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**Assessment Future Evolution of Massive  
Open Online Courses (MOOCs):  
SWOT Analysis (Global and Regional Measuring)****M. S. Ashilova<sup>a</sup>****A. S. Begalinov<sup>b</sup>****Yu. V. Pushkarev<sup>c</sup>****I. Yu. Pushkareva<sup>c</sup>****K. K. Begalinova<sup>d</sup>****E. A. Pushkareva<sup>c</sup>✉**

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**Аннотация**

**Introduction.** Digital technologies contribute to the rapid development of communications in various spheres of society. However, MOOCs, despite being a young and exciting phenomenon, have both positive and negative aspects. The purpose of the article is to study and analyze the phenomenon of MOOCs in its global and regional dimensions, and assessment their future evolution, identifying the strengths and weaknesses in their development, especially for the development of regional education systems.

**Materials and Methods.** Theoretical research is carried out in the context of a systematic approach to maximize the study of all the features and patterns of the phenomenon under study, which is a system. The research methodology used is SWOT analysis, which helps to identify the advantages, disadvantages, opportunities, and threats for the future of higher education. The method helped to identify, on

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the one hand, the positive and negative aspects of the development of massive open online courses of the MOOC, on the other, to identify the opportunities and threats of online learning systems for the future development of higher education (global and regional levels).

**Results.** The authors show that open online courses are an important addition to traditional university education, built on the basis of common forms, but working within the framework of a regional dimension. They allow you to increase the level of knowledge and competencies in various industries and beyond territorial borders by building specific online communities). However, the authors also show that this open communication system is considered by many of its participants not as a specific addition to the traditional one, but as its real alternative. The main results of the study is the identification of hidden and unexpressed weaknesses in the MOOC system. Instead of the expected democratization of education and enlightenment, if the existing threats are underestimated, it may lead to degradation and a new phase of the global educational crisis. The scientific novelty of this research lies in the fact that the phenomenon of MOOCs is still young and has been poorly studied in scientific literature.

**Discussion and Conclusion.** In conclusion, the authors summarize the specifics of the manifestations of an open system of knowledge communication (its global and regional dimensions). The practical significance of this study of the authors lies in the analysis and generalization of the problems of the development of online education. This article will be useful for anyone interested in research issues of theoretical and practical aspects of the modern education system development (both regional and global levels of its formation).

*Keywords:* global social systems, regional changes in social systems, MOOCs, open online communities, SWOT analysis, prospects for the development of education, information development of society, aspects of regional systems, open communication system, digital communication technologies

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Оригинальная статья

## **Оценка перспектив развития массовых открытых онлайн-курсов (МООС): SWOT-анализ (глобальное и региональное измерение)**

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*Abstract*

**Введение.** Цифровые технологии способствуют быстрому развитию коммуникаций в различных сферах жизнедеятельности общества. Массовые открытые онлайн-курсы в данном контексте – противоречивый феномен: он несет в себе не только положительные, но и негативные аспекты, особенно для развития региональных систем образования. Цель исследования – проанализировать феномен МООС в его глобальном и региональном измерении, оценить его перспективы, выявить сильные и слабые стороны в его развитии.



**Материалы и методы.** Теоретическое исследование осуществляется в контексте системного подхода для максимальной проработки всех особенностей и закономерностей изучаемого феномена, являющегося системой. Основой исследования выступил метод SWOT-анализа, который способствовал выявлению положительных и отрицательных аспектов развития массовых открытых онлайн-курсов и определению возможностей и угроз систем онлайн-обучения для будущего развития сферы высшего образования (глобального и регионального уровней).

**Результаты исследования.** Выявлено, что открытые онлайн-курсы являются важным дополнением к традиционному университетскому образованию, выстроенному на основе общих форм, но работающих в рамках регионального измерения. Они позволяют повысить уровень знаний и компетенций в различных отраслях и вне территориальных границ, выстраивая специфичные онлайн-сообщества. Также определено, что онлайн-курсы многими участниками рассматриваются не как специфическое дополнение к традиционной форме образования, а как его реальная альтернатива. Авторами выявлены скрытые, неприявленные слабые черты системы MOOC, которые вместо ожидаемых демократизации образования и просвещения могут привести к прямо обратному результату – деградации и новому витку мирового образовательного кризиса. Научная новизна обусловлена темой исследования, поскольку феномен MOOC – молодой и еще крайне малоизученный в научно-исследовательской литературе.

**Обсуждение и заключение.** Обобщается специфика проявлений открытой системы знаниевой коммуникации (глобальное и региональное измерение). Практическая значимость исследования заключается в анализе и структурировании проблем развития онлайн-образования. Статья будет полезна всем интересующимся вопросами исследования теоретических и практических аспектов развития современной системы образования (как регионального, так и глобального уровней ее формирования).

