DOI: 10.55643/ser.1.69.2026.642

Yuliia Matvieieva
Candidate of Economic Sciences, Associate Professor of the Oleg Balatsky Department of Management, Sumy State University, Sumy, Ukraine;
ORCID: 0000-0002-3082-5551

Oleksii Demikhov
Candidate of Sciences in Public Administration, Associate Professor of the Oleg Balatsky Department of Management, Sumy State University, Sumy, Ukraine;
ORCID: 0000-0002-9715-9557

Yaroslav Reshetniak
PhD in Economics, CEDPL, Sumy State University, Sumy, Ukraine;
e-mail: ya.reshetniak@ntsa.sumdu.edu.ua
ORCID: 0000-0003-0806-0801
(Corresponding author)

Received: 13/01/2026
Accepted: 28/03/2026
Published: 31/03/2026

DISTANCE EDUCATION IN HIGHER EDUCATION: MANAGEMENT ASPECTS, HISTORICAL CONTEXT, AND BIBLIOMETRICS

ABSTRACT

The article is devoted to the disclosure and formation of a distance form of education from its inception to the current stage of its development. Migration processes and the growth of global sociopolitical challenges today necessitate a rethink of approaches to obtaining higher education. With the beginning of the COVID-19 pandemic and the military aggression of the Russian Federation against Ukraine, the issue of ensuring a continuous educational process in safe conditions has become acute. This, in turn, gave impetus to both the development of online technologies in education and the growth in the popularity of distance education. Based on this, the key goal of the work was to provide a bibliometric analysis to determine the state of scientific assessment in the field of online and distance education. The study was based on the search for scientific publications by title, abstract, and keywords. The period of the study of bibliographic data was from 1995 to 2025. For an effective bibliometric analysis of collaboration networks of scientists and countries, the VOSviewer version 1.6.16 software was used. Geographical analysis based on bibliometric data indicates that the largest number of publications was from Australia, Canada, China, Indonesia, Malaysia, South Africa, Spain, Turkey, the USA, and the United Kingdom. The bibliometric analysis covered 1,932 publications indexed by the Scopus from 1995 to 2025, covering issues of online and distance learning. During the cluster analysis of keywords, 6 clusters were identified: e-learning, distance education, education, internet, COVID-19, and digital learning. However, the area of implementing quality control in distance education in the context of implementing regulatory and legal regulation in Ukraine, as well as building internal university models of e-learning systems and best practice cases, remains insufficiently explored.

Keywords: distance education, blended learning, e-learning, online education, higher education, management, management aspects

JEL Classification: I20, I21, O15

INTRODUCTION

Globalization processes in the world economy have led to the interpenetration and intertwining of national economic systems. In turn, such internalization of socio-economic processes has led to an increase in migration processes among labor resources from underprivileged to more developed countries. The development of technologies, starting from the industrial revolution, has led to a significant increase in the need for highly qualified workers with a sufficient level of both practical and theoretical skills. This, in turn, has become an impetus for the development of the offer of educational services for obtaining higher education remotely.

The first attempts to establish distance education date back to the beginning of the industrial revolution, which was characterized by population growth and migration, and date back to 1840–1910 (Casey, 2008; Knysh, 2024). It was at this time that some universities in Europe and America began to explore the possibility of "correspondence education." Later, in the 20s and 50s of the 20th century, the era of Audio-Visual Learning was born, which allowed applicants to receive lectures at a distance via radio and television (Pittman, 1986; Bozkurt, 2019). With the advent of the first computers and computer networks, the modern formation of distance education and the need for its

management began. The development of technology in the 1990s contributed to the emergence of the concept of e-learning. However, the biggest impetus for the significant development of online learning platforms and distance education as a separate form of the educational process was the COVID-19 pandemic, which simultaneously forced both employers and educators to look for opportunities to conduct routine activities in conditions of minimal physical contact.

As for Ukraine, the first attempts to establish distance education began in the 1990s, but the real impetus came in 2000, when the Concept for the Development of Distance Education was approved, and the first higher education institutions were selected for its incremental implementation. The further development of distance education was less rapid and was marked by the adoption of the Regulation on Distance Education (2013) and the official introduction of the concept of "distance education" in the Law of Ukraine "On Higher Education" (2014). However, the pandemic and military aggression forced us to rethink the role of distance learning in modern realities.

LITERATURE REVIEW

An assessment of scientific research on the development of distance learning shows that scientists' interest in this issue began in the mid-1980-s. Thus, Holmberg (1986) examines the emergence of distance education in the late 19th century, analyzing the emergence of correspondence education in America. Pittman (1986), in his works, examines the impact of university radio broadcasting on the educational process in the 1920s and 1930s. Moore and Kearsley (1996) continue their research on the impact of television broadcasting on education in the United States. Aras Bozkurt (2019), in his work, provides a classification of the development of distance education by stages and key elements. Niemi J.A., Ehrhard B.J., and Neeley L. (1998) analyze the growth of the number of middle-aged applicants and their impact on the development of distance education. Bennett S. and Lockyer L. (2004) examine the impact of online technologies on the educational process and the development of online teaching skills among teachers. Means B. et al. (2013) in their article, they study the effectiveness of implementing blended or online learning in the educational process. Kaplan A.M. and Haenlein M. (2016) examine massive open online platforms, private online courses, and their impact on the development of distance education in higher education institutions.

AIMS AND OBJECTIVES

The purpose of the study is to analyse the evolution of distance education in terms of identifying key trends, thematic structures, and models of cooperation in its research using bibliometric analysis of publications. The main objectives of the research:

1. Analysis of the historical formation of distance education within the Ukrainian and global educational context.
2. Research on the dynamics of publications related to distance education by time and geographical distribution.
3. Research on the most influential authors and publications in the field of distance education.
4. Analysis of scientific cooperation networks using bibliometric mapping methods.

