

City manager's resources and optimization of the online education system

Julia Isakova^{1} and Alexander Ponamaryov²*

¹Don State Technical University, 344010, Rostov-on-Don, Russia

²Southern Federal University, 344006, Rostov-on-Don, Russia

Abstract. This paper attempts to assess the resources of the City Manager to optimize the system of online education. The need to develop a Russian platform for the implementation of online education is justified by highlighting the main problems: technical, organizational, and pedagogical. It has been established that the problems described above are related primarily to the platforms on which the online education process is implemented. The authors evaluate the functionality of popular services used by Russian universities and conclude that their tools do not meet the goals of online education and do not allow realizing its potential. A pilot concept of an online-education platform, which is supposed to be created within the framework of public-private partnership, is presented. It is recommended to realize large projects, which require significant investments, as a part of cooperation of authorities, business community and science, and the emphasis is made on this aspect in the process of project concept creation. The main forms of interaction between the actors involved and the areas of their responsibility are considered, recommendations for the selection of the most appropriate procedure for the development of the platform for online education that meets the needs of students and teachers are given. It is concluded that such an initiative will help to overcome the main obstacles facing online education and bring it to a new level by combining the efforts of government and business.

1 Introduction

The current situation in the education market demonstrates the tendency to intensify the process of digitalization of education. The most promising form of information technology is online education. It lies in the practical field of activity, but it is also subject to scientific comprehension. Russian and foreign researchers focus their attention on problems and prospects of online education, and they see a lot of advantages and disadvantages in it. In post-crisis Russia, where funding for education is stably decreasing the advantages of city management model that can increase the effectiveness of online education are highlighted [5]. Makarov revealed promising directions of online education development in Russia [6], Markova focused on the analysis of online education market consumers [7], and G.A. Shabanov considers online education in pedagogical aspect [13]. Innovations in educational process are implemented most quickly at foreign universities, that is why Western scientific

* Corresponding author: isakova.pravo@bk.ru

discourse is full of works which discuss various aspects of online education. Martin, Sun and Westine found that during the period 2009-2018 more than 600 papers were published about online education [8]. Online education scientific study was popularized during the world pandemic of covid 19 and researchers from all over the globe began to reflect on the work of the educational system in the format of self-isolation [14]. The need to learn how to work remotely as quickly as possible increased scientific interest in distance learning methods [1]. But, in our opinion, the most unexplored question is about the precarious nature of institutionalization of online education in the countries which do not have a high degree of digitalization of the educational sphere. The Russian Federation is among such countries.

The issue of organizing the educational process in the online mode was solved in haste and the scientific community did not have enough time to analyze the experience of providing educational services and the problems associated with the practical implementation of online education. Let us start with the fact that Russian online education is not being implemented through specialized software designed for educational purposes, but through video communication programs which do not have the tools to provide high quality educational services. The most popular programs for the implementation of online education in Russia are Microsoft Teams and Zoom, where the latter is the most popular platform among universities, and the former is positioned on the market as software for business conferences. It is safe to assume that education attempted to "fit" in the platforms for business meetings and uses limited tools, not allowing online learning to work at its full capacity. This testifies to the spontaneous institutionalization of new educational practices and makes us aware of the need to develop an educational platform, built not only around video communication, but also with other tools, necessary for the educational process. It should be noted that reputable Western universities have their own proprietary educational platforms ensuring complex interaction of all the subjects of the educational process in the digital space [2]; however, there are no proven projects of this level in Russia at this moment. For this reason, it is necessary to try to develop a fully valuable platform for the implementation of online education in Russia. Since this process is complex, requires considering the interests of many subjects and significant investments, we see the greatest prospects in the alliance of the federal university, municipal authorities and the business community. Joint participation of the above-mentioned actors meets modern tendencies of combining power, science, and business, and allows to solve many problems of this or that municipality and satisfy the interests of a wide range of consumers. In the Russian social reality, the largest and most ambitious projects are always initiated by the government, which mobilizes active citizens and private capital. In the Russian institutional space, a city-manager has organizational competencies, administrative resources, and authority, which allow uniting interests of many actors, he must become the center of creation of such a platform. In the framework of this work, we set a goal to analyze the prospects of development of the Russian educational platform, focused on online education services, and evaluate the resource potential of the city-manager in the organization of this process.

