view. Students assessed the individual experience of using online platforms before and during the pandemic; the importance of digital platforms in learning a foreign language for specific (professional) purposes; the possibility of forming an individual educational trajectory; the advantages and disadvantages of blended learning. Students assessed their own readiness for the transition from the traditional educational environment to the digital educational environment of the university.

The survey was conducted on a voluntary basis, the sample is not probabilistic. Date - 03/22/21 - 04/03/2021. For the purposes of this study, the digital educational environment of a university means the use of digital educational platforms, university portals, social networks, instant messengers and electronic resources to organize the educational process under lockdown conditions and at normal times.

The authors use a range of various methods. The method of surveying was used to acquire the data from the students for the further analysis. The comparative method was used in the Discussion to identify the differences between the results obtained by the authors and the results given in the research carried out by foreign and Russian scholars. Statistical analysis of the data was used to find out the attitude of students to various forms of learning.

The validity of the obtained scientific results is determined by the representativeness of the sample and the adequacy of the set of methods applied to the goals and objectives of the study.

Theoretical background

On the early stage of development and piloting of online courses within the framework of the above-mentioned state programs, Russian and foreign researchers focused mainly on the benefits of e-learning and on recommendations for its further development (Knox et al., 2020; Dahlstrom et al., 2014; Lysova et al., 2020). It is stressed that e-learning provides students with more free time available due to absence of necessity to commute and motivates them to set up their educa-



tional tasks and priorities as well as to make up their individual schedule to achieve better academic results. Besides, innovation and new digital and educational approaches are likely to boost their motivation to learn. M. Bušelić (2012) highlights increased opportunities for updating, retaining and personal enrichment as well as consolidation of educational capacities. M. Pezzino (2018) claims that immediate feedback of supervised online learning (Hoi, 2021) based on multiple-choice questions which are especially designed to adapt to students' academic performance, is likely to reinforce students' understanding while visual learning enhances their perception. D. Herloa (2015) insists that blended learning arouses students' curiosity about the content and facilitates their intrinsic motivation. However, the coronavirus pandemic became a quality evaluation test for the effectiveness of digitalization in education. The COVID-19 pandemic caused flipped classrooms which ultimately affected the quality of education. Some countries (Latin America, Argentina, Chile, Zimbabwe, Malaysia, Pakistan) were unable to switch to online learning in no time for a number of reasons: lack of material and technical support, low digital literacy of the teaching staff, lack of broadband Internet networks, digital devices, low living standards and others. Developing countries and students from disadvantaged backgrounds were hit hardest. According to UNESCO, 826 million students, or half of the total global student community, lost access to higher education because they did not have a computer, and 706 million because they lacked access to the Internet (UNESCO Homepage).

After the implemented global transition to distance education and a year of online work, contemporary studies of the digital educational environment started highlight the drawbacks of online education. The main indicators of the unpreparedness of the universities for distance education were shortage of online resources, lack of independent educational platforms and courses, low level of digital literacy among teachers, and lack of pedagogical methods of using digital tools (Lindfors et al., 2021). Abe (2020) and Rasheed et al. (2020) highlight that teachers' skepticism about online teaching effectiveness aggravated the situation. Both digital illiteracy and technological challenges led to technological resistance when teachers would prefer resorting to conventional face-to-face teaching method, refusing to adopt new technologies or adapt the existing methods to the new technology. Reluctant to accept that transit to online education, even as a component of blended education is inevitable and becomes a new norm, teachers preferred to notice the drawbacks of online learning - students' inactivity during online classes, increased cheating, mental and emotional exhaustion. Online classes are far more energy consuming if one wants to keep their students involved in the learning process and material preparation for them takes much more time. To prevent cheating teachers had to tighten control over students' academic achievements by numerous tests and assignments. Test designing as well as check reviews contributed to teachers' work overload (Sage & Sele, 2020; Wanner & Palmer, 2015).



E-learning during the lockdown not only caused some health problems related to sedentary lifestyle but problems with eye-sight as well. Other obvious drawbacks cited by scientists are suffering from isolation and absence of social-physical interaction (Bušelić, 2012), distraction of attention, reduced motivation, dependence on technologies and consistent Internet access.

In terms of psychology, learning activity consists of cognitive, behavioral and emotional components. In conventional educational environment information availability, conducive emotional landscape and students' positive mental states are disentangled and make a crucial impact on both their motivation to learn and new knowledge comprehension. But the lockdown caused by the coronavirus infection and the subsequent comprehensive implementation of online education all around the world affected the correlation of these components (Kononov & Komissarova, 2021). Enforced isolation could not help but had an impact on students' psychological well-being. It led to stress, anxiety, irritability, and in some cases to depression. Eventually, lack of personal communication and live interaction in the learning process negatively affected students' psycho-emotional states and reduced their motivation to study as well as their comprehension abilities. Scholars claim that loss of interest in educational activities naturally affects students' attitude towards the chosen field of study and the perspectives of their professional career (Solovyova & Konev, 2021).