*Ключевые слова:* глобальные социальные системы, региональные изменения социальных систем, MOOC, открытые онлайн-сообщества, SWOT-анализ, перспективы развития образования, информационное развитие общества, аспекты региональных систем, открытая система коммуникации, цифровые коммуникационные технологии

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*Для цитирования:* Оценка перспектив развития массовых открытых онлайн-курсов (MOOC): SWOT-анализ (глобальное и региональное измерение) / М. С. Ашилова [и др.] // Регионология. 2024. Т. 32, № 1. С. 144–162. <https://doi.org/10.15507/2413-1407.126.032.202401.144-162>

**Introduction.** Massive Open Online Courses, or MOOCs, are often researchers called a revolution in modern education [1–5]. Some researchers, like Sh. Urooj, A. Sajjad, N. Bano, and M. Mukarram [1], compare the advent of MOOCs to Johannes Gutenberg’s invention of the printing press. Although the first massive online courses appeared not in 2020 during the pandemic [2; 3] but much earlier, in 2008, it is now that they have become so popular and in demand according to sources [4; 5].

In 2021, there were approximately 20,000 online courses offered by 950 universities worldwide, with a total number of students reaching 220 million people<sup>1</sup>. It is expected that by 2028, the market for massive open online courses will grow at an average annual growth rate of 34.7%<sup>2</sup>.

<sup>1</sup> Shah D. By The Numbers: MOOCs in 2021 [Electronic resource]. The Report. 2021. Available at: <https://www.classcentral.com/report/mooc-stats-2021> (accessed 24.06.2023).

<sup>2</sup> Market of Massive Open Online Courses (MOOC) – Growth, Trends, COVID-19 Impact, and Forecasts (2023–2028) [Electronic resource]. Available at: <https://www.mordorintelligence.com/ru/industry-reports/massive-open-online-course-mooc-market> (accessed 24.06.2023).



Before the pandemic, MOOCs were seen more as a complement to traditional face-to-face education [6–8], but today they question the necessity of universities, compete with them, and present a serious alternative to traditional learning [1; 9; 10].

MOOCs have compelled traditional and mostly elite higher education institutions worldwide to reconsider their approaches and strategies in the field of online and open learning. They have been an invaluable resource during the pandemic when schools and universities were physically closed for a long time. And to this day, they remain an important element in promoting universal education<sup>3</sup>.

However, not everything in the MOOC system is so straightforward. As research progresses, contradictory factors are being identified, revealing both the strengths and weaknesses of open education.

The purpose of this article is to study and analyze the phenomenon of MOOCs and assess their future evolution, identifying the strengths and weaknesses in their development (both regional and global levels of its formation).

**Literature Review.** Some researchers believe that after the pandemic there have been significant changes in the structure of traditional education: problems of the unstable development [11–13]; problems of the educational quality [14–16]; changing of the educational value content [17–19]; change of the educational paradigm in general [20; 21]. Some researchers believe [1] that over time, long-term higher education will be replaced by such short-term courses.

The first online course considered as a MOOC was the course on connectives and connective knowledge conducted in 2008 at the University of Manitoba in Canada [4]. In-person, 25 students attended the course, and an additional 2,200 students took it remotely. In 2011, Stanford University launched three free online courses: databases, machine learning, and artificial intelligence [22]. Each course received over 100,000 applications from students all over the world. The courses included video lectures by renowned professors and assignments that were automatically assessed by algorithms. This marked the emergence of MOOCs in their modern understanding [23].

Since 2017, it has been possible to earn bachelor's and master's degrees, as well as numerous micro-credentials through courses [1, p. 94]. Currently, we are witnessing a boom in the development of MOOCs. By the end of 2020, more than 16,300 MOOCs from 950 universities worldwide had reached over 180 million students [24] (Figure 1).

MOOCs, according to several researchers [25; 26], are a phenomenon in higher education that represents the most influential initiative, aimed at the implementation and effective use of the most popular features of digital technologies.

Thus, the article examines the actual contemporary problem of global and regional changes in social systems in modern conditions of information development of modern society. Digital technologies contribute to the rapid development of communications in various spheres of society. On the one hand, they contribute to the spread of specific regional cultures; on the other hand, on the contrary, they entail threats to the preservation of regional characteristics and traits, traditions.

<sup>3</sup> Ritchie H., Mathieu E., Roser M., Ortiz-Ospina E. Internet [Electronic resource]. [OurWorldInData.org](https://ourworldindata.org/internet). 2023. Available at: <https://ourworldindata.org/internet> (accessed 24.06.2023).