METHODS

The main source for the study of scientific publications was the scientific metric database Scopus (Table 1). The search was based on scientific publications by title, abstracts, and keywords related to distance education. The period for the study of bibliographic data was from 1998 to 2025. Completed articles published in English in journals were selected for the study, and the geography was also limited by excluding the aggressor country, the Russian Federation, and its satellite, Belarus (this limitation had a significant impact on the results of the study). To obtain a complete analysis, the study used VOSviewer 1.6.16 software for effective mapping and building cooperation networks. All research data was downloaded from open databases and therefore does not require additional approvals or permissions.

DOI: 10.55643/ser.1.69.2026.642

Table 1. Stages of the literature search and selection process. *(Source: compiled by the authors based on the methodology of Saher et al. (2021) and data from Scopus (n.d., e))*

Stage	Filters	Result
Stage 1. Data Collection		
Choice of suitable information sources	Scopus Database	–
Identification of the search field in the database	Title, abstract, keywords	–
Identification of the search key-words	distance education, blended learning, e-learning, online education, higher education	4 633 publications
Stage 2. Data screening		
Identification of the publication's time limits	1995–2025 (since the beginning of the growth of the number of publications on the subject)	4 622 publications
Publication stage	Final	4 590 publications
Identification of publication type	Journal articles only; conference papers, books, and chapters of books excluded	2 859 publications
Choice of the language	English	2 691 publications
Choice of the field of publication	Social Sciences; Business, Management and Accounting; Decision Sciences; Economics, Econometrics and Finance	1 981 publications
Country/territory	Russian Federation and Belarus excluded	1 932
Stage 3. Bibliometric analysis		
Tools	VOSviewer 1.6.16, Microsoft Excel	Visualization maps, charts

RESULTS

Based on the defined approach and screening of articles (Table 1), 1,932 publications on the topic of the study were identified in the period 1995–2025. The dynamics of publication activity on distance education issues and their citations are presented in Figure 1. A polynomial trend for publications over the past 30 years was also determined ($y = 0.5123x^2 - 6.9348x + 28.418, R^2 = 0.8432$). Over the studied period, the average growth rate of publication activity was 38.6%. The largest number of publications was indexed in 2023, 247, and the largest number of citations fell in 2020 and amounted to 8,032 citations. The three most cited publications were published in 2020, 2013, and 2014.

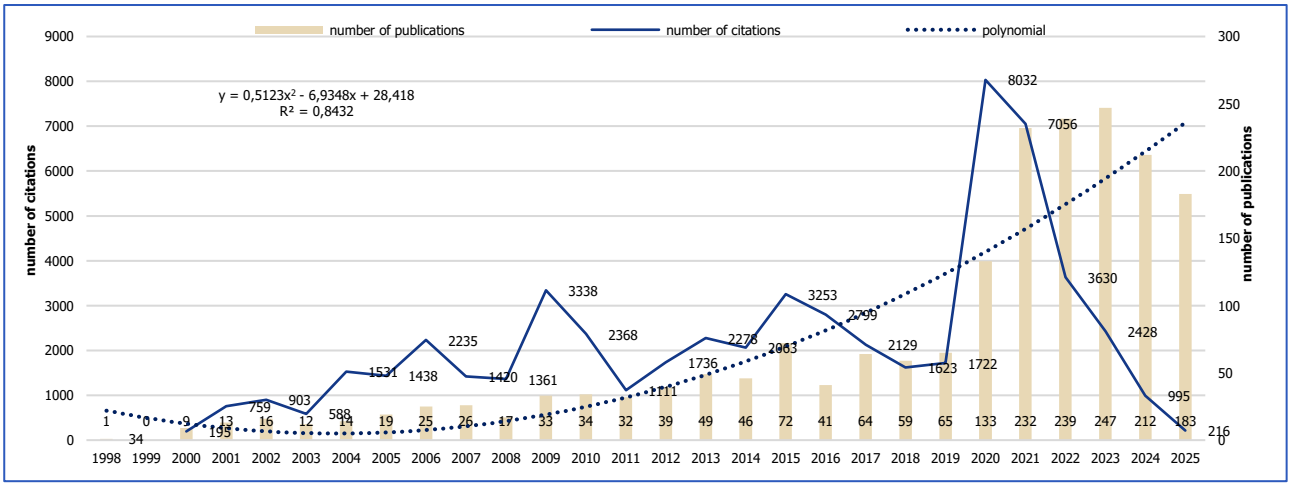

Figure 1. The dynamic of scientific publications on distance education and online education, indexed by the database Scopus for 1995–2025. *(Source: compiled by the authors based on the data of Scopus (n.d., e))*

A comparison of subject areas in research on the development of online and distance education is presented in Figure 2 and indicates the dominance of social and computer sciences. However, psychology and management sciences stand out

against the background of other subject areas, as well as a significant number of other areas, indicating a significant interdisciplinary nature of these studies.