In the course of human history, the coronavirus pandemic is not the first one to impose isolation as a preventive measure. In the contemporary world the younger generation estimates socialization in social nets no less important than face-to-face communication, and consequently, virtual communication may have mitigated the negative impact of isolation. Both developed IT culture and digital technologies could have alleviated the loss of the conventional model of reality and transition to the online communication but in fact they turned out to be of little help. Scholars mark the appearance of such a phenomenon as presence deficit (Solovyova & Konev, 2021). Online classes appeared to be less inspiring for students due to the lack of lively communication. In class, educational activities are more informative by their nature due to non-verbal communication, deeper engagement in the educational process, fast pace of communicative exchange and the phenomenon of co-presence which implies mutual obligations of the participants. Co-presence contributes largely to establishing trust between the teacher and the students as well as it is conducive to soft skills development, generates scientific interests, and it motivates students to major in a particular professional field. On the contrary, online classes alienate students due to routine communication patterns, work overload demotivates them, relaxing cozy environment and distractive external factors altogether reduce their attention and comprehension ability. All the abovementioned factors are highly likely to build up communication barriers. So, in the long run, presence deficit leads to students' loss of motivation to learn,



negatively affects their communication skills and causes some psychological problems.

Online learning is implemented on a variety of educational platforms, both internal and external. However, analysis of online classes during lockdowns shows a decrease in student activity (Decuypere et al., 2021) as well as their limited form of participation (Decuypere & Landri, 2021). Online education is not good for covering a lot of content. To meet the growing demand for online education and distance learning conventional offline courses are converted into online ones and as a result are modified, in fact simplified and standardized due to the limited technical capabilities of existing educational platforms. Indeed, it is the technologies that must adapt to the educational content and objectives, since they are nothing more than a supporting platform. What is more, strengthening the entertainment aspect of the distance education course, which has now acquired the term "gamification of education", contributes neither to the psychological maturation of the student, nor to their understanding that the working process has nothing to do with entertainment and does not meet the employee's individual needs. Such an entertaining and non-binding approach to education creates a certain upbringing environment for the new generation of zoomers who are not ready to face criticism, do not consider someone else's opinion authoritative, have a superficial set of knowledge, easily get tired of monotonous work, have weak communication skills and at the same time are able to multitask. But in their case multitasking is rather equal to inability to concentrate on one task. Thus, they are easy to distract their attention, for example texting a friend while listening to a lecture.

Access to a variety of online courses has provided opportunities for the formation of independent educational trajectories. However, the research shows that very often self-directed educational trajectory will distance students from formal educational institutions (Erstad & Silseth, 2019) and blur the line between formal and nonformal education (Bronkhorst & Akkerman, 2016). Online education advocates criticize modern educational programs for excessive theoretical knowledge while praising the ability of the new generation of students for their skills in using the World Wide Web to find information and use Internet educational content. Their opponents, represented by current university professors, point to the lack of skills of the modern generation of students to analyze, generalize and contrast information, work with scientific texts, and use scientific arguments. Today it is not difficult for a student to find information, but what really takes a lot of time and effort is independent comprehension, processing, systematization and analysis of the acquired information and scientific knowledge. To gain knowledge, a student needs not only to get acquainted with the material, but also to present it in one of the forms available at their stage of learning: an essay, an abstract, a report, etc. Modern computer technologies are not yet able to replace the teacher in assessing creative work, although the rigid structure of written work typical for English and American universities, already places importance on formal criteria, rather than content. Lack of skills and self-assessment criteria does not allow students to assess



whether they have mastered enough knowledge and developed expertise in a particular scientific field and in which direction they should continue their trajectory of individual learning and acquiring new competences.

Since higher education can now be characterized as data-driven, many researchers raise concerns that a full-scale transition to digital platforms could lead to education datafication (Decuypere & Landri, 2021; Knox et al., 2020), which evokes a number of ethical questions: Who will be given access to students' files; What purposes will it serve, etc. 'Platforms are becoming central to how universities are organized, managed, and measured' (Williamson, 2021, p. 63).

Study and results

After two semesters of online education, of which the second one (Fall of the 2020/21 academic year) involved blended elements, a survey was conducted among students of a leading Russia's university. Its purpose was to inquire into the pace of the formation of digital educational environment in the university and to get the idea of the students' attitude to distance and blended learning formats. The survey involved third-year students who had experience of one and a half years of learning in a traditional format, a semester of distance learning and several months of blended learning.