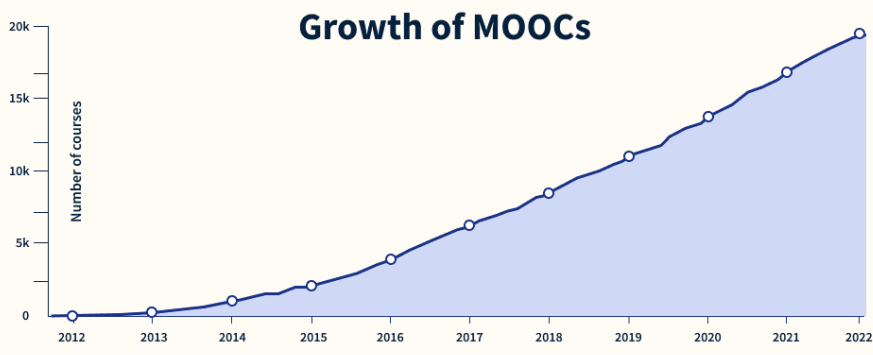


Fig. 1. Dynamics of MOOC Course Development<sup>4</sup>

**Materials and Methods.** Theoretical research is carried out in the context of a systematic approach to maximize the study of all the features and patterns of the phenomenon under study, which is a system.

This article presents a SWOT analysis of the MOOC system.

The authors systematize the data about this system at its current stage of development.

The main thing is to identify the strengths, weaknesses, opportunities, and threats.

The authors focus on this aspect of influence that MOOCs present to individual students as well as the higher education sector as a whole.

The method helped to identify, on the one hand, the positive and negative aspects of the development of massive open online courses of the MOOC, on the other, to identify the opportunities and threats of online learning systems for the future development of higher education (global and regional levels).

**Results.** Massive Open Online Courses are a “groundbreaking technology in the field of higher education” [27]. Some scientists compare the invention of MOOCs to the invention of printing. Others consider them one of the most important modern revolutions, a significant shift in the global community, where the old system is discarded and a new one is embraced [27]. Some researchers note that MOOCs have literally turned the education system upside down.

The “flipped classroom” departs from the traditional approach focused on lectures and the transmission of knowledge from teachers to students. Instead, it adopts an approach centered around the learners and the problems they encounter during the learning process [27]. In this model, students watch videos and complete online assignments before attending face-to-face discussions at their own convenient time and pace. During in-person sessions, typically, homework is done, and educators dedicate their time to explaining complex concepts, providing academic and individual support in the classroom, fostering collaboration, and teamwork on projects and ideas. One example of a “flipped classroom” is the Khan Academy<sup>5</sup>, an online learning service whose mission is to provide free, world-class education to anyone interested. Currently, Khan

<sup>4</sup> Shah D. By The Numbers: MOOCs in 2021.

<sup>5</sup> Khan Academy Press Room [Electronic resource]. 2014. Available at: <https://khanacademy.zendesk.com/hc/en-us/articles/202483630-Press-room> (accessed 24.06.2023).



Academy is one of the largest schools in the world, with ten million users accessing the site each month, over 400 million lessons translated into twenty-eight languages, and approximately four million exercises completed daily<sup>6</sup> [7].

Equally impressive are the achievements of the Coursera platform<sup>7</sup>. As of today, the Coursera community brings together over 100 million registered learners and collaborates with more than 275 universities and companies worldwide<sup>8</sup>. The main mission of Coursera courses is to educate millions of students from around the globe, transforming the traditional teaching method<sup>9</sup>.

By the end of 2020, there were more than 16,300 MOOCs offered by 950 universities worldwide, reaching over 180 million students [24].

Considering the fact that in the next thirty years, more children will leave school than ever before in history<sup>10</sup>, and that by 2030, 27 million teachers will need to be hired<sup>11</sup>, undoubtedly, MOOCs play a key role in the global mission of education and the promotion of quality open education for all.

MOOCs have been particularly important during the pandemic. Scientists acknowledge that during this challenging time, “teaching and learning systems have become completely dependent on e-learning since the world has turned to electronic transactions in all areas, especially in education, and the most used technology includes the use of online training courses such as MOOCs” [28].

Only in the first month of the pandemic, enrollment on Coursera increased by 640% compared to the same period the previous year, from 1.6 million to 10.3 million people<sup>12</sup>. In this situation, MOOCs became an excellent platform for quality online education [29].

Scientists hope that thanks to MOOCs, higher education can be significantly democratized [30], making it accessible, which is crucial primarily for developing countries that lag behind in development. As possibilities of MOOCs, researchers also consider new formats of education, including multimedia content, digital tools, interactive learning, virtual laboratories, elements of computer games, etc., which will allow reforming the centuries-old system of higher education, reshaping it into personalized learning, lifelong learning.

However, despite the impressive achievements of MOOCs in recent years, there are certain threats that cannot be ignored. First and foremost, scientists have noticed that

<sup>6</sup> Khan Academy Press Room.

<sup>7</sup> Mercado A. Coursera Statistics: The Growth of e-Learning in 2023 [Electronic resource]. Skill Academia. 2023. Available at: <https://www.skillademia.com/statistics/coursera-statistics/> (accessed 24.06.2023).

