How Higher Educational Institutions Integrate Moocs: Objectives, Results and Hindrances

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Abstract: The research paper explores the objectives and challenges of massive open online courses (MOOCs) in higher educational institutions (HEIs) and their implementation. It highlights the rapid pace of digitalization and budget savings, which have prompted a rationale for MOOC production and expansion. The paper also examines the first attempts of Russian universities to introduce MOOCs. However, the objectives set have not been fully met due to limited mechanisms and tools. This suggests that MOOCs may not be an inclusive solution for universities producing them, but they could be beneficial if integrated into organizational development strategies. The paper's limitations lie in its use of non-research papers, and further research could clarify these ideas. The findings suggest enhancing MOOC project efficiency and providing fresh perspectives for Russia.

1 INTRODUCTION

While universities are in charge of assessing and upgrading projects, the Russian Ministry of Science and Higher Education publishes a yearly monitoring of the effectiveness of higher education institutions. Meanwhile, the accessibility of this information could contribute to a more effective implementation of similar projects by other universities and could improve the efficiency of the higher education system as a whole.

This research paper examines the project of Massive Open Online Course (MOOC), which was first launched by the U.S. universities nearly a decade ago, and has since appeared in hundreds of universities around the world, including most of the top ones (MOOCs: a massive opportunity for higher education, or digital hype?, 2012) and even the oldest ones (Shah, 2013), and this growth has not stopped (Shah, 2018). According to statistics from the largest MOOC aggregator Class Central for the period 2016-2018, the number of products of this format increased at a rate of 2,000 courses per year, and the number of higher education institutions-developers amounted to 100 organizations per year (Shah, 2018; Shah, 2016; Shah, 2017). In Russia, the launch of these projects at universities is supported and even initiated by the government. The most ambitious initiative in this direction was the launch in 2016, the priority project "Modern Digital Educational Environment in the Russian Federation" (MDEE), the purpose of which is to 'improve the quality and expand the citizens' opportunities of continual education through increasing the number of students who have mastered online courses'.

One of the indicators of the effectiveness of the project is a multiple increase of the number of courses produced from 450 in 2017 to 4,200 in 2022. In 2017-2022, the federal budget of 1,5 billion rubles has been allocated for the implementation of MOOCs.

The development of online learning in Russia remains on the national agenda, appearing in the federal project "Personnel for the Digital Economy", in the national program Digital Economy of the Russian Federation and in projects within the framework of the national project "Education", for

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example, “Digital School” and “The Teacher of the Future”.

The university MOOCs in Russia appeared in 2014. (Lebedeva, 2015), and the first developers of courses in this format were the participants of the project enhancing the competitiveness of leading Russian universities, which were funded to strengthen their internationalization, enhance their academic reputation, produce world-class intellectual products and educational programs, develop relationships with other academic and industrial stakeholders, and increase the export of educational services (5–100: Proekt povyshenija konkurentosposobnostivedushhih rossijskih universitetov sredi vedushhih mirovyh nauchno-obrazovatel’nyh centrov. Ministerstvo nauki i vysshego obrazovanija Rossijskoj Federacii).

The stakes of the MOOCs made by the universities of the project 5-100 may be indicative by their use of a new educational format to achieve the goals set by the government, which are not mutually exclusive tasks, i.e. experimentation with the production of MOOCs set by the government in a resource-constrained environment. Later, MOOCs were produced by federal and supporting universities, as well as other higher educational institutions in Russia.

Based on the above mentioned, it is clear that both the government and the heads of higher educational institutions allocate significant resources for the development of online courses, even in the face of shrinking budgets. More and more new Russian higher education institutions, driven by federal initiatives for the digitalization of education and interuniversity competition, are launching relevant projects. It is obvious that understanding of the correlation between goals and results of MOOC production at universities, including foreign ones, would be useful for experienced developers to reflect and possibly modify their actions, as well as for those who are just planning to launch such a project in their organization. The U.S. colleagues made such an attempt 5 years ago, presenting an overview of expectations and advances in MOOC production (Hollands, Tirthali, 2014). Since then, such research studies have not been published, and consideration of the Russian context of MOOC development in higher education institutions has been presented superficially in the literature. Thus, the article's goal is to both outline the overall environment in which universities accomplish the objectives set forth in the MOOC development projects and to identify the challenges that they must overcome.

This research paper made an attempt to analyze and summarize data: 1) based on available English and Russian scientific publications to establish the goals of higher education institutions to integrate MOOC projects; 2) in the absence of Russian scientific papers to analysis the publications on the websites of Russian institutions of higher education that develop MOOCs, which include commentaries of the purpose of this activity by administrators; 3) review scientific and publicist sources reflecting the success of foreign and Russian institutions of higher education in achieving their goals, as well as the existing barriers. Recommendations for university administrators to measure and improve the results of these projects are also presented.

2 UNIVERSITY OBJECTIVES IN MOOC INTEGRATION

Two research studies on university goals for MOOC integration, conducted by Allen & Seaman (Allen, Seaman, 2014) and Jansen & Konings (Jansen, Konings, 2017), interviewed representatives from 2,831 US and 99 EU universities. They discovered that the institutional goals between the US and Europe are mostly identical. This is also demonstrated by the study conducted as part of the HOME (Higher Education Online; MOOCs the European way) initiative. See Figure 1.