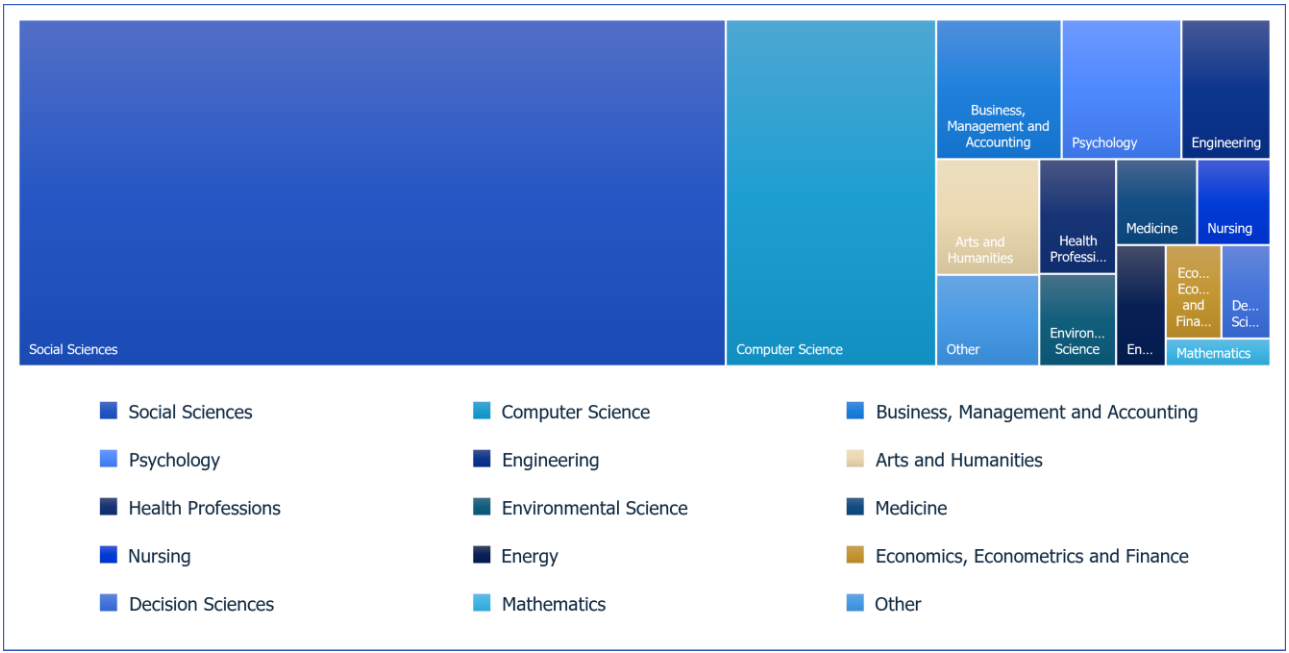

Figure 2. Publications on distance education and online education, selected by research areas. *(Source: compiled by the authors based on the data of Scopus (n.d., e))*

The ten most frequently cited publications on inclusive growth research in the Scopus database are listed in Table 2. Each of the publications listed has over 550 citations, indicating a significant contribution of these works to further research on online and distance learning.

Table 2. Top 10 leading publications about distance education and online education. *(Source: compiled by the authors based on the methodology of Saher et al. (2021) and data from Scopus (n.d., e)).*

Article title	Total citations	Author	Country affiliation	Journal/Year of publication
A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda (2020)	2 247	Radianti J., Majchrzak T.A., Fromm J., Wohlgenannt I.	Norway, Germany, Liechtenstein	2020 / Computers and Education
The effectiveness of online and blended learning: A meta-analysis of the empirical literature (2013)	930	Means B., Toyama Y., Murphy R., Baki M.	United States	2013 / Teachers College Record,
Initial trends in enrollment and completion of massive open online courses (2014)	701	Jordan, K.	United Kingdom	2014 / International Review of Research in Open and Distance Learning
Improving online learning: Student perceptions of useful and challenging characteristics (2004)	691	Song L., Singleton E.S., Hill J.R., Koh M.H.	United States	2004 / Internet and Higher Education
Learner readiness for online learning: Scale development and student perceptions (2010)	656	Hung M.-L., Chou C., Chen C.-H., Own Z.-Y.	Taiwan	2004/ Computers and Education
A meta-analysis of blended learning and technology use in higher education: From the general to the applied (2014)	563	Bernard R.M., Borokhovski E., Schmid R.F., Tamim R.M., Abrami P.C.	Canada, United Arab Emirates	2014 / Journal of Computing in Higher Education
The effectiveness of m-learning in the form of podcast revision lectures in higher education (2008)	559	Evans C.	United Kingdom	2008 / Computers and Education
Sense of community, perceived cognitive learning, and persistence in asynchronous learning networks (2002)	557	Rovai A.P.	United States	2002 / Internet and Higher Education
Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster (2016)	554	Kaplan A.M., Haenlein M.	France	2016 / Business Horizons
Factors influencing adult learners' decision to drop out or persist in online learning (2009)	550	Park J.-H., Choi H.J.	South Korea	2009 / Educational Technology and Society

DOI: 10.55643/ser.1.69.2026.642

The most cited publication, "A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda" by the European team of authors Radianti J., Majchrzak T.A., Fromm J., Wohlgenannt I. is dedicated to the study of the impact of VR on the educational process in higher education institutions (Radianti J. et al. 2020). The work of the team of scientists from the United States, Means B., Toyama Y., Murphy R., Baki M. "The effectiveness of online and blended learning: A meta-analysis of the empirical literature" is dedicated to comparing the effectiveness of fully online learning and a blended approach in distance education (Means B. et al., 2013), which has the second most cited indicator. The third most cited work by Jordan K. (2014), "Initial trends in enrollment and completion of massive open online courses", is devoted to the issue of the rapid growth of massive open online learning platforms and the comparison of enrollment and completion data for applicants.

The best researchers who have contributed to this field are listed in Table 3 (by the number of their publications). 24 authors have 4 or more publications on this topic, of which Harrison, R., Aristeidou, M., and Burgos, D. have 5 publications each; Bozkurt, A., 11; Rovai, A.P., 12 publications. At the same time, the h-index of three authors is quite significant and exceeds the mark of 24 points.

Table 3. Top 5 authors by the number of publications in the field of distance education and online education during 1995–2025. *(Source: compiled by the authors based on the methodology of Saher et al. (2021) and data from Scopus (n.d., e))*

Author	Total publications	Total citations	Average citation per publication	h-index	Affiliation
Rovai, A.P.	12	2 082	173.5	24	Regent University, Virginia Beach, United States
Bozkurt, A.	11	334	30.4	33	Anadolu Üniversitesi, Eskisehir, Turkey
Burgos, D.	5	170	34	29	International University of La Rioja, Logrono, Spain
Harrison, R.	5	94	18.8	9	Faculty of Biology, Medicine and Health, Manchester, United Kingdom
Aristeidou, M.	5	85	17	13	The Open University, Milton Keynes, United Kingdom

Figure 3 shows a visualization map of the terms used, their relationships, and word combinations both within one cluster and between different clusters. This map was generated using the software for bibliometric data analysis – VOSviewer 1.6.16.