<sup>8</sup> Ibid.

<sup>9</sup> Kamenetz A. How Coursera, a Free Online Education Service, Will School Us All [Electronic resource]. Fast Company. 2012. Available at: <https://www.fastcompany.com/3000042/how-coursera-free-online-education-service-will-school-us-all> (accessed 24.06.2023).

<sup>10</sup> Education at a Glance 2012: Highlights, OECD Publishing. 2012. [https://doi.org/10.1787/eag\\_highlights-2012-en](https://doi.org/10.1787/eag_highlights-2012-en)

<sup>11</sup> Wanted: Trained Teachers to Ensure Every Child's Right to Primary Education [Electronic resource]. UNESCO. 2014. Available at: <http://unesdoc.unesco.org/images/0022/002299/229913E.pdf> (accessed 24.06.2023).

<sup>12</sup> Impney Ch. Massive Online Open Courses See Exponential Growth During COVID-19 Pandemic [Electronic resource]. The Conversation. 2020. Available at: <https://theconversation.com/massive-online-open-courses-see-exponential-growth-during-covid-19-pandemic-141859> (accessed 24.06.2023).



“the majority of people studying MOOCs already have jobs, have higher education, and hardly encounter obstacles related to the accessibility of higher education” [30]. For example, 85% of participants in Coursera already have higher education<sup>13</sup>.

In a research report by A. D. Ho et al. [31], “researchers from Harvard University and the Massachusetts Institute of Technology found that on the first 17 MOOCs offered through edX, 66% of all participants and 74% of those who received certificates had a bachelor’s degree or higher, with an average age of 26 years” [31].

In a study F. Holland and D. Tirthali “active in the MOOC space” based on more than 80 interviews at 62 institutions, “researchers from the Teachers College at Columbia University, also concluded that most MOOC participants are already well-educated and employed, and only a small fraction of them are fully engaged in the courses”<sup>14</sup>.

Overall, the data indicate that “MOOCs currently fall short of ‘democratizing’ education and may, at the moment, do more to increase the education gap than to reduce it”<sup>15</sup>. Speaking of the future, “another concern inevitably arises that wealthy students will attend university while the poor will study using a computer”<sup>16</sup>.

Furthermore, scientists [31] critically evaluate the audience of MOOC courses, noting the passivity of the majority of students. EdX researchers [31] identified several levels of engagement in MOOCs: “only registered: registrants who never access the courseware (35 percent); only viewed: non-certified registrants who access the courseware, accessing less than half of the available chapters (56 percent); only explored: non-certified registrants who access more than half of the available chapters in the courseware, but did not get a certificate (4 percent); certified: registrants who earn a certificate in the course (5 percent)” [31]. As we can see, the number of students who have completed MOOC courses with a certificate and without one does not exceed 10% of the total number of registered users on the platform. P. Hill<sup>17</sup> identified five types of participants in Coursera courses, where the number of active users is extremely low (Figure 2).

W. Engle discovered similar patterns for MOOCs at the University of British Columbia on Coursera<sup>18</sup>: from one-third to half of the participants who registered for MOOCs ultimately do not actively participate in the courses. Among those who have at least listened to one lecture, only 5–10% go on to obtain a certificate<sup>19</sup>. Thus, researchers note the high passivity of MOOC students.

<sup>13</sup> Coursera Conference Data. Paper Presented at the Coursera Partners’ Conference. London, UK: University of London; 2014.

<sup>14</sup> Hollands F., Tirthali D. MOOCs: Expectations and Reality. New York: Columbia University Teachers’ College, Center for Benefit-Cost Studies of Education; 2014. Available at: <https://www.cbcsce.org/publications/moocs-expectations-and-reality> (accessed 24.06.2023).

<sup>15</sup> Bates A.W. (Tony) Teaching in a Digital Age. Guidelines for Designing Teaching and Learning. University of British Columbia: BCcampus; 2015. Available at: <https://opentextbc.ca/teachinginadigitalage/> (accessed 24.06.2023).

<sup>16</sup> McGhee P. Why Online Courses can Never Totally Replace the Campus Experience [Electronic resource]. The Guardian. 19 November 2012. Available at: <https://www.theguardian.com/education/2012/nov/19/open-online-courses-higher-education> (accessed 24.06.2023).

<sup>17</sup> Hill P. Some Validation of MOOC Student Patterns Graphic [Electronic resource]. e-Literate. 2013. Available at: <https://eliterate.us/validation-mooc-student-patterns-graphic/> (accessed 24.06.2023).

<sup>18</sup> Engle W. UBC MOOC Pilot: Design and Delivery Vancouver BC: University of British Columbia; 2014. Available at: <http://flexible.learning.ubc.ca/files/2014/09/MOOC-Report.pdf> (accessed 24.06.2023).

<sup>19</sup> Ibid.