The results showed that prior to the lockdown, only 41% of students had used online platforms or resources. Most often these were YouTube, Lectorium.tv, courses organized by museums, and their content was aimed at developing a general cultural level. Only a small number of students with a special focus on learning (7%) admitted that they had used the Edx, Coursera and Sinkhronizatsiya platforms in order to improve or advance their level of knowledge. None of the students surveyed used online language courses to learn their first foreign language. However, a number of students (24%) had attempted to use applications, in particular Duolingo and Lingo Play, or take a language course in Instagram at the initial stage of learning a second foreign language. According to feedback, the study program was based on elements of a game or competition with other participants; it required self-discipline and provided minimal feedback from the teacher in case of an Instagram supported course. Accordingly, progress was minimal. This result did not frustrate the students, as they perceived these apps and courses as shortterm entertainment and did not expect any meaningful results.

After the forced transition to digitally-enabled remote learning in March 2020, students had to plunge into a digital educational environment. The University's own online courses in a number of programs (law, finance, economics, political science and others) are hosted on the Coursera, Moodle, and Stepik platforms. Also, during the training, students were recommended to familiarize themselves with various courses, for example, on the Council of Europe HELP platform. Some students (23%) took free online courses presented on the platforms of leading foreign universities on their own initiative: namely, OpenCourseWare. In the context of the pandemic,



students' approach to self-study has undergone significant changes. Most importantly, online education has ceased to be an entertainment, but has turned into a way to join the school of leading foreign universities. Secondly, it provided them with an opportunity to build up an individual approach to learning. And thirdly, the novelty and accessibility of online courses, primarily those of American universities, served as a good incentive for some students to deepen their knowledge on their own. According to the survey, all the courses taken by the students were related to their area of specialization. Since the courses were taught in English, in addition to studying a certain discipline, students had an attendant opportunity to polish the language of the profession. As for language courses, the number of students (as little as 3%) who enrolled in them during the lockdown period were preparing for the TOEFL exam to obtain a Master's degree in American universities. The rest of the interviewed students stated that the quality of language classes at the university was satisfactory and they did not need additional classes of a foreign language.

Among the numerous disadvantages of distance education, students identified time-costliness, technical problems, and poor feedback from teachers. Distance learning requires strict self-discipline, whereas the home environment, the ability to turn off the camera and the microphone, not to mention the presence of additional gadgets with Internet access, seriously contribute to distraction of attention. During the first distance learning sessions students showed up at the desks decently dressed, hair and faces in proper order. By the end of the semester, more than 80% of students no longer cared about their appearance, moved to arm-chairs or sofas, and some of them, waking up 10 minutes before the start of the online class, listened to the lectures staying in bed. Abusing the opportunity to study anywhere at any time, some students even considered it normal practice to join online classes during a meal in a cafe or driving a car. Such a relaxed and frivolous approach to learning could not but affect the quality of education, which is confirmed by 89% of the respondents.

Answering the question: "Would you like to keep the blended form of education in the future?" – 66% of students answered in the affirmative. Their main arguments in favor of this format were the desire to ease the burden of the working week and the possibility of forming an independent educational trajectory. A return to in-class education was supported by 24% of the respondents. They explained their choice by higher responsibility for academic performance, the level of control on the part of teachers, greater opportunities for clarification and processing of the material in a conventional in class educational environment. 10% of students were in favour of continuing their studies online.

Discussion

The results of a survey conducted by the International University Association showed that 24% of higher education institutions worldwide were not ready for



a transition to online and distance learning (International Association of Universities Homepage) and had to suspend teaching process to develop solutions to continue teaching and learning, while 7% of universities did not have a plan to support students in the transition to distance education and they had to cancel teaching process (European Union Homepage). In Russian universities, in the spring of 2020, the situation was similar. Shortage of logistical support, problems with Internet speed, insufficient digital competence of the teaching staff and resistance to the possibility of switching to online education – those were among the many serious problems that universities faced once the lockdowns were announced - eventually aggravating the instant switch to online education. Unlike Western universities where the university websites not only contain basic and introductory information, but also serve for work submissions and provide students with access to their progress, most of the websites of Russian universities do not support feedback. "Teacher-student" communication in Russian universities is predominantly face-toface. The teacher's email address may be available to the student, but one-way communication is common practice. Unlike their Western colleagues, the Russian teachers seldom organize groups in social networks to furnish their students with day-to-day information, and are reluctant to maintain websites where they would share lists of resources, books, publications or other posts related to the discipline they teach. Distance learning forced many teachers to give their contacts, create groups in WhatsApp, still the feedback was kept at a minimum level. According to students, poor feedback, if any at all, had an adverse impact on the formation of the digital educational environment of the university.