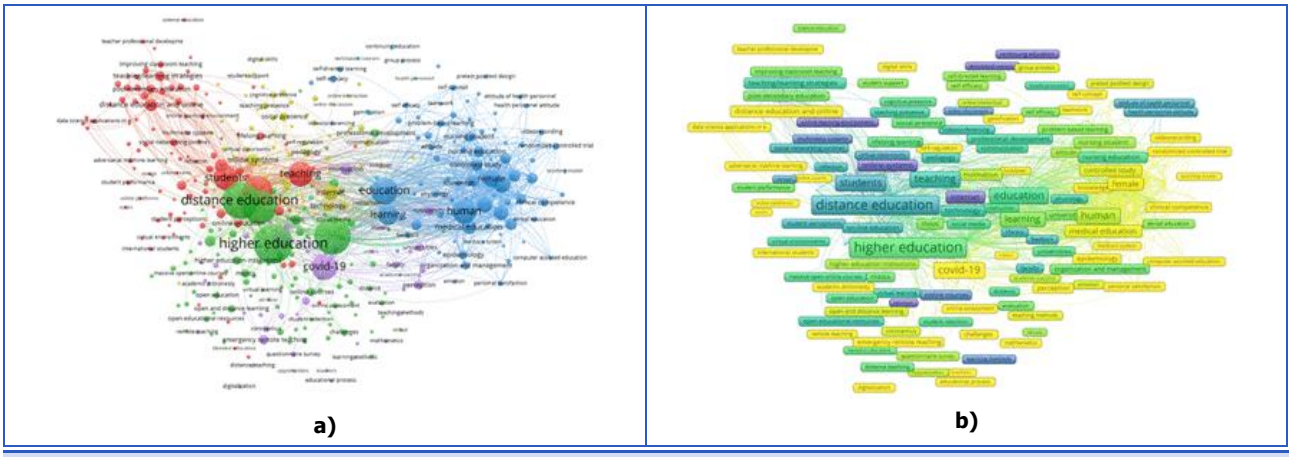

Figure 3. Visualization map of the keyword network in the distance education and online education sphere (a) and by the time (b). *(Source: compiled by the authors on the data of Scopus (n.d., e))*

The initial number of keywords was 5,949, but after setting the frequency of occurrence to more than 5 times, 503 words were selected. Based on this data, we obtained the distribution of keywords by clusters (Figure 3a) and by the chronology of use (Figure 3b).

The most powerful cluster is red, which encompasses 100 keywords that are formed around the concept of "e-learning". Further, the largest keywords of this cluster, such as "learning" and "students", are directly related to the concept of using digital technologies in the educational process and improving the quality of educational services.

The second largest cluster (green) is formed around the concepts of "distance learning" and "online learning" and includes 98 words. This cluster has the greatest connection to the concept of "higher education" and the implementation of distance learning in various fields. The blue cluster, which includes 83 words, is the third largest and is formed around the concepts of "learning" and "person". The yellow cluster includes 63 words and is formed around the concepts of "online systems", "Internet" and "technology". The purple cluster is an expression of a more modern development of distance education and is associated with the pandemic. It is formed around the keyword "COVID-19" and includes 43 concepts related to overcoming the consequences of the pandemic in the educational environment. The last, orange cluster is the smallest and most diverse and is associated with the concepts of "self-learning" and "self-development".

If we analyze the keywords by timeline, we can get the following periods: until 2015 – the development of online learning and the formation of the e-learning concept; 2016–2020 – distance education; from 2021 – the impact of the pandemic on the educational process, the development and implementation of new technologies, such as artificial intelligence and augmented reality.

Regarding the geographical distribution, according to the mapping of scientific metric data, we have three powerful clusters: American-English, European, and Asian (Figure 4). According to these clusters, we can track the level of cooperation between scientists from different countries and their contribution to the general study of distance and online learning problems (Figure 5).