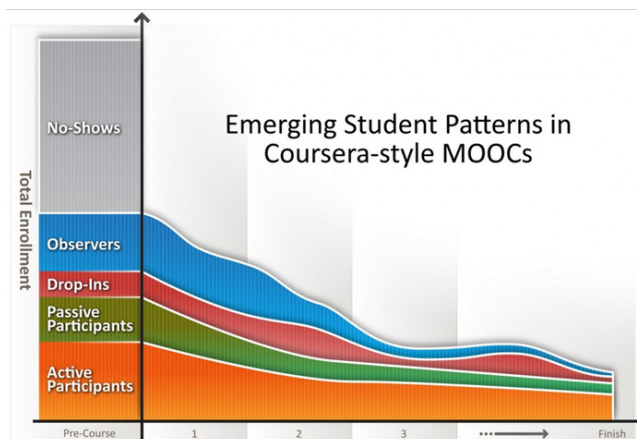


Fig. 2. Types of audiences in Coursera<sup>20</sup>

When discussing the drawbacks of short-term courses, researchers also highlight the weak technical infrastructure in the world, especially in developing countries, where many people lack access to the Internet and computers, preventing them from joining the courses. In 2017, more than half of the world's population (52%) did not have Internet access<sup>21</sup>. According to the United Nations, as of now, 37% of the world's population has never used the World Wide Web. Out of the 2.9 billion people not connected to the Internet, around 96% live in developing countries. Even among the 4.9 billion considered Internet users, many have infrequent access<sup>22</sup>. Even if Internet access is available, in many countries, the level of English proficiency does not allow local students to study on the courses. Localization of content, attracting substantial investments for translation or subtitling of courses into local languages, and involving a large number of editors, translators, and researchers may not always be feasible in poor developing countries. The lack of practical experience in online education is another significant drawback. Not all disciplines and courses can be replaced with virtual laboratories and interactive practical exercises. Many areas of knowledge still require offline work, practical immersion in reality, and collaboration in teams, which require the development of complex communication skills. Psychological problems arise for students studying exclusively online, including the need for strict self-control and self-discipline, declining motivation over time, the difficulty of evaluating creative assignments using machine algorithms, and the absence of direct communication with educators and peers. These are the realities of distance education that the pandemic, which closed schools and universities for several years, vividly demonstrated.

MOOCs are far from the only platform for open and free education. Other historical forms include libraries, archives, open textbooks and resources, educational broadcasting through various media, and other forms that are also freely available, but

<sup>20</sup> Engle W. UBC MOOC Pilot...

<sup>21</sup> Polonskaya A. [Almost 4 Billion People in the World Do Not Have Access to the Internet] [Electronic resource]. DW. 2017. Available at: <https://www.dw.com/ru/почти-4-миллиарда-человек-не-имеют-доступа-к-интернету/a-40568345> (accessed 24.06.2023).

<sup>22</sup> [37% of People Have Never Used the Internet] [Electronic resource]. United Nations. 2021. Available at: <https://news.un.org/ru/story/2021/11/1414732> (accessed 24.06.2023).





they do not have the same high reach as online delivery. However, unlike MOOCs, alternative forms of open education have never posed a threat to traditional university education, nor did they seek to replace or supplant formal credit-based learning; they were simply used as supplementary education. In the case of MOOCs, the situation is different. Today, MOOCs are posing a threat to the existence of universities, and there is an opinion that the knowledge obtained online is sufficient for effective work in the future.

“Non-formal and informal education, thanks to Internet technologies, are becoming real competitors to universities because they can provide education of sufficiently high quality but at a lower cost than modern higher education institutions, while reaching a significantly larger audience,” argue T. Klyachko and V. Mau<sup>23</sup>.

The idea that MOOCs courses could eventually push universities into the margins of history is real [32]. This idea is based on the current crisis in university education. Regarding this, J. Brewer asks, “Do any of these organizations [universities] apply a fully integrative approach to uniting human and ecological systems, capable of developing and implementing political solutions to avoid a massive planetary systemic collapse? Do they teach people to intervene in such a way as to save us from falling off the precipice of civilization? Are universities truly failing in their tasks and letting humanity down? I’m afraid the answer is yes” [33].

“The Western university is dead”<sup>24</sup> – with these words, Ronald Barnett began his inaugural professorial lecture at the Institute of Education at the University of London in 1997. Previously, J.-F. Lyotard wrote in his work “The Postmodern Condition” that in the postmodern world, “the university risks disappearing”<sup>25</sup>.

The value of the university in society is currently so low that more and more researchers are inclined to think that its necessity is disappearing [33].

Another question is to what extent MOOCs courses can be a sufficient alternative to traditional and declining classical universities?

At the moment, the answer is negative. Moreover, the complete replacement of university knowledge with online education, including MOOCs courses, carries serious threats, the consequences of which will be social catastrophes and a decline in the level of education worldwide.