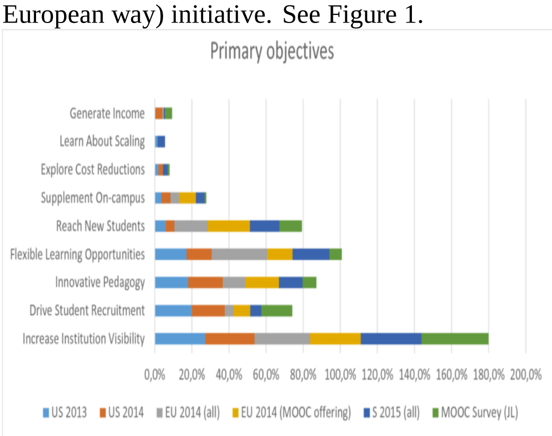

Figure 1: Results of surveys related to primary objectives of MOOC production in HEIs.

The data above suggests that despite the fact that institutional goals between the US and Europe are similar, the US are focusing on increasing institutional visibility and flexible learning opportunities, while European countries prioritize income generation and increasing institutional visibility. However, there are discrepancies in the importance of different goals, such as 'reach new students' in Finland and 'raise institution visibility' in Canada and Lithuania.

According to U.S. Zakharova, "in Russia similar surveys have not been conducted yet, and scientific papers presenting the results of researches on the given theme on a sample of administrators of various higher education institutions are not found in free access".

In this connection it has been decided to describe the Russian experience in MOOC integration based on the articles with comments from the MOOC developers as well as on the basis of available journalistic materials.

The question “What are the goals of the MOOC projects in Russian universities?” was answered in several stages.

Firstly, the list of Russian universities that presented their MOOCs on the largest world (Coursera, EdX) and domestic platforms (National Open Education Platform (NOEP), Lectorium, Universarium, Stepik, Rosdistant, Open Online Academy of the Financial University, Distance Education at RUDN Further Education) was drawn. As a result, 51 universities from 11 regions (Moscow - 31, St. Petersburg - 7, Tomsk - 3, Vladivostok, Yekaterinburg, Kaliningrad, Krasnoyarsk, Novosibirsk, Omsk, Tula, Tyumen, Chelyabinsk, Samara - 1), 32 higher educational institutions are represented on one platform out of those counted, 10 - on two, 4 - on three (MIPT, ITMO, NSU, VSUT, RUDN), 3 - on four platforms (HSE, TSU, MEPhI).

Table 1: MOOC domestic platforms used by universities in Russia 2021-2023.

National Open Education Platform (NOEP)	15,8%
Stepic	13%
Rosdistant	7,9%
Online Education at HSE	5,8%
Universarium	4,8%
Lectorium	4,6%
MOOPED	4,3%
Open Online Academy of the Financial University	3,8%
Distance education at RUDN Further Education	3,1%
Other	31,9%

Source: statista.com

As illustrated in Table 1, only 40% of significant Russian universities have traces of the educational process in the digital environment (the placement of educational and instructional materials), whereas this percentage is close to 100% at the largest institutions in Europe and the USA.

Secondly, the official websites of the developing universities were searched for publications (key words: MOOC, online courses, the name of the platform where the university’s courses are located), which were then sorted by date and read in the order of cited purposes of MOOC production by the institution of higher education. Preference was given to those articles where the goals were presented in direct speech by the head of the organization or division responsible for the implementation of the project (Zakharova, 2019; Cooper, 2013). For the remaining 22 universities (18 Moscow universities, as well as 18 from Moscow and 1 each from St. Petersburg, Tula, Omsk and Samara) publications corresponding to the request could not be found; in three cases the reason was that the university website was closed in connection with a merger with another educational organization. It demonstrates the fact that one of the most frequent obstacles in the domestic academic environment for the thorough digitalization of universities is the incomplete understanding of the university management of their own potential and ignoring the administrative structures of the available information and communication resources, whose competent use would allow organizing effective systems of interaction with target groups.

Thirdly, in the selected articles, the goals of MOOC production at the university were correlated with the list of goals presented in the works of Allen E., & Seaman J. and Jansen D., Konings L. As a result, the following outcomes were obtained: access to the quality education as the goal of MOOC projects was stated by 18 HEIs, increasing visibility and strengthening the brand of the university by 8, improving the quality of education, providing flexible learning opportunities as well as to integrate online courses into the educational process by 7, to develop new educational technologies by 4, and making profit by 1 institution. Thus, the goals of Russian university supervisors mostly coincide with the goals of their foreign colleagues. The difference is that in Russia MOOCs are viewed as a way to improve the quality of the education that is already being provided and the visibility of the university in the international environment. Conversely, Russian universities do not declare such goals for MOOC projects, such as cost reduction and expansion.

In order to establish the extent to which these objectives are achieved, the following is a review of English and Russian scientific and journalistic literature on relevant topics. Since some of the goals overlap strongly, the review reflects the following consolidated topics: increasing access to quality education, increasing the visibility and strengthening the image of the university, attracting students, mastering online pedagogy, integrating online courses into the traditional educational process, as well as cost reduction and revenue generation.

3 EXPANSION OF HIGH-QUALITY EDUCATION

In the statements of foreign and Russian MOOC platforms, which provide access to online education, it is postulated most often in combination with the words “from the best universities”. In the face of a certain skepticism about the quality of learning of the online format, the developing universities themselves are seen as guarantors of quality. Nevertheless, the results demonstrated by MOOCs raise doubts whether the educational services suggested by the leading universities on online platforms are even of high quality (Cooper, 2013). Not least of all, this is due to the fact that MOOCs are evaluated according to the same criteria as traditional education. This contradiction is resolved worldwide by the systems of evaluation of e-courses and online courses. In Russia in the framework of the MDEE project, discrete measures are taken to create a system for assessing the quality of online courses and the organization of an expert group (Ocenka kachestva onlain-kursov).