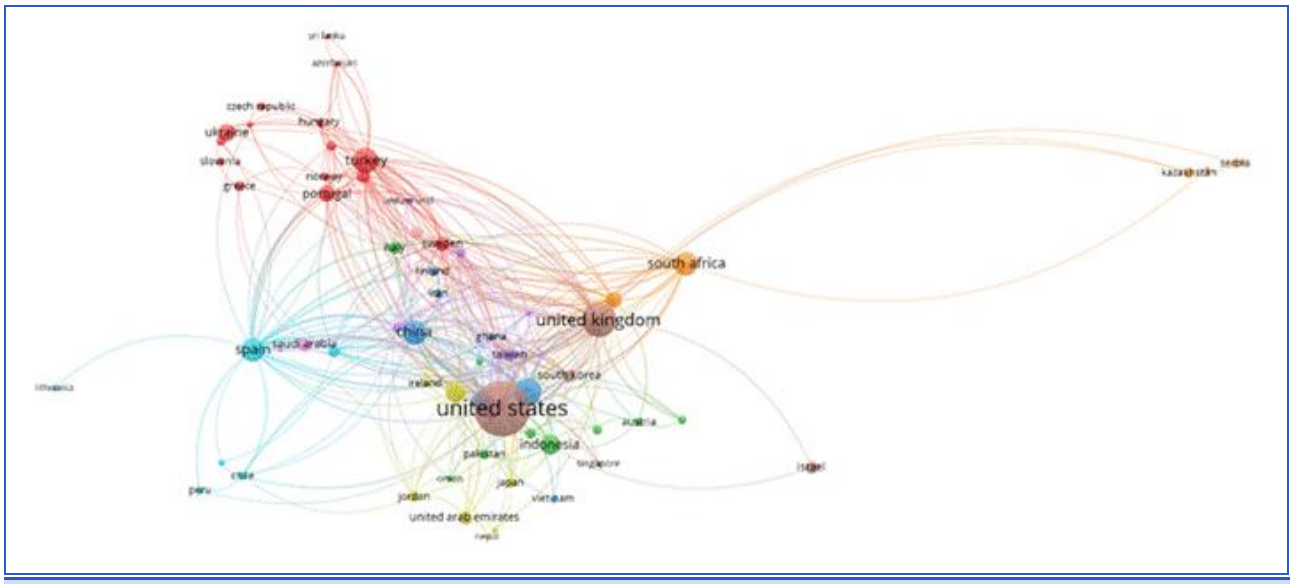

Figure 4. Geographical distribution of scientific collaboration. *(Source: compiled by the authors on the data of Scopus (n.d., e))*

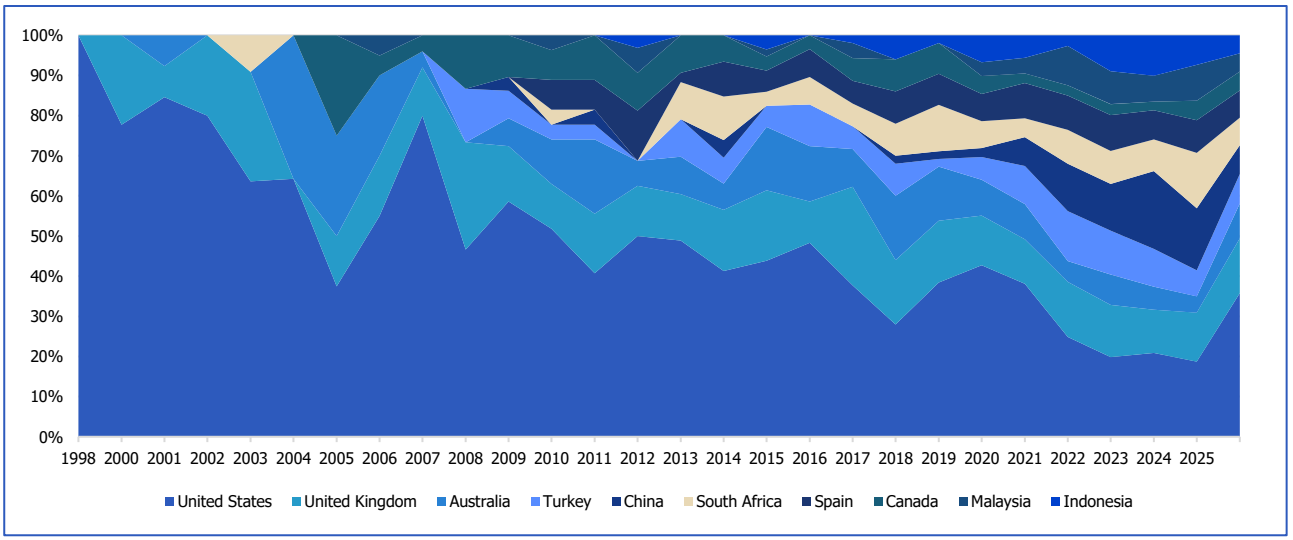

Figure 5. Annual distribution of the top 10 countries by number of publications, compiled by the authors. *(Source: compiled by the authors on the data of Scopus (n.d., e))*

DOI: 10.55643/ser.1.69.2026.642

So, distance learning is an important part of the higher education system, about which we have plenty of publications. However, to understand why it has achieved such significance, it is necessary to analyze its historical background.

The problem of open education first arose with the beginning of the Industrial Revolution in the late 18th and throughout the XIXth centuries. This period in history, according to the classification of domestic and foreign researchers, is commonly called the correspondence stage and represents the first attempts to establish distance education.

The correspondence stage in the development of distance education is characterized by two key areas:

1. The emergence of the possibility of education through postal services.
2. The emergence of a correspondence form of education.

The first element includes the first highly specialized correspondence courses offered by Caleb Phillips (USA, 1728) and Isaac Pitman (United Kingdom, 1840), who offered distance learning of shorthand by sending materials and tasks by postal communication between them and students (Casey, 2008; Knysh, 2024).

Among the official institutions, the pioneers of distance education at the nascent stage should be considered the University of London (United Kingdom, 1858), the University of Wisconsin, and the University of Chicago (USA, 1892) (2018). In the first case, applicants were offered a revolutionary approach at that time to obtain bachelor's and master's degrees regardless of their actual location by taking exams and receiving diplomas by mail (Rysenko, 2015). The University of Wisconsin is the first institution to introduce the concept of "distance education". While the University of Chicago is the first in the world to introduce a completely distance course at the university level (Sharan, 2012).

Scientific and technological progress of the early 20th century contributed to the development of telecommunications technologies, which in turn allowed the broad masses of the population to gain access to radio and television broadcasting.

In 1912, the first legislative act on licensing radio broadcasting in the United States was adopted; thanks to this document, many universities received licenses for radio broadcasting and the launch of the first publicly available educational courses. One of the key pioneers in this direction can be considered the University of Iowa (USA, 1920s), which began to introduce radio courses and form correspondence courses in certain specialties based on materials from its radio lectures (Pittman, 1986). However, the actual existence of educational radio broadcasting ended in the early 1940s for all institutions of higher education.

The growth of the world's population and the beginning of the globalization of socio-economic processes in the post-war period led to the need to expand the possibilities of open education and to establish the world's first higher education institutions whose main profile is a blended or fully distance approach to the formation of the educational process.