Scarce computer skills on the part of some teachers led to problems in connection to online conferences, insufficient use of the technical capabilities of Zoom, Teams, Discord platforms. But it was only part of the broader technical problem. External communication breakdowns interfered with a full-fledged lesson, and an interruption of the conference during an exam or credit threatened to end in a retake due to the increased occurrences of academic cheating in online education.

Among other disadvantages of online learning, as indicated in the students' survey, are an increase in self-study assignments, including such disciplines as physical education; the lack of live communication; and teachers' strong doubts about students' scrupulousness in completing their assignments – both at home and in class.

Among the main advantages of distance education, students indicated reduced commuting time, the ability to manage time and workload, as well as a variety of options for working with recorded lectures. The absence of the need to travel to university saved students up to three hours a day and allowed them to get up later. The opportunity to listen to recorded lectures was positively perceived by the majority of students – 78% of the respondents. The main advantages were the possibility of repeated listening to lectures, adjusting the listening speed, rewinding the material and the ability to replay, as well as team note-taking – when



a lecture is divided into several parts and the students in the group split up responsibility for writing it down. Besides, recorded lectures can be listened to at any convenient time, and teamwork reduces the time spent on homework.

Other pros included financial benefits by way of accessibility of free courses, a variety of information sources, the use of online resources, and an inclusive approach for students with health problems.

Despite all the difficulties at the beginning of the lockdown, the university managed to adapt the educational materials to a distance format, develop and implement online courses, and hold online exams. Three weeks after the transition to online learning, 98% of teachers at language departments and 92% of specialized departments switched to digital platforms. The survey in which more than 1,000 students took part in April 2020, showed that 88% of respondents rated distance learning as "very good" and "good", the remaining 12% – as "satisfactory". A poll of teachers at the end of the semester showed that only 13 percent of the university teachers consider the format of online education satisfactory, and only 6 percent defined it as a "useful and necessary experience."

Interpersonal communication of students in the digital environment was active both during the lockdown and beyond. It aimed at searching for educational information, academic cheating, and entertainment. Communication was carried out in social networks and instant messengers by creating various groups or individually. Online education became an encouraging factor to academic cheating. Even during the period of in-class education, students formed a bank of tests, copying and uploading tasks and answers to them. During online sessions Russian university teachers highlighted the problems of identifying a student if they worked with the camera turned off. In addition, displaying the test on the screen made it easier to copy it and distribute to fellow students. Immediate access to several gadgets made it possible to use Internet sources during a test or ask friends for help. The introduction of original online courses and tests with a wide range of random questions and proctoring programs partially allowed teachers to cope with this problem. However, complete eradication of this problem in Russia is hardly possible at the moment for ethical reasons. Although much has been done by Russian universities to promote the principles of academic integrity, the situation leaves much to be desired. The main factor is the tacit support of fellow students. Helping to cheat is perceived as helping a friend, while reporting to a teacher on cheating is condemned as snitching. Both digital educational environment and insufficient control tools provided students with a wide range of possibilities to cheat. The declining online control over independent seatwork has presented educators with a choice: choose the presumption of trust or seek ways to tighten the controls on academic integrity. 74% of the students surveyed admitted that they had resorted to some method of cheating during online education. However, more than half of the students expressed dissatisfaction with the measures taken by the teachers to tighten up, such as reduction in the time to complete the assignment, an expanded list of exam questions, on-the-spot answer, or use of proctoring



programs. Overall, 59% of the students noted the convenience of a digital learning environment, with 22% of students rating it as an excellent opportunity to increase their academic grades by cheating.

Conclusion

The digitalization of education in compliance with the political demand for increasing the competitiveness of universities by becoming more data-driven and market focused, is taking the form of a business model, the so-called platform-capitalism (Williamson, 2021). The promotion of digital technologies, ranking systems and datafication, the use of marketing strategies and the consumerization of higher education are gradually turning universities into market actors, changing their essence and leveling the meaning of higher education. If before the pandemic 'e-learning was hyped and its criticism was rejected as backwardness' (Lindberg, 2020, p. 385), now the forced transition to online learning caused by lockdowns has revealed that digital educational platforms are more likely an expensive commercial product that alienates students from classical higher education, destroying authority and leveling the role of the teacher as a translator of knowledge. The survey of students revealed that the use of the digital educational environment by their free choice to deepen and broaden their knowledge in subjects they major in was negligible before the COVID-19 pandemic. However, despite a number of obvious disadvantages the overwhelming majority of students are in favour of preserving blended education, which combines the benefits of both in-class education and online tools and resources. Freedom in forming individual educational trajectories looks justified, but forms and methods of their creation require a balanced approach and careful consideration.

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