The access to education promised by the MOOC format was perceived as a solution to the problem of inequality, but the analysis of a large number of beneficiaries shows that the typical MOOC attendee is a male from western countries, college-educated, professionally engaged, and wanting to improve his skills through self-directed online learning or learn new competencies (Kaplan, Haenlein, 2016). Socio-demographic portrait of the user on the largest Russian Open Education platform in Russia does not differ much from this description (Semenova, Vilkova, 2019). To summarize the opinions of researchers and experts, the reasons for unmet expectations for the listeners are as follows: 1) poor awareness of the opportunity, provided by MOOCs (Pickard, 2018), even among students (Aboshady, 2015; Ichou, 2018) insufficient resource availability. On the one hand, the online course learner requires basic technical resources for online interaction, such as a computer and a permanent reliable Internet connection (Liyanagunawardena, Williams, Adams, 2014; Introducing Coursera Learning Hubs: Global Participation, Local Access and Support). The realization that this requirement limits the opportunities for potential trainees from developing countries, served as the impetus for the launch of the U.S. Coursera platform to equip centers (educational hubs) in these areas. On the other hand, with the ever-increasing policy of online educational platforms for monetization, trainees need financial resources to prove their identity when they receive their certificate (platforms Coursera, edX), gaining access to the entire course or individual elements (Coursera), and getting the opportunity to use them for life (FutureLearn) (Liyanag u nawardena, Lu ndqvist, Williams, 2015);

Moreover, the low level of knowledge and skills for learning on MOOC platforms: computer literacy, proficiency in foreign languages, mainly English (Altbach, 2014), and international communication skills, a sufficient level of basic education (at least high school education), which is still inaccessible to 263 million children and teenagers and 20% of the adult population (263 Million Children and Youth Are Out of School; Masci,. 2017). Moreover, studies, conducted on foreign and Russian audiences of MOOC platforms have shown that students of a certain age, gender, education level and experience in online learning have a higher chance of successfully completing these courses.

The MOOC platforms themselves are also responsible for the failures in providing broad access to education. First and foremost are their technical imperfections, which showed the inability to provide education to people with diseases, including mental illness (González, Rodríguez, 2016). This category of citizens is poorly represented among the students of MOOCs (Iniesto, McAndrew, Minocha, Coughlan, 2017). Studies conducted on the material of some European and American platforms, have demonstrated that the materials of individual (Martin, Amado-Salvatierra, Hilera, 2016), and representatives of universities-developers and MOOC platforms consider such adaptation a low priority and often do not consider it as one of their objectives (Iniesto, 2016). In 2016, in the United States, the failure to meet this requirement for online courses was the cause of lawsuits against leading U.S. universities, including the University of Berkeley, Stanford, and Massachusetts Institute of Technology (Onlain curs: Ja trener). In order to meet this requirement, MOOCs should be developed in accordance with the principles of universal or even inclusive (tailored to the needs of specific groups) pedagogical design, which entails additional investment in the MOOC design project.

Online platforms registered by distinct countries, for political reasons also limit access to their resources to students from other countries. For example, in 2014. the U.S. government restricted access to the Coursera platform for users from the countries against which the White House imposed sanctions (U. S. Law Forces Coursera To Ban Students In Syria, Iran, Cuba, and Sudan).

4 UNIVERSITY VISIBILITY AND BRAND STRENGTHENING

Students are the main asset of a university. A number of authors connect the success of student recruitment with the university's visibility in mass media and, first of all, in social networks (Rutter, Roper, Lettice, 2016). The launch of MOOCs and news about the courses is of core importance for the university-developer and its promotion covering a large audience. Studies confirming the contribution of MOOCs in increasing the university's visibility are not yet publicly available, but the results of a survey, among the trainees of their MOOCs, published by Tomsk State University indicate that 46.36% of respondents had never heard of the university before, one of the leading and oldest universities in Russia.

It is very difficult to assess the role of MOOC production in strengthening the brand of the university, because the brand includes a number of elements (a set of promises of merits from the use of product or service, the real nature of the brand and symbolic elements, e.g. logo), measurement of which, in addition, does not have a unified methodology (Chapman, 2016). Casidy R. published the results of empirical research, according to which students' perception of higher educational institution brand is strongly connected with their satisfaction, loyalty and communicative behavior after admission.

In light of the wide range of MOOC topics offered by universities today, in addition to establishing the MOOC's impact on university brand awareness, studies such as these would also be relevant, that assess the contribution of the courses of a particular theme in the brand recognition of HEIs. For example, whether MOOCs on socio-humanitarian issues help to strengthen the brand of a technical or economic university.

5 NEW STUDENT ATTRACTION AND ADMISSION

Many universities set one of the main goals of MOOC production to attract new students (Liyanag u nawardena, Lu ndqvist, Williams, 2015; Bruhn, 2017). Achieving the goal of attracting more learners with the help of MOOCs turns out to be a non-trivial task for universities. First, as it was claimed earlier, typical students already have a formal higher education (Krause, 2014) and usually do not have a goal of pursuing further higher education. Second, the available suggestions on the platforms are rarely designed for undergraduate programmes. As an exception, one can mention the Lectorium platform, which offers courses for schoolchildren and university applicants.