2 Materials and methods

The paradigmatic basis of the study is the new theory of institutions, which positions municipal space as a site of collision of interests of many actors, where their correlation is a basic requirement for the stable development of urban space in the interests of the local community. The main methods of research are the analysis of documents, scientific literature, synthesis, and analogy. The results of the study are achieved by applying the project method. The study is practice-oriented and aims to build the concept of a domestic platform for the implementation of online education, to formulate its main characteristics and

features through the analysis of problems of Russian online education based on opinions of Russian and foreign researchers.

The empirical basis for the research is quantitative and qualitative studies of Western and Russian specialists in online education and surveys of consumers of educational services [4, 10]. Our study implies the following structure: identifying problems of Russian online education in higher education by identifying the range of problems it faces, justifying the need to develop a Russian online education platform and describing the conceptual framework of the project, including the definition of its implementation subjects, the extent of their responsibility and forms of cooperation

3 Results

Let us begin by justifying the importance of the Russian educational platform project for the implementation of online education through the formulation of the main problems of this type of education.

The problems of online education can be divided into several areas:

- 1) technical;
- 2) organizational;
- 3) pedagogical.

Technical problems are the most important obstacles in realizing the potential of online education not only in the Russian Federation, but all over the world. During the coronavirus pandemic many countries were faced with the need to suddenly switch to online format, which was associated with several problems of technical nature. The first and most important problem is the Digital Divide, dividing the consumers of municipal services into those who can do online with comfort and those who have considerable difficulties with it [11]. Different operating systems of personal computers and smart phones, differences in the speed of Internet connection, quality of microphones and webcams, as well as problems of optimization of popular software with outdated gadgets are the issues lying on the surface. The second technical problem is digital literacy. It has also had a negative impact on the educational process online. Users accustomed to working in Microsoft Teams need a considerable amount of time to learn working with Zoom tools and using to the less popular Hangouts program is associated with an even greater lack of user understanding. Here we see the lack of unification of online education platforms. So, the technical problems of online education are associated with the lack of optimization of software and unification of tools, which negatively impact the experience of users studying online.

Organizational problems are second in importance, as poorly organized educational process has a negative impact on the final educational product. Here we distinguish two problems: the use of non-specialized software by universities and the lack of opportunities to optimize its tools. As mentioned above, the vast majority of Russian universities use videoconferencing software in order to implement online learning. This means that higher education institutions in fact use platforms not designed for online education. They lack important tools for educational activities (e-accounts, checking homework, the ability to solve tests online, the ability to play video, etc.). There is a situation where users are forced to switch from one program to another to implement simple tasks. The test should be written on the official website of the university, a lecture should be heard in a video conferencing program, the marks should be checked on the website, and to communicate with a teacher you must use archaic e-mail or phone. All the above-mentioned allows online education to function and fulfill its tasks, but it does not provide the necessary degree of satisfaction for consumers of educational services. For this reason, the transition to specialized educational platforms is necessary. The easiest and most obvious way is to rent a foreign platform with a good reputation, but this has its own nuances and disadvantages. Firstly, long-term renting

of foreign platforms for online studies lead to significant financial expenses, secondly, it is impossible to make changes in it, as the source code is proprietary, and thirdly, the educational environment is also related to the data obtained from scientific research, which may be important for national security or copyright compliance. Data on Russian users is processed by foreign specialists, which makes it almost impossible to comply with cybersecurity requirements and control the safety of information of commercial importance. The security services tend to tighten their control over foreign software, which raises concerns about the need to suddenly stop using software that does not meet the cybersecurity requirements imposed by the law enforcement agencies. It is obvious that the transition of online education from one platform to another will be associated with numerous organizational and technical difficulties, so the most rational way out of this situation is the transition to a Russian platform, developed for the needs of the university and having the ability to be optimized for the domestic target audience.