In online education, it is not about the comprehensive formation of knowledge; rather, it is about the transmission and delivery of currently relevant information. Information is easily transmitted; it can be easily broken down into digital modules, expressed in programming languages in kilobytes/megabytes/gigabytes, and transmitted through various media. Furthermore, it can be unreliable and fake. “Possessing information is not equivalent to possessing knowledge” [34, p. 39] because knowledge is more than just possessing information. Knowledge is personally internalized, comprehensive, holistic information about the object of study. “The value of knowledge is determined by the measure of its truthfulness, while the value of information

<sup>23</sup> Klyachko T.L., Mau V.A. [The Future of Universities]. Moscow: Publishing House “Delo” RANEPa; 2015.

<sup>24</sup> Barnett R. [“Interpreting the University”]. In: Gusakovskiy M.A., Polonnikov A.A., Korbut A.M., editors. [Theoretical Issues in Education: Anthology]. Minsk: BSU; 2013. p. 5.

<sup>25</sup> Lyotard J.-F. [The Postmodern Condition]. Moscow: Institute of Experimental Sociology. St. Petersburg: Aleteya; 1998.



is determined by the measure of its functionality, its assistance in achieving a goal. In other words, information is instrumental in its essence” [34, p. 42].

Education through MOOCs is questionable because it does not encompass a number of crucial educational aspects: elements of upbringing, including ethics, aesthetics, moral education, and patriotic education; it does not adequately develop practical skills due to the limitations of the online sphere; it does not foster communicative skills due to the lack of live dialogue with other participants in the process. This form of education does not provide a holistic understanding of the world; it is limited by the functional, institutional, and narrowly pragmatic needs of the individual. Furthermore, the MOOC system is shaped by market conditions, which inevitably leads to the influence of commercialization and consumerism on the field of education. Only those courses and disciplines that are chosen by students, who act as clients within this system, receive support. Only those courses and disciplines that generate profit are actively invested in.

Finally, there is the phenomenon of education globalization, as knowledge today emanates from developed countries to less developed ones, with the vector of knowledge flowing from the West to the lagging East, from the more advanced North to the poorer South. “The main providers of MOOCs are predominantly based in North America. However, the students participating in MOOCs come from all over the world, including the United States (38.5%), Brazil (5.9%), India (5.2%), China (4.1%), Canada (4.1%), and the United Kingdom (4.0%)”<sup>26</sup>. Massive open online courses have recently become a hot topic for discussion in the field of higher education. Scholars from China, such as Yao Li and others, believe that “as a large-scale open online learning system, MOOCs have disrupted the old rules of global academic exchange and cooperation. It has not only established a new order, logic, and mechanism for the internationalization of higher education but also provided a new structure and opportunities for the globalization of higher education” [35].

Questions of fairness in higher education arise sharply, as MOOCs, proclaimed as a “means for unprecedented access to education and overcoming racial, class, age, gender, and geographical differences,” have not actually become such a means. R. Ichou, a scholar from Australia, doubts the ability of MOOCs to address this issue. “Courses will do little to reduce the global educational gap,” she writes [36].

Summing up the above, it should be noted that massive open online courses, despite having numerous positive aspects proven during the COVID-19 pandemic, pose a direct opposite threat to current universities. They entail the loss of integrity and fundamentality of education, the neglect of educational elements in higher education, excessive commercialization and consumerism in education. Additionally, they can become new conduits for the globalization of education, unfair and unequal distribution of resources, and the imposition of Western thinking and perception of the world on others, especially developing countries. The ambiguous interpretation of the role and significance of MOOCs in higher education, as well as the fact that massive online courses are a relatively recent human invention, suggests the need for further in-depth research and analysis of this contradictory phenomenon.

<sup>26</sup> Harris L. The Globalization of Education [Electronic resource]. Research Information. 2013. Available at: <https://www.researchinformation.info/feature/globalisation-education> (accessed 02.07.2023).

SWOT analysis helps to identify the advantages, disadvantages, opportunities, and threats for the future of higher education. The method helped to identify, on the one hand, the positive and negative aspects of the development of massive open online courses of the MOOCs, on the other, to identify the opportunities and threats of online learning systems for the future development of global and regional levels of higher education (Figure 3).