As a rule, the main developers of MOOCs, universities, suggest courses similar to those implemented on campus. This is especially true for the Open Education platform, which is positioned as a platform for posting online courses created in accordance with Federal State Educational Standard of Higher Education; which limits the motivation of current school students to access it, and universities to create courses for such a user, at the risk of low demand. Moreover, the faculty of HEIs believe that online learning requires competencies that are not yet formed in undergraduate students (Aboshady, 2015). Consequently, attracting potential Master's students to MOOCs seems more likely and easy because (apart from the above-mentioned aspects) this audience is likely to be more aware of the possibilities of online learning; either their university produces courses or has a system for embedding such courses in the educational process, or messages about this format are getting into their information flow.

Although prospective postgraduate students presumably have even more of the necessary competencies for online learning than graduate students, the use of MOOCs to engage them is questionable due to the fact that this level of education focuses not only on learning, but also on scholarly activities. The authors-teachers of the MOOCs being developed, aimed at the task of recruiting future candidates of the highest category, should demonstrate not only their knowledge of the subject matter and pedagogical technologies, but even their research competencies, as well as the reputation of scientific school, infrastructural provision of academic activities, etc.

The greatest potential of the MOOC format with regard to the level of education and employment of the attendees (Krause, 2014) is revealed in additional professional education, which in case of Russian learners contributes to solving the problem of adult population's low involvement in further professional trainings (as compared to European and OECD countries) (Korshunov, Gaponova, Peshkova, 2019). Online courses are used as a basis for professional development and retraining programs (Czerniewicz, 2014), which can also be mastered remotely, thus increasing their attractiveness to online students from other cities and countries. Moreover, obtaining a state-issued document upon completion of such a MOOC program rises the chances of their results to be taken into account by the employer.

To conclude, it is considered the goal of reaching out to international students. The development of a MOOC format with the perspective to achieve such an objective has been noted at the national level, in the priority project "Development of Export Potential of the Russian Educational System". Reports (Breslow, 2013) published also by Russian universities (Massovye otkrytye onlajn kursy NIU VShJe 2014–2015) testify that they are succeeding in attracting foreign audiences to their online courses, both from the countries of the Commonwealth, which is logical in the light of the prevalence of the Russian language in the CIS, and from very distant ones. However, in order to attract and, importantly, to retain them by forming loyalty to the university (Krause, 2014), in addition to high quality and relevance of MOOCs, it is required: 1) to ensure that this audience is well-informed about their course (foreign platforms are more promising in this respect than national ones); and 2) to diminish the language barrier. The greatest international reach has the courses created in languages of international communication (first of all English (Abeer, Miri, 2014; Boal, Stallivieri, 2005)). The creation of MOOCs in English is complicated due to the low level of English language proficiency in our country (The world's largest ranking of countries and regions by English skill).

Developing MOOCs in English, investing relatively large human, time and financial resources, universities create for themselves a contradictory situation: the potential audience of the course increases, but due to the rich supply in this market from other universities, including those with a global reputation, the competition upsurges. And yet, national institutions of higher education manage to produce competitive courses in English, as evidenced by the high scores given by students on the Coursera platform, therefore guaranteeing cultural accessibility, which requires a high level of proficiency in the rules of intercultural communication. The mere fact of enrolling for an online course does not yet indicate that person will be able to study this course, and this can be related not only to the difficulty of the material, but also to the national specifics of representatives of other and cultures (Goncharova, Maslova, Minasyan, 2023).

However, an analysis of leading universities (from 21 countries), developing MOOCs, showed that there is no connection between the number of MOOCs developed and the share of foreigners in the student body; a positive, but weak correlation was established only for American universities (Zakharova, 2019).

These results may be related to the fact that to transfer the students in their MOOC programs to the status of students in the programs implemented by the university can only be achieved by purposeful additional actions. For example, Tomsk State University has a precedent of awarding learners with extra credits for the successful completion of online courses when applying to traditional programs (Progress na onlajn-kursah pomozhet abiturientam postupit' v TGU), as well as of launching an English-language Master's programmes, the entrance exams of which, in addition to an interview, include the following an English language proficiency test. In addition to an interview and an English language proficiency test, the program was also tested by successfully completing two thematic online courses authored by their scientific supervisors (A new International Master's Degree in Biodiversity at Tomsk State University, Russia). Another move was to provide discounts to applicants who have mastered online courses of the same university, introduced by NRU HSE.

It is also practiced to gain access to the data of trainees, their progress and demographic information (International_Master's_Degree_in_Biodiversity_at _Tomsk_State_University_Russia), as well as educational projects to select target candidates and provide them individualized proposals of admission to higher education. This solution has a significant limitation due to laws protecting personal data of students, compliance with postulated by online platforms, and the responsibility for their execution is shared with the universities-developers of MOOCs. Even if all these and other issues are taken into consideration, the desired effect may not be achieved: participants in student recruitment projects of the MOOC claim that the results do not always justify the means, primarily due to low motivation of this category of students to enroll in traditional programs (Krause, 2014).

6 PERFECTION IN ONLINE PEDAGOGY

With the digitalization of education, the production of one's own online courses is seen as a good opportunity to learn the principles of online pedagogy and test them out on MOOC students. This idea is questioned by others in the professional community who believe that similar courses are not distinguished by any particular pedagogy, and are just one of the technological solutions of distance learning.

The important thing in this discussion is to understand that MOOCs are heterogeneous in terms of the teaching methodology used. The first online courses of this format gave the main role in the learning process to the community, where the teacher was only one of the participants, the focus was on peer-to-peer learning, and the materials were generated in the process of MOOC production and often created by the trainees themselves. Courses of this type are called 'connectivist MOOCs' (cMOOCs) and are presented, for example, on the British platform FutureLearn.