The pedagogical problems of online education are often associated with inefficient organization of the educational process. Russian online education is not in fact an online education, but only a digitized version of distance and classical learning. Online education implies a different approach to the interaction between a teacher and a student, which implies that a teacher becomes a consultant and supervisor, who guides a student in the necessary direction, but encourages independent learning. In the Russian practice of online learning students are often "abandoned" and faced with the need to study independently on the basis of materials prepared by the universities in the form of pre-recorded lectures and a list of self-studies, which require timely implementation. On the other hand, online format is also used as a substitute for face-to-face interaction with a teacher. The use of classical lectures in online format is not considered to be effective and is not used in the foreign online education [15], but in Russia this format is used at least due to the lack of possibility and desire of specialists in methodological work to adapt the programs of disciplines to the requirements of online education. Thus, the mismatch of pedagogical approaches and didactic principles to the format of online learning leads to the decline of students' interest in the educational process and their motivation. Online-learning implies a continuous asynchronous contact between teachers and students, which is realized by relying on the strong points of the Internet, as well as the availability of tools for carrying out many important operations. Project-based learning, which is considered to be one of the most promising directions of interactive online learning, cannot be realized without an educational platform prepared for it, where students can work in groups and perform operations more complicated than showing a presentation and inserting a link to a video. We can say that learning with the help of programs not designed for educational purposes is simply uninteresting. An educational platform, which allows you to integrate students and teachers in an indissoluble online community, which has all the necessary tools for contact and non-contact interaction, along with an understandable interface, will increase students' motivation to learn and make their educational experience much more pleasant.

Now let us review top 10 factors students consider when choosing an online program.

As you can be seen from the picture, affordability and reputation are valued by students, and proves that lack of optimization and using non-educational online learning platforms will have a negative impact on Russian e-learning in higher school. Affordable platforms can be interpreted as usable by cheap gadgets and older PCs and reputation is directly related to the choice of the platform. If a university attempts to use a non-educational platform like Zoom and Microsoft teams for online learning than it will inevitably lead to negative consequences for the reputation of the educational institution.

Top 10 Factors Students Consider When Choosing an Online Program

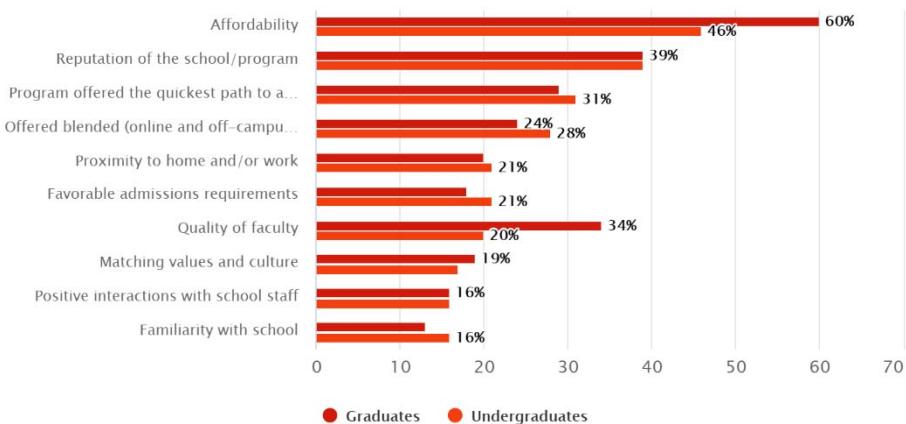


Fig. 1. Top 10 factors students consider when choosing an online platform. Source: <https://www.guide2research.com/research/online-education-statistics>

Online learning is considered a “mobile” learning, which means that it can be used at any place and at any time. This means that students can use their cell phones to access educational materials and tasks. A study conducted by Guide2Research confirms that American students use smartphones for their educational tasks 67% of the time. Obviously, in Russia the situation will be the same, but in Russia the number of outdated or low-budget smartphones is much higher, which suggests that poor optimization of online learning platforms for cell phones will have a serious negative impact on the quality of the educational process. Let us look at the experiences of American students using cell phones for educational purposes.