In 1969, the world's first university with a distance learning form of organizing the educational process was founded in the United Kingdom based on a Royal Charter – The Open University (n.d., a). At the beginning of its activities, the university relied on conducting its lectures via radio and television. The project was launched using the capabilities of the national broadcaster BBC in the period 1971–2006; later, the educational programs began to be distributed on DVD. The television format was replaced in 2006 by the OpenLearn educational platform (J. Daniel & D. Killion, 2012). Today, the university has over 2 million graduates and is in the 801–1000 category according to the Times Higher Education World University Rankings 2026 (n.d., b).

The University of Hagen, founded in 1974 in Germany, is based on a combination of full-time study and blended learning. Unlike most higher education institutions specializing in distance education, it is completely state-owned. At the beginning of its existence, the university conducted the educational process by sending educational materials by mail and using the first 13 training centers (n.d., c). Today, the University of Hagen training centers are open in the largest German-speaking countries. Since 1979, the university has been forming its own computer network, which allows applicants from training centers to gain direct access to the main university. Since 1994, the university has been launching the first version of its own online learning platform, and since 1999–2000, the first fully online bachelor's program has been launched. Today, the university has approximately 70 thousand active applicants and is in the 801–1000 category according to the Times Higher Education World University Rankings 2026 (n.d., b).

Aras Bozkurt, in his classification of the formation of distance higher education, classifies the period from 1900 to the end of the 1990s as the "Visual-auditory" stage of the formation of distance education, since it is based on the remote audio and visual perception of educational materials by applicants (Bozkurt, 2019). However, in our opinion, it is important to distinguish in this period another stage of the formation of distance education, which lasted from the mid-60-s to the 90s of the 20th century and is associated with the development of computer technologies and the Internet.

ISSN: 2786-5800 | eISSN: 2786-5819 | Том 1 (59), 2026

The beginning of the development stage of distance education related to computer technologies starts with the creation of ARPANET – an experimental computer network to unite researchers and research institutions from different parts of the USA (n.d., d). Thus, in 1969, the first successful exchange of information between two remote computers and further expansion of the network took place. Based on this success, using the IBM 1500 computer with the support of scientists from Stanford University, the first educational computer network was formed to teach elementary school students the basics of programming.

The growth of the number of technological developments leads to a decrease in the number of computers and the appearance of the first personal computers, and the further development of ARPANET and its analogues leads to the emergence of the Internet and the transition to a new stage in the development of distance education – the formation of the concept of "e-learning".

The emergence of the concept of e-learning and the development of IT technologies in the early 90s of the XX century led to the emergence of the first systems for managing the educational environment. In 1991, the world's first LMS – EKKO was developed by the Norwegian company NKI (Tamm, 2021). This platform included the ability to use e-mail, hold conferences, create announcements, and post courses. In 1995–1996, the University of British Columbia created its own LMS – WebCT – which specialized in an online environment with the ability to post educational materials, conduct assessments through testing, monitor progress, and create forums for discussion. However, in 2026, this platform was bought out by its competitor Blackboard Inc., which in 1996 in the USA created its own Blackboard system, which had slightly different functionality, such as the assignment of roles (student, teacher, administrator) (Bradford P. et al., 2008).

In 2001, one of the most popular LMSs in the world appeared – Moodle. The features of this online environment were the openness of the program code, adaptability to different operating systems, and implementation of newer e-learning standards (Rogers P. L. et al., 2009). Also, a significant part of HEIs chose the path of creating individual educational platforms by analogy with The Open University.

Since the beginning of the 21st century, the main emphasis has shifted from the technical process to establishing clear criteria for assessing the quality of the educational process in distance education. The COVID-19 pandemic has forced educational institutions to reassess approaches to traditional forms and methods of teaching. Starting in 2020, online learning platforms such as Moodle have become widely popular. Approaches that for decades were implemented exclusively for distance education students have become a life-saving management solution for continuing the educational process in full-time education.

The development of artificial intelligence and augmented reality technologies is a new and final stage in the development of distance education at the current stage, allowing the applicant not to leave their own home to attend classes or engage in international academic mobility.

The formation of distance education in Ukraine began in the 90s and was characterized by the appearance of audiovisual support for students of correspondence education. The turning point occurred in 2000 with the adoption of the Concept of Development of Distance Education, from which time its formation as a separate form of education began. The experimental project of the Ministry of Education and Science in 2002 selected several educational institutions that began to implement distance education in their activities. In most cases, Ukrainian HEIs used a practice similar to the University of Hagen, namely the opening of distance communication centers in different regions and the provision of a mixed format of face-to-face classes and computer technologies available at that time for conducting distance learning and assessing applicants.

The Regulation on Distance Education (2013), and, later, the appearance of an official definition of the concept of "distance education" (2014) allowed educational institutions to begin official recruitment for this form of education. As of 2025, according to EDEBO data, more than 10 universities in economics, management, and computer sciences provide distance education.

The COVID-19 pandemic has had a significant impact on Ukraine. A significant number of educational institutions were forced to switch to online platforms to continue the educational process. For example, primary and secondary education institutions focused on the online platform Google Classroom. Universities preferred the platforms Moodle, Microsoft Teams, or their own developments, such as, for example, the "Single Educational Platform MiX" at Sumy State University.

The beginning of the Russian Federation's aggression in 2022 led to the displacement of a significant number of people both within Ukraine and abroad. Such population migration led to an increase in applicants who wish to obtain higher education in Ukraine, but their geographical location or current living conditions do not allow them to study full-time.

DOI: 10.55643/ser.1.69.2026.642

DISCUSSION

Research of historical retrospectives and bibliometric analysis shows that distance education has gone through a complex transformational path from an auxiliary element to a key factor in ensuring the stability of the educational process in conditions of uncertainty. The results of the analysis indicate the rapid development of the industry and a high level of its digitalization. Distance education itself has become a key driver for the emergence of LMS and other automated systems in educational institutions of the higher education process.