Subsequent online courses (xMOOC) put the instructor at the center of the learning process as a translator of knowledge, the materials are prepared by them beforehand, and their acquisition is planned linearly. This type of MOOCs is widely represented on American Coursera (coursera.org). Thus, for partner universities of different platforms, the online pedagogy mastered with MOOCs has different principles.

Formulating the advantages and disadvantages of MOOCs for a teacher, representatives of foreign and Russian universities emphasize, first of all, the possibility of a better organization of the learning process, on the one hand, and the pedagogical imperfection on the other hand (Quinn, 2015). In general, the low pedagogical quality of MOOCs is also confirmed by the results of Margaryan A. et al. (Zakharova, Tanasenko, 2019).

Not the least of which is the need to improve the course even after its launch, to take measures to improve the results of trainees and increase the proportion of those who completed the training completely (for example, with the help of interventions). These challenges are addressed by analyzing data collected by the MOOC platform, facilitating informed decisions (data-driven decisions). Siemens G., the author of the first MOOC, introduced the concept of 'learning analytics' to refer to 'the measurement, collection, analysis, and presentation of data about learners to understand and optimize their learning contexts and the environment in which it occurs.' (Margaryan, Bianco, Littlejohn, 2015). Unfortunately, educators themselves tend to perceive learning analytics as a sphere of interest of educational organizations' administration and representatives of ministries rather than their own (Siemens, 2013).

Unlike their foreign colleagues, employees of Russian universities do not even point out the possibilities of data analysis capabilities as a merit of MOOCs (Quinn, 2015). The effectiveness of using this tool is directly connected with the instructor's competences in instructional analytics; if they are insufficient, they need the help of methodologist in the team of the university-developer. An important step towards solving this problem in Russia was the automated online course analytics service created by the Center for Psychometric Research in Online Education at the National Research University Higher School of Economics, tested on several Russian universities, and integrated into the MDEE portal for free use (Arroway, 2016). To what extent universities and faculty will actively use this opportunity is still questionable.

Foreign experience shows that if MOOC teachers improve any course based on the collected data, it is their face-to-face course that has become analogous to online version (VShJe zapustila servis psihometricheskoj analitiki onlajn-kurso). MOOCs can be used to improve campus programmes and university image, which manifests itself in setting the following goal.

7 INTEGRATION OF MOOCS IN THE LEARNING PROCESS

The global trend of blended learning, with online courses embedded into traditional programmes, is driven by a number of objectives: ranging from providing individualized educational trajectories to making the organization more cost-effective. MOOCs can also be used as additional materials in a traditional course to provide diversity and individualization of training, to replace a full-time discipline if the university does not have enough resources (classrooms, staffing, etc.), or be the main part of the discipline with face-to-face consultations by the teacher.

In turn, the integration into the educational process increases the level of confidence as a result of learning in MOOC (Literat, 2015). In Russia today their re-crediting is not only possible but guaranteed at the federal level. According to the Decree of the

President of the Russian Federation, a united digital educational environment must be created by 2024 integrating the domain "Education" with HEI, public and technological companies through government informational systems.

However, in the early days of the MOOC movement, in 2012, representatives of Western academic communities believed that MOOCs would lead to the disappearance of the teacher as such and were far from guaranteeing the effectiveness of learning (Bowen, 2012). A recent study in NRU HSE shows that their Russian colleagues despite their generally positive attitude have similar apprehensions.

Table 2: University teachers' attitude towards digitalization and its impact on working conditions in Russia.

UNIVERSITY STATUS				AGE			RESULTS
	Leading universities	Regional flagship universities	Others	Under 35	35-60	60 and older	
The emergence of information technology drastically alters the teacher's position and duties							
I strongly agree	22.9	19.4	23.0	19.5	22.9	24.2	22.6
I quite agree	49.2	56.3	52.0	50.0	52.3	52.0	51.9
I don't agree	23.4	19.7	19.4	24.7	19.6	18.4	20.2
I strongly disagree	4.5	4.6	5.7	5.8	5.2	5.4	5.3
A large number of online courses lowers the standard of teaching							
I strongly agree	21.3	17.1	20.5	18.8	20.2	22.2	20.3
I quite agree	40.6	45.0	43.1	37.2	43.4	46.0	42.8
I don't agree	32.8	32.4	30.2	36.5	30.7	26.6	30.9
I strongly disagree	5.3	5.5	6.2	7.6	5.8	5.2	5.9
There are new possibilities for structuring the processes of science and education							
I strongly agree	19.2	17.4	16.3	19.4	17.2	13.3	17.0
I quite agree	63.0	67.4	65.7	62.7	65.5	67.7	65.4
I don't agree	14.2	12.4	13.9	14.0	13.7	14.3	13.8
I strongly disagree	3.6	2.8	4.1	4.0	3.7	4.7	3.9
The growth of information technology places new demands on teachers and requires more efforts							
I strongly agree	45.2	45.1	46.4	40.4	46.2	51.0	46.1
I quite agree	41.6	43.3	40.7	42.4	41.3	39.3	41.1
I don't agree	11.2	9.5	10.7	15.0	10.3	7.8	10.6
I strongly disagree	2.0	2.1	2.2	2.2	2.2	1.8	2.2
The shift of the educational process to an online format reduced teacher number							
I strongly agree	18.3	19.0	20.9	14.0	21.6	19.5	20.2
I quite agree	38.1	43.1	39.9	39.0	40.1	40.2	39.9
I don't agree	34.7	31.3	31.5	38.3	31.0	31.2	32.1

I strongly disagree	9.0	6.6	7.7	8.7	7.3	9.2	7.8

Source: National Research University Higher School of Economics

As illustrated in Table 2, the majority of respondents (87%) believe that the development of information technologies creates an additional burden on teachers, especially those over 60 years old. The majority of respondents, particularly young teachers, support this view. 60% of respondents also believe that the transition to online learning leads to the reduction of teachers. The risk of older teachers leaving is also a shared concern, with employees over 60 years old discussing this less frequently than their younger counterparts.