The Extent of Mobile Usage for Mobile Learning

By Percentage of U.S. College Student Users

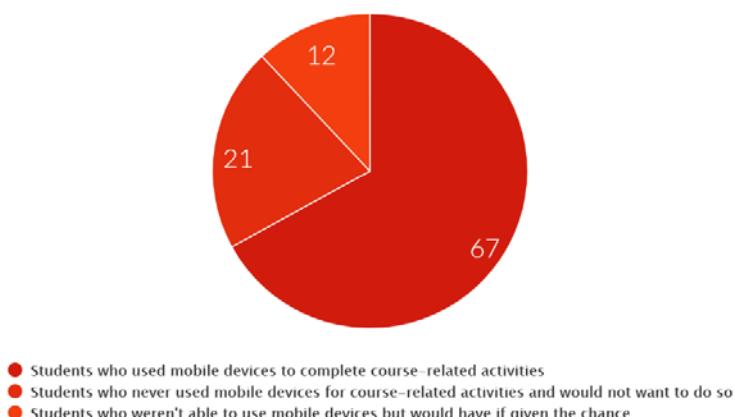


Fig. 2. The extent of mobile usage for mobile learning. Source: <https://www.guide2research.com/research/online-education-statistics>

Three above mentioned problems of Russian online learning led us to the understanding that their solution is possible through the creation of an educational platform, which meets the technical requirements and is optimized for the Russian audience and allows to unlock

the full potential of online learning with specialized software, designed to serve the educational sphere. Let us move on to the formation of a pilot project of such a platform and describe the main areas of work for its implementation.

4 Discussion

In Russia, large projects involving significant investments are implemented under the wing of the state or a municipality that accumulates large capitals of government-affiliated entrepreneurs. This means that in order to make the Russian online education platform transparent and attractive to investors, it should be implemented with the help of public-private partnership mechanisms. This includes public-private and municipal-private partnerships, as well as concession agreements. Global trends of education development indicate that the influence of private capital on general educational institutions and universities grows every year [3]. This is explained by the fact that the implementation of large educational projects is impossible only due to investments of the state or municipality [12]. Neoliberal management trends dominating in many countries define effective public organization as a synthesis of science, government, and business [9]. This alliance allows achieving the highest results and its importance in the context of creating educational platforms is higher than ever.

Let us start by defining the level of the project. The start should be made at the level of interaction between the federal university, municipal authorities, and representatives of regional businesses. Rostov-on-Don and Southern Federal University easily fit into the situation described above. At the moment, Southern Federal University has sufficient resources and authority to develop its own online platform to replace Microsoft Teams with a more specialized analogue. Rostov-on-Don is the city in which SFU is located, and the connection between local authorities and this university is constantly maintained and strengthened. The relationship between the municipality and SFU is cordial, and it can become a basis for a joint project. Rostov-on-Don was not chosen by chance, because it is one of the most advanced cities in the sphere of IT projects development and has a sufficient number of companies, specializing in proprietary software development.

Thus, the resources of the city's city manager, who can combine private and public capital, become particularly attractive. The city manager is a contracted head of the municipality and has experience in organizing and coordinating major projects and organizations. His connections with the local business community also make it possible to involve entrepreneurs in the project both at the level of investors and active developers. It should be decided whose property the online platform will be. This will depend on the format of interaction between the government and the private sector. If concession is chosen, it will belong to the municipality, and private partners will operate it according to the established agreements. If public-private partnership is used, the online platform will be privately owned, but will report on the results of its activities to the public partner, i.e. the municipality. Next, it should be established how the obligations to finance the project will be divided. According to the legislation, it may become an object of co-financing of private and public partner, where the municipality will hold 49% of shares and will have the opportunity to participate in decision-making regarding further development of the project. Participation of the public partner as a co-financier, who does not finance the project, is also allowed. In this case the support of the municipality will only be realized in information and legal support, which is not a desirable scenario. We recommend applying instruments of public-private partnership and implement the project as a joint work of the municipality and private business. The position of the university in this case will consist in consulting the executors of the project and creating the terms of reference, as the space for online education, made in the format of specialized software, is created for the needs of higher educational institutions. This also explains the

fact that the performance test of the system will also be the responsibility of the university and other educational institutions that it sees fit to involve in the development.