In turn, the high technological development has led to an increase in the interest of scientists. As a result, the average growth of articles for the period 1995–2025 indexed by the Scopus database was 38.6%. Another factor that had a significant impact on its popularization has become adaptive. So, during the pandemic, this allowed the educational process not to stop. For example, scientists Bozkurt (2019), Means B. et al. (2013), and Radianti J. et al. (2020) consider distance education as a driving technological process of learning. They examine both the formation of distance education as a whole and the impact of modern technologies on the delivery of educational material. Publications after 2020 shift the emphasis to the adaptability of the system and the prevention of serious social impacts during a pandemic and military conflicts. The study of distance learning is especially relevant for Ukraine, which requires the implementation of non-technological choices for us. It is the only tool for ensuring the sustainability and continuity of the educational process in conditions of military aggression and mass migration of applicants.

At the same time, the results of this study have certain limitations that should be addressed. First, the sample was based on the use of English-language materials from the Scopus database, which could remain outside the scope of certain local studies published in other languages. Second, the deliberate exclusion of data from the aggressor country and Belarus due to ethical considerations.

In conclusion, it can be stated that distance education has successfully passed the path of institutionalization and today provides vectors for the development of higher education. The formed scientific clusters around e-learning, artificial intelligence, and crisis management indicate that the future of the industry lies in the plane of hybrid models and strengthening of managerial control over the quality of digital content. For the educational space, the further development of this system is critically important for Ukraine, not only in preserving human capital but also for full integration into the global scientific and educational space. Thus, distance learning has finally moved from the category of "alternative methods" to the status of an integral component of effective management of modern higher education.

CONCLUSIONS

Distance education has a long history and has undergone a significant transformation, becoming the flagship of the digital development of the educational process. Its emergence in the XIXth century was a response to the growth of population migration, having grown into the basis for testing and adapting new technologies to the educational process at the modern stage. Its ability to quickly adapt to external threats makes it extremely attractive for higher education institutions. In turn, this leads to an increase in scientific interest in studying both the emergence of distance education and its impact on increasing the efficiency of the educational process. A bibliometric analysis of publications for the period 1995–2025 based on a sample of 1 932 articles indexed by the Scopus database on the issues of the development of distance and online learning indicates the existence of key clusters of the following studies: the introduction of the e-learning concept into the educational process; assessment of the effectiveness of distance education and online education in higher education institutions; human development; the impact of Internet technologies; the impact of external factors, such as the pandemic, on the educational process; opportunities for self-development and self-improvement. On a geographical basis, the relationship between the international cooperation of scientists and the role of these countries in the development of distance education is clearly traced. However, the issues of regional aspects of the effectiveness of the implementation of distance education in Eastern European countries remain little studied. In the future, we see the need to conduct a broader study of the impact of introducing distance education into the educational process of Ukrainian universities as an element of anti-crisis management to ensure the continuity of the educational process.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

FUNDING

The Authors received no funding for this research.

CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

REFERENCES

1. Bennett, S., & Lockyer, L. (2004). Becoming an online teacher: Adapting to a changed environment for teaching and learning in higher education. *Educational Media International, 41*(3), 231-248. https://doi.org/10.1080/09523980410001680842?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle
2. Bernard, R.M., Borokhovski, E., Schmid, R.F. et al. (2014). A meta-analysis of blended learning and technology use in higher education: from the general to the applied. *J Comput High Educ, 26*, 87–122. https://doi.org/10.1007/s12528-013-9077-3
3. Bozkurt, A. (2019). From distance education to open and distance learning: A holistic evaluation of history, definitions, and theories. In Handbook of research on learning in the age of transhumanism (pp. 252-273). IGI Global.
4. Bradford, P., Porciello, M., Balkon, N., & Backus, D. (2007). The Blackboard learning system: The be all and end all in educational instruction? *Journal of Educational Technology Systems, 35*(3), 301-314. https://doi.org/10.2190/X137-X73L-5261-5656
5. Casey, D. M. (2008). The historical development of distance education through technology. *TechTrends, 52*(2), 45-51. https://doi.org/10.1007/s11528-008-0135-z
6. Daniel, J., & Killion, D. (2012, July 4). Are open educational resources the key to global economic growth? The Guardian Professional. https://www.theguardian.com/higher-education-network/blog/2012/jul/04/open-educational-resources-and-economic-growth
7. Evans, C. (2008). The effectiveness of M- learning in the form of podcast revision lectures in higher education. *Computers & Education, 50*(2), 491–498. https://doi.org/10.1016/j.compedu.2007.09.016
8. FernUniversität in Hagen. (n.d.). FernUniversität in Hagen official website. https://www.fernuni-hagen.de/
9. Featherly, K. (n.d.). ARPANET. In Encyclopædia Britannica. Encyclopædia Britannica, Inc. https://www.britannica.com/topic/ARPANET
10. Hung, M. L., Chou, C., Chen, C. H., & Own, Z. Y. (2010). Learner readiness for online learning: Scale development and student perceptions. *Computers & Education, 55*(3), 1080–1090. https://doi.org/10.1016/j.compedu.2010.05.004
11. Holmberg, B. (1986). Growth and structure of distance education (3rd ed.). Croom Helm.
12. Jordan, K. (2014). Initial trends in enrolment and completion of massive open online courses. *International Review of Research in Open and Distributed Learning, 15*(1), 133-160. https://doi.org/10.19173/irrodl.v15i1.1651
13. Kaplan, A. M., & Haenlein, M. (2016). Higher education and the digital revolution: About MOOCs, SPOCs, social media, and the Cookie Monster. *Business Horizons, 59*(4), 441-450. https://doi.org/10.1016/j.bushor.2016.03.008
14. Knysh, O. (2024). Retrospective analysis of the development and formation of distance education. Aktualni pytannia humanitarnykh nauk, 248-252. https://doi.org/10.24919/2308-4863/72-2-38
15. Ministry of Education and Science of Ukraine. (2013). On approval of the regulation on distance learning: Order No. 466 of April 25, 2013. Database "Legislation of Ukraine", Verkhovna Rada of Ukraine. https://zakon.rada.gov.ua/go/z0703-13
16. Moore, M. G., & Kearsley, G. (1996). Distance education: A systems view. Wadsworth.
17. Moore, M.G., & Diehl, W.C. (Eds.). (2018). Handbook of Distance Education (4th ed.). Routledge. https://doi.org/10.4324/9781315296135
18. Means, B., Toyama, Y., Murphy, R., & Baki, M. (2013). The effectiveness of online and blended learning: A meta-analysis of the empirical literature. *Teachers College Record, 115*(3), 1-47. https://doi.org/10.1177/016146811311500307?urlappend=%3Futm_source%3Dresearchgate.net%26utm_medium%3Darticle
19. Niemi, J. A., Ehrhard, B., & Neeley, L. (1998). Off-campus library support for distance adult learners.
20. Park, J., & Choi, H. (2010). Factors influencing adult learners' decision to drop out or persist in online learning. *Educational Technology & Society, 12*(4), 207–210. https://www.jstor.org/stable/jeductechsoci.12.4.207
21. Pittman, V. V. (1986). Pioneering instructional radio in the US: Five years of frustration at the University of Iowa, 1925–1930. Paper presented at the First International Conference on the History of Adult Education, Oxford, UK.
22. Radianti, J., Majchrzak, T. A., Fromm, J., & Wohlgenannt, I. (2020). A systematic review of immersive virtual reality applications for higher education: Design elements, lessons learned, and research agenda. *Computers & Education, 147,* 103778. https://doi.org/10.1016/j.compedu.2019.103778
23. Rogers, P. L., Berg, G. A., Boettcher, J. V., Howard, C., Justice, L., & Schenk, K. D. (Eds.). (2009). Encyclopedia of distance learning (2nd ed.). IGI Global. https://books.google.com.ua/books?id=sC9Le3jIwzIC
24. Rovai, A. P. (2002). Sense of community, perceived cognitive learning, and persistence in asynchronous learning networks. *The Internet and Higher Education, 5*(4), 319–332. https://doi.org/10.1016/S1096-7516(02)00130-6