Thus, teachers surveyed expressed concern about losing their professional status due to the shift to MOOCs, highlighting the widespread fear of digitalization in the teaching profession.

Moreover, there is an opinion that MOOCs, or rather, the online degrees created from them (or online specializations on Coursera, micro-master's programs - edX, nano-degrees - Udacity) threaten not only teachers, but entire universities, as they have the potential consequences of the complete closure of their traditional counterparts (Quinn, 2015). According to statistics from the MOOC aggregator Class Central, in 2018, the number of online degrees tripled and surpassed the suggested 45 mark (Shah, 2018).

Sharrock G. predicts that MOOCs will not break the world's leading universities, but universities with poor reputations and undeveloped systems of integration of online courses in the educational process do fall into the risk zone (Quinn, 2015). Consequently, we should not even talk about the competition between MOOCs and teachers, but about the competition between online and traditional learning (Kaplan, Haenlein, 2016), national and international rivalry of universities (Kaplan, Haenlein, 2016; Krause, 2014).

Under these conditions, despite the rich supply on the market of online courses, universities are trying to launch their own programmes. Universities without experience, are creating shorter, cheaper online courses for internal use (SPOC; small private online courses). For mass course developers, however, the scenario reflected in the slogan of the 2017 MOOC European Stakeholder Summit is relevant: "Going out into the world and back to campus," when online programs previously offered to external audiences began to be integrated into the curricula of affiliated students.

Evidently, more and more universities are embracing these challenges and getting into the game, though its rules are still unclear. Faculty members don't always know how to integrate online courses into their programs, identify their students' progress on MOOCs, and relate the schedule of a full-time discipline with the MOOC's schedule provided on the educational platform, etc. University supervisors are baffled by the issues of student participation in paying for MOOC certification with the proof of legitimacy (certification and online proctoring services), recalculation of educators' workload replacing some of the classroom hours by checking students' independently studied MOOC materials, recognition of programs in which these courses are integrated. However, the active work of the leading universities in online learning in Russia contributes to the closure of the gap and by taking advantage of more lenient regulation, integrated MOOCs into programs of supplementary education for children and adults, for example, the Ural Federal University has established a precedent for state accreditation and basic hybid educational programs (Voss, 2012). The Higher School of Economics, in turn, offers universities an active support for the use of its online courses, while TSU, PRUE, etc. introduce MOOC in traditional education within the framework of professional development programs .

8 COST REDUCTION AND PROFIT GENERATION

When talking about cost reduction through MOOCs, first and foremost, they refer to the savings in the case of universities, as they are primarily aimed at saving funds by integrating them into the educational process (Vuz pervym v Rossii akkreditoval programmy s onlajn-kursami). In 2016. V. S. Tretyakov and V. A. Larionova, found that the economic efficiency of implementing MOOCs in each university varies, and depends on such factors as the type of discipline, major, teaching workload, and student quantity. In the new realities, which include network contracts between the university-developer and the MOOC integrator, fresh research and publications are needed, revealing this problem.

Of course, universities will be satisfied with cost reductions through the integration of MOOCs only if the costs of producing and continuing to support these courses will be acceptable. The main items of costs: acquisition and maintenance of technical equipment, software for video production, payment for the project team (which ranges from 2 up to 30 people), as well as author-teachers (Modeli i tehnologii integracii onlajn-kursov v osnovnye obrazovatel'nye programmy) (both for developing and maintaining course thereafter), and a membership or affiliate fee for hosting and supporting their MOOCs, which differs from each educational platform (Krause, 2014; Zakharova, Tanasenko, 2019; Kuzminov, Vyzovy, 2018; Hollands, Tirthali, 2014).

In Russia the development of a typical MOOC course takes on average 3-7 months and costs nearly 500-700 thousand rubles depending on its complexity. It is suggested to reduce the development costs by means of standardization of production, i.e. creation of pedagogical templates or design of video lectures (Pickard, 2018). The labor costs of the videographer and editor, which make up a large portion of the project budget, can be saved by using the technology of self-recording. Such a studio at the Higher School of Economics and Plekhanov Russian University of Economics (Goncharova, Maslova, Minasyan, 2023), however, is positioned as equipment used for the production of internal videos.

Whereas previously the employees admitted to a MOOC development project team were required to be trained in the format, now the online training market has moved beyond the walls of universities which facilitates the search for personnel, but it also increases competition with other universities, and with the private sector. Moreover, there are precedents in Russia of employees leaving the university's MOOC team to produce their own projects with the same profile.

They have already made their MOOCs available on such major platforms as GeekBrains, Skillfactory, Skillbox etc.

Afterwards the possibility for universities to make a profit from the MOOCs developed is discussed with the aim to cover their costs and ensure an active policy of monetization of online platforms (Shah, 2018; Shah, 2016). Despite the active criticism, it is obvious that it will be relevant in the nearest future as well as it is effective. While the number of new MOOC students is decreasing, the number of users of these courses on a paid basis is increasing (Shah, 2018). The main revenue from MOOCs is certification with verification of the listener's identity. Not least of all the goal of increasing the value of certificates has driven the emergence of sophisticated formats such as online specialization (a series of online courses with an emphasis on practical assignments) and online degrees. In Russia, online specializations are offered by the following universities: TSU, HSE, MIPT, NSU, PRUE, etc. The first precedent of online degrees was realized at MIPT in 2019 (Otkrytoe obrazovanie: Partnerskaja programma dlja vuzov Rossii).