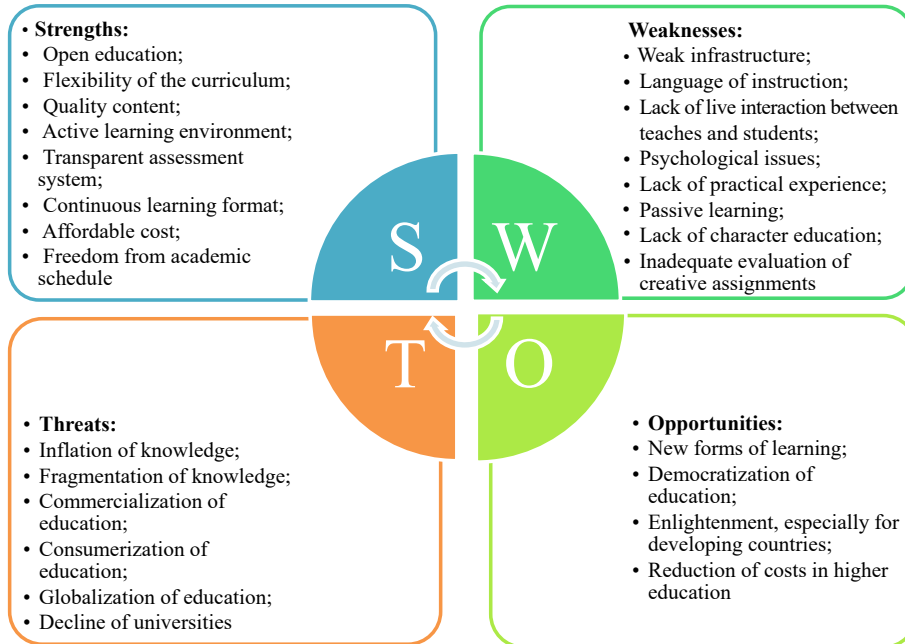


Fig. 3. SWOT Analysis – Assessment future evolution of massive open online courses<sup>27</sup>

*Strengths.* The strengths of MOOCs include:

1. Open education. MOOCs are educational courses offered by top universities around the world. They are accessible to anyone with a computer and Internet connection. This significant strength of MOOCs allows for valuable supplementation to traditional university education.

2. Flexibility of the educational program. The motto of short-term learning is “study only what you really need or like” [26]. MOOCs do not restrict the amount of information obtained, nor do they require the completion of all assignments. Users can choose to only attend lectures and take tests that they consider important for themselves. There is also the possibility to combine and complement various courses simultaneously.

3. High-quality content provided by leading universities worldwide. According to the US News World Report ranking, approximately 22 out of the top 25 universities in the United States currently offer free online courses. In 2023, the total number of universities involved in the MOOC system exceeded 1200. This advantage of short-term

<sup>27</sup> Figure compiled by the authors of the article.



online courses is particularly important for developing countries, as it provides an opportunity for accelerated development and bridging the education gap.

4. Active educational environment that encourages open discussion of the learning process, as well as a feedback mechanism that allows for timely improvements in the quality and effectiveness of the pedagogical process. MOOCs also provide opportunities for creating active educational and online communities based on interests.

5. Transparent assessment system that includes both testing and peer review. After providing answers, students receive detailed explanations of the questions. Peer reviews are conducted by multiple colleagues, and in some cases, instructors as well.

6. MOOCs are a valuable form of lifelong or continuous learning.

7. Low cost of MOOC courses due to computer automation, digitization, Internet access, and streamlined communication. This has significantly reduced the expenses associated with supporting students and evaluating their knowledge in higher education.

8. Freedom from academic schedules and university accreditation. MOOC courses are not tied to traditional semester-based university models. They can start at any time and have any duration. This makes MOOCs attractive to students focused on a specific topic or series of courses. They are also not tied to traditional university accreditation and can be offered with or without a certificate, depending on the students' needs.

*Weaknesses.* However, modern MOOC courses have several weaknesses, including:

1. Weak technical infrastructure. MOOC courses require access to high-speed Internet to transmit videos and other multimedia content. In many countries, even after the pandemic, there are issues with Internet access, especially in rural areas. According to Our World in Data, Internet access is still limited to less than 60% of the world's population. As a result, the impact of MOOCs is currently severely limited.

2. Language barrier. Typically, the majority of MOOC courses are offered in English, which limits access to resources for non-English-speaking students.

3. Lack of direct interaction between educators and students. Communication in courses is conducted in written form and mediated by computer technologies. Students do not develop oral communication and interpersonal skills.

4. Psychological issues related to solitary learning, such as feelings of isolation.

5. Lack of practical experience. Courses cannot replace hands-on or laboratory sessions that require offline participation. Online education is often limited in terms of practical application.

6. Passive learning and low motivation. Most online course participants are passive users. Courses, especially those that are more challenging to comprehend, require a high level of concentration, self-discipline, and responsibility. Prolonged online learning can lead to decreased motivation, resulting in many courses being left unfinished.

7. Lack of elements of character development in the educational process, including moral, spiritual, ethical, aesthetic, and patriotic education, as well as the absence of skills in teamwork and interpersonal communication.

8. Inadequate assessment of creative assignments. Neither machines nor fellow learners can adequately evaluate creative tasks. Only educators can do that. However,



in MOOC courses, instructors typically do not engage in grading assignments. Consequently, they are unable to identify the potential and talent of learners.