DOI: 10.55643/ser.1.69.2026.642

25. Rysenko, Ya. O. (2010). Historical development of distance education in Great Britain. *Naukovi zapysky kafedry pedahohiky, 24,* 166-172. https://periodicals.karazin.ua/pedagogy/article/view/3892/3459
26. Saher, L., Tambovceva, T., & Miskiewicz, R. (2021). Research Progress and Knowledge Structure of Inclusive Growth: A Bibliometric Analysis. *Virtual Economics, 4*(4), 7–20. https://doi.org/10.34021/ve.2021.04.04(1)
27. Song, L., Singleton, E. S., Hill, J. R., & Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *The Internet and Higher Education, 7*(1), 59–70. https://doi.org/10.1016/j.iheduc.2003.11.003
28. Tamm, S. (2021). What is an LMS (learning management system)? E-Student. https://e-student.org/what-is-lms/
29. Times Higher Education. (n.d.). World university rankings (latest edition). https://www.timeshighereducation.com/world-university-rankings/latest/world-ranking
30. The Open University. (n.d.). The Open University official website. https://www.open.ac.uk
31. Verkhovna Rada of Ukraine. (2014). Law of Ukraine "On higher education". https://zakon.rada.gov.ua/laws/show/1556-18

Матвєєва Ю., Деміхов О., Решетняк Я.

ДИСТАНЦІЙНА ОСВІТА У ВИЩІЙ ШКОЛІ: УПРАВЛІНСЬКІ АСПЕКТИ, ІСТОРИЧНИЙ КОНТЕКСТ І БІБЛІОМЕТРІЯ

Стаття присвячена розкриттю та становленню дистанційної форми освіти від її зародження до сучасного етапу розвитку. Міграційні процеси та зростання глобальних соціально-політичних викликів сьогодення вимагають переосмислення підходів до здобуття вищої освіти. З початком пандемії COVID-19 і повномасштабної воєнної агресії російської федерації проти України гостро постало питання забезпечення безперервного освітнього процесу в безпечних умовах. Це, своєю чергою, дало поштовх і розвиткові онлайн-технологій в освіті, і зростанню популярності дистанційної освіти. Отож, ключовою метою роботи було надання бібліометричного аналізу для визначення стану наукової оцінки в галузі онлайн і дистанційної освіти. Дослідження базувалося на пошуку наукових публікацій за назвою, анотацією та ключовими словами. Періодом дослідження бібліографічних даних став період із 1995 по 2025 рік. Для отримання повного аналізу в дослідженні використано програмне забезпечення VOSviewer 1.6.16 для ефективного картування та побудови мереж співпраці. Географічний аналіз на основі бібліометричних даних показує, що найбільшу кількість досліджень опублікували науковці зі США, Великої Британії, Австралії, Туреччини, Китаю, Південної Африки, Іспанії, Канади, Малайзії та Індонезії. Бібліометричний аналіз охопив 1 932 публікації, проіндексовані науково-метричною базою даних Scopus із 1995 по 2025 рік, що охоплюють питання онлайн і дистанційного навчання. Під час кластерного аналізу ключових слів було виявлено 6 кластерів: електронне навчання, дистанційна освіта, освіта, інтернет, COVID-19 і цифрове навчання. Однак царина впровадження контролю якості в дистанційній освіті в контексті впровадження нормативно-правового регулювання в Україні, а також побудова внутрішніх університетських моделей систем електронного навчання та прикладів найкращої практики залишаються недостатньо дослідженими.

Ключові слова: дистанційна освіта, змішане навчання, електронне навчання, онлайн-освіта, вища освіта, менеджмент, управлінські аспекти

JEL Класифікація: I20, I21, O15