In order to increase the value of the certificate and attractiveness of the course by including real cases from practice, universities invite industry representatives to produce online courses: in Russia MIPT cooperates with Yandex, NRU HSE - with Yandex and Google Russia. However, platforms are interested in industry partners enough to conclude relationships with them without the mediation of universities. As a result, in the Coursera catalogue there is an increase in the number of courses created by Russian companies as well as in the MOOC.ru, a free search engine which gathered more than 1000 online courses in well-known disciplines on a single platform, and in the niches of universities, the competition for students is growing.

At the same time, there is an opinion that, on the whole, the increased presence of representatives of the corporate sector on MOOC platforms does not threaten universities, as the online courses of the former are aimed only at teaching the use of a given company's product, or simply to strengthen the company's brand (Onlain curs: Ja trener).

In spite of all the measures applied, not all trainees acquire a certificate at the end of training. Moreover, Jia Y. and his colleagues calculated that the highest percentage of trainees acquiring a certificate is of trainees at the first launch of the course, and with each subsequent launch it falls, although the number of those wishing to purchase a certificate remains unchanged (Contemporary combinatorics: Online Master's program in English. Phystech School of Applied Mathematics and Informatics,).

Hence, each subsequent launch requires more and more efforts to keep the volume of sold certificates. Among the reasons of rare certification are the weak retention of the trainee population, the high cost of this service (especially for developing countries (Introducing Coursera Learning Hubs: Global Participation, Local Access and Support)), lack of motivation among trainees and employers' unwillingness to recognize the results of MOOC training (Shah, 2017). The sales of MOOC certificates among Russian audiences are lower than in western countries. Experts find in this statistics cultural reasons as well, in particular the influence of the Russian tradition of free educational services (Jia, 2017).

It is possible to increase profits by attracting not individual listeners, but entire groups. The line ministries of some countries already pay tuition fees for MOOCs to their citizens (Liyanag u nawardena, Lu ndqvist, Williams, 2015), so universities that are able to interest and attract supporters, will be able to make large profits. For group corporate clients, Coursera and edX have launched projects “For Business,” which allow employers to organize professional development trainings for their co-workers. The Russian companies have already joined this project (Rosendale, 2017), which signals for domestic universities a growing competition with foreign MOOC developers not only for foreign audiences, but also for Russian corporate users, who have no language barrier.

With all the complexity of getting the listener to purchase a certificate, the MOOC platform sells it and sends the revenue to the university in due time, minus its share (Liyanag u nawardena, Lu ndqvist, Williams, 2015).

The desire to recoup the investments made in the development and promotion of MOOCs, gave rise to the introduction by universities of additional monetization methods with/without the participation platforms. First, the “freemium” (free+premium) format, in which only access to the course lectures remains free, and evaluated tasks and other educational materials require payment, which already includes the cost of the certificate issued in case of successful course completion. Second, the realization that not all MOOC trainees can learn on their own, has led to the offer of individual tutoring (Liyanag u nawardena, Lu ndqvist, Williams, 2015).. Thirdly, universities are launching professional development programs with the issuance of a certificate of state standard. Fourth, trainees can be offered goods and services related to the topic of the course (e.g., textbooks written by the authors, their seminars and webinars, private consultations, applications or databases that the university owns, etc.).

Finally, a MOOC developer university may provide paid licenses for the use of these courses. In Russia, an example of the implementation of such a model is represented by network agreements between a higher educational institution that develops MOOCs and the educational organization that uses the corresponding course in the educational process. According to the terms of such an agreement concluded by HSE with partners, integrating universities, in addition to the opportunity to train their students in MOOC, passing the final certification with the procedure of proctoring and issuing a certificate, they are also provided with technical and methodological support, besides access to the course learning data (Shashkina, 2020).

To summarize this section, it is worth acknowledging that there are many options for monetizing MOOCs, and each higher education institution is capable of developing its own. It is not known what profit universities get as a result of applying these solutions, and there are no open publications on this topic. However, the professional community acknowledges that the production of online courses has never become profitable (Kaplan, Haenlein, 2016).

9 DISCUSSION

Government support contributes significantly to the digitalization of higher education by funding educational developments in the sequence of global trends. However, new technologies are replacing old ones, and the state is already shifting its focus from online course production to educational data analysis. Under these conditions, universities that develop MOOCs are faced with the choices 1) to close the project and stop supporting the courses; 2) to continue supporting it as long as resources allow, or 3) to reconsider the project, setting it as one of its key goals.

The first scenario allows the university to demonstrate awareness of current trends in education, but also the lack of a long-term strategy of online learning development. At the moment at least 48 Russian universities included in the survey list for this article, offer their MOOCs on open (non-campus) platforms, however, the majority of universities do not reflect this information even on their official websites, thus, they do not use MOOCs for promotion. Perhaps the resources that were previously devoted to the development of the MOOC project will yield manifold better results in other areas of activity within the university, for instance, acquiring new equipment in laboratories, improving living conditions of students, paying for internships for employees, inviting a specialist in academic writing in English to train the university’s teaching staff, etc.