*Opportunities.* Open education also presents numerous opportunities, as scientists highlight the following:

1. New forms of learning. The possibility of shifting the focus from traditional forms of education to learner-centered educational approaches that cater to their needs.

2. Democratization of education. As digitization and Internet access continue to advance, providing high-quality content from top universities worldwide to a larger number of individuals who are interested.

3. Enlightenment. MOOCs can serve as an important tool for enlightenment in developing countries with low-income levels.

4. Cost reduction. MOOCs can significantly reduce the costs of university education.

*Threats.* The main threat of the MOOC system is the crisis faced by traditional university education. When the number of courses reaches its limit and offers students short-term programs in various disciplines and subjects, there is a high probability that students will prefer open, free courses over attending universities. This could lead to the degradation of university knowledge and even the complete disappearance of universities. The main threats are as follows:

1. Inflation and fragmentation of knowledge. Information replacing knowledge. MOOC courses offer not knowledge that should be personally internalized but rather a specific set of information. Information is easily fragmented, easily translated into machine language (in megabytes, gigabytes, and terabytes), easily evaluated, and easily transformed into new courses. Moreover, short-term online courses cannot meet the needs of the student community for fundamental knowledge that provides a comprehensive understanding of the subject being studied.

2. Commercialization of education. MOOC projects are commercial endeavors that generate real income for universities. Profit is given priority. Consequently, commercially successful courses have the opportunity for development and the creation of new sub-courses, while courses that do not generate profit and incur losses are doomed to failure and oblivion, even if they address important areas of science and life.

3. Consumerization of education. MOOC courses are designed not based on the logic of real needs in science and society but rather on the preferences of the audience – the learner users. Accordingly, the emphasis is placed on less important topics for society, such as business and finance, at the expense of natural and humanities sciences.

4. Globalization of education. MOOC courses are predominantly offered by Western and American higher educational institutions, which dominate technologically in the world. Along with information, the courses also transmit the dominant Western way of thinking, teaching style, and worldview.

5. Oblivion of universities. The threat to the existence of universities and the decline of higher education. As a result, there is a crisis and decline in culture.

**Discussion and Conclusion.** Thus, Massive open online courses have proven themselves as an important addition to traditional university education. They allow students to enhance their skills.



The flexibility of the curriculum, accessibility from anywhere in the world, active learning environment and online student communities, lifelong learning opportunities, affordable tuition, and high-quality content from top universities attract an increasing number of students to the MOOC system. MOOCs are associated with hopes for the democratization of higher education, overcoming global educational inequality, and are referred to as a new tool for the Enlightenment of peoples, a new paradigm in education, thanks to the active implementation of the latest information and virtual technologies, a revolution similar to Gutenberg's invention of the printing press.

However, alongside the positive aspects of MOOCs, scholars often point out the negative sides of massive open online courses. Some of these issues have already manifested, such as the problems faced by the majority of the world's population in accessing computers and the Internet, which raises questions about the democratization of education, or the problems experienced by students due to the lack of live dialogue and teacher involvement, leading to both psychological and communicative challenges.

Other problems, however, will only become apparent in the future. These issues pose serious threats to the functioning of higher education, risking stagnation and a new phase of the global educational crisis. We are talking about the complete displacement of higher educational institutions by MOOCs. Today, massive open education is no longer viewed by many participants in the education process as a supplement to traditional education but as a real alternative. In this form, MOOCs pose a significant threat as they undermine the fundamentality and integrity of education. They do not contribute to the humanization of knowledge, do not nurture or shape individuals but merely transmit up-to-date information from various spheres of life, narrowly focused and market-oriented. MOOCs become conduits for globalization originating from Western countries, carriers of neoliberalism that prioritizes the market, breaking ties with the traditional university that has long-standing roots and the traditions of classical learning. All of this raises serious concerns about the loss of education as a whole.

It should also be noted that the phenomenon of MOOCs is young, starting from 2008. Many in-depth and multi-aspect research is still required to uncover the potential of massive open education, mitigate its negative aspects, strengthen the positive ones, reduce threats, and harness potential opportunities so that MOOCs can truly become a means for universal enlightenment.

However, there is no doubt that despite all the strengths of online education, MOOCs will not be able to compete with universities. The idea of completely replacing universities through open education, actively discussed in contemporary scientific research literature, carries serious negative consequences. At the same time, MOOCs can be used as a supplement to traditional education, providing students with high-quality and relevant information on many subjects.

The practical significance of this study of the authors lies in the analysis and generalization of the problems of the development of online education. This article will be useful for anyone interested research issues of theoretical and practical aspects of the modern education system development (both regional and global levels of its formation).

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I. Yu. Pushkareva – structuring and analysis of research data.

K. K. Begalinova – the collection of materials; formulation of a scientific problem research and definition of the main directions of its decision.

E. A. Pushkareva – organization of the study; interpretation of the research results.

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