The participation of the municipality in the project will partially cover its cost and reduce the economic risks, while the private partner, which undertook the development and financing of the project, will be able to profit on its operation. We recommend creating such a project exactly in the format of public-private partnership because the resources of the city-manager, as an authoritative person with connections with local entrepreneurs and investors, will provide invaluable assistance in developing a platform for online learning, and the format described above implies receiving benefits by many significant social actors.

5 Conclusions

Summarizing all the above, we can conclude that the problems of Russian online learning are associated primarily with the inconsistency of the tools used with the necessary requirements aimed at ensuring interactivity, the necessary instruments for academic and scientific work. Technical, organizational, and pedagogical problems of online learning can be partially solved by optimizing the process of online learning by replacing unsuitable software with specialized and prepared for higher education institutions. Renting foreign platforms is not feasible for cybersecurity reasons, optimization for Russian audience devices, and the inability to change the toolkit of the program itself.

Our proposed online platform by design should not only meet the needs of students and teachers in the south of Russia, but also have the prospect to be exported to other regions and higher educational institutions in Russia and neighboring countries experiencing a crisis in the organization of online learning.

We see further prospects for the study in conducting empirical research related to interviewing experts from the municipality and business community, surveying students and teachers about the tools they want to see in the new educational platform and proposing the project for actual implementation in the regional economic forums

References

1. A.R. Artino, The Internet and Higher Education **13(4)**, 272-276 (2010) doi.org/10.1016/j.iheduc.2010.07.005
2. D. Benta, G. Bologa, I. Dzitac, Procedia Computer Science **31**, 1170-1176 (2014) doi.org/10.1016/j.procs.2014.05.373
3. J. Kim, M. Han, Procedia - Social and Behavioral Sciences **177**, 100-103 (2015).
4. Alexander V. Dyatlov, Vitaly V. Kovalev, Svetlana A. Tikhonovskova, Liana R. Barashian, *City Management in the USA and Western Europe: Historical Background and Implementation Experience*, Public Administration and Regional Management in Russia. Challenges and Prospects in a Multicultural Region. Chapter 8. Springer Nature Switzerland AG 2020.
5. V. Vodenko, V. Dyatlov, V.V. Kovalev, *Administrative and Social Consistency of the City Management Institution*, Public Administration and Regional Management in Russia. Challenges and Prospects in a Multicultural Region, Chapter 9. Springer Nature Switzerland AG 2020. Makarov, M.V.: Prospects for online education in Russia. Modern education **2**, 59-69 (2020) doi: 10.25136/2409-8736.2020.2.29088
6. E.S. Markova, N.N. Zyuzina, E.A. Zyuzina, Bulletin of VUiT **3(46)**, 109-118 (2020).
7. F. Martin, T. Sun, C.D. Westine, Computers & Education **159**, (2020) doi.org/10.1016/j.compedu.2020.104009

8. A.A. Mikheev, E.A. Shutikova, Law and management, XXI century **2 (35)**, 73-78 (2015).
9. G.M. Rafique, et all., The Journal of Academic Librarianship **47(3)**, (2021) doi.org/10.1016/j.acalib.2021.102346
10. J. Rowsell, E. Morrell, & D. Alvermann, The Reading Teacher **71(2)**, 157-165 (2017).
11. H. Schachter, J. Daniel, & R. Liu, Public Administration Quarterly **41(4)**, 643-669 (2017) doi:10.2307/26420255
12. G.A. Shabanov, Higher education today **5**, 9-12 (2017).
13. S.S. Shah, et all., Online Revista de Psicodidáctica (English ed.), (2021) doi.org/10.1016/j.psicoe.2020.12.003
14. Stavros Demetriadis, & Andreas Pombortsis, Journal of Educational Technology & Society **10(2)**, 147-157 (2007) doi.org/10.1057/s41274-016-0109-z
15. A.M. Mohammed, Ain Shams Engineering Journal 1-6 (2021) doi.org/10.1016/j.asej.2021.02.012.