The second scenario implies the prolongation of the MOOC project realization, but for an indefinite period of time due to the low level of rationality and high resource intensity. So, only the best MOOCs are competitive (The world’s largest ranking of countries and regions by English skill), as the trainees evaluate the courses, later, on this basis the platforms are ranked in the catalogue first showing new trainees the highly rated suggestions and increasing their chances of being selected again.

The third scenario requires time and involvement of the university core staff in MOOC production, but it brings both the project and the organization to a new level. Such universities not only integrate MOOCs into the intra-university system, but also form external ones. They set up their own platforms, win grants to introduce them at the regional and federal levels. Newcomers to the MOOC market will have to adopt these rules or find ways to formulate new, more effective and more resource-efficient projects. Fortunately, the developers' team has the opportunity to learn from the leaders' experiences.

Table 3 presents the goals of MOOC projects set in a broad university-wide context, a summary of the barriers in achieving these objectives, as well as some recommendations to increase the efficiency of these activities.

Table 3: The research findings and suggestions for HEI MOOC projects to achieve goals.

Objectives of MOOC production	**Results**	**Recommendations**
Expanding access to high quality education	Unprecedented audience reach, but because of the limitations to *entrance* and *exit* barriers people of low socio-economic status are poorly represented in this group	1) conduct an audit of the needs and problems of the university, to assess the possibility of solving them with the help of MOOC production and practice; 2) define the metrics and frequency of evaluation of the launched project; 3) develop a strategy for the development of online learning and communicate it to all staff, primarily to leaders and opponents of online learning
Increasing university's visibility and strengthening its brand	Platforms and channels promote MOOCs and the universities-developers, but the effectiveness of these channels has not been studied yet	1) analyse and evaluate the correlation between MOOCs launched by the university and its brand (do they form a single desirable image of the university, at least at its official website); 2) develop an active marketing campaign of MOOCs 4) promote MOOCs in offline and online venues;
Attracting new students	Large coverage of the audience, but the number of potential applicants is low	1) evaluate the role of the MOOCs in the enrollment campaign: are applicants aware of the availability of MOOCs at the university? Or is the MOOC a channel to attract them? 2) develop options of MOOC integration into the enrollment campaign, i.e. replacing one of the admission tests with a successfully completed MOOC of the university, or offer discounts for commercial students; 3) highlight MOOCs in presentations at specialized venues and events for applicants; 4) expand the audience by embedding foreign language subtitles into Russian-language MOOCs
Mastering online methodology	MOOCs provide teaching experience using ICTs, but the pedagogical quality of these courses is low,	1) teacher training, providing active administrative and

	there is no agreement in the evaluation of the innovative methodology used in these courses	methodological support to the authors-developers and integrators of the courses (including in the format of mentoring), supporting the awareness of employees about new trends in online learning; 2) use learning analytics to improve the quality of traditional and online courses. In light of the many barriers - technological, legal, and psychological MOOC developing institutions can take advantage of these favorable conditions to become familiar with modern computer-based learning analytics, master the data culture, and use the MOOC platforms as a pilot site.
Integrating online courses into the learning process	The possibility of a better organization of the learning process is already used by many universities, both the developers and non-developers of MOOCs, but in the organization of blended learning there are still a lot of moot points, and integration is associated with a threat to both teachers and universities in general.	1) conduct an assessment of the quality of the disciplines being implemented and the problems that can be resolved through MOOCs, and calculate the resources required; 2) train administrative and teaching staff to implement all stages of the use of online courses, beginning with the calculation of the instructor's workload, and ending with integration models;
Cost reduction and revenue generation	An opportunity to reduce the cost of implementing face-to-face courses when transitioning to a blended format, various options of monetization, but high resource consumption in producing MOOCs, low in the general mass demand for paid courses and paid services, strong dependence of the policies of the platforms, on which universities place their courses.	1) at the initial stages of the project, manage cost reduction through the use of free platforms, the technical equipment already available at the university, and also by attracting (e.g., from the university television studio or the journalism department); 2) capitalize on investments already made, while keeping the workload low by offering the university's facilities to external partners, as well as the staff involved in the project (contingent labor - outstaffing). Reduce of expenses for the production of MOOC aimed at improving the quality of citizens' lives through the sponsorship of the organizations concerned (e.g., the Red Cross Society).

10 CONCLUSION

This research paper presents the goals that are set by higher education institutions that develop MOOCs, in the United States, Europe, and Russia. A review of the publications on the experience of these institutions demonstrates that the established goals related to different areas of the organization have not been achieved. Obviously, MOOCs can be only one of the tools to achieve these objectives, but not the only and universal one. In case the MOOC integration is built into the university development strategy, the higher are the chances for its effectiveness. Here we propose some strategies for MOOC' integration to improve existing practices of HEI in Russia.

First of all, for the entire project it is recommended to conduct an audit of the needs and problems of the interested parties, develop a strategy for the expansion of online learning in the university and inform about it all potentially involved employees.

Next, it is proposed to hold an assessment of the students' needs to strengthen the focus of online courses for the competitive positioning of the university, to include MOOCs in the university's enrollment campaign, actualize faculty competencies and improve the quality of teaching, ensure the effectiveness and safety of the MOOC integration in the educational process, as well as to optimize costs and increase revenues from the production of MOOCs.

Finally, the analyzed conditions demonstrate the significance of implementing new digital management standards and practices in Russia's higher education management. Building a sort of "digital environment," a virtual representation of important academic groups, is one of the first steps in this approach. The development of the university's digital infrastructure, the promotion of its brand on social media, the creation of its own ecosystem, and a number of other promising areas for the growth of a contemporary educational organization seem to all begin with the construction of such a model, which reflects the scope and structure of internal relations.

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