

A JOURNEY INTO THE HISTORY OF DISTANCE EDUCATION – FROM CORRESPONDENCE COURSES TO EDUCATION DURING THE COVID-19 PANDEMIC

RADOJEVIĆ ALEKSIĆ Ivona¹, MORETIĆ -MIĆIĆ Snežana²

¹ University of Kragujevac, Faculty of Technical Sciences Cacak, Cacak, (SERBIA) ORCID 0009-0005-5953-9574

² Faculty of Business Economics and Entrepreneurship, Belgrade (SERBIA) ORCID 0009-0008-1709-082X

E-mails: ivona.radojevicaleksic@ftn.kg.ac.rs; smoreticmicic@gmail.com

ABSTRACT

The history of distance learning has witnessed a remarkable evolution, from its inception as correspondence courses to its pivotal role in the era of the COVID-19 pandemic. This paper presents a historical overview of the significant milestones and transformations in distance learning, highlighting the technological advancements, pedagogical approaches, and social shifts that have shaped its development. Beginning with the establishment of correspondence courses, which allowed learners to access education regardless of geographic constraints, distance learning gradually embraced audiovisual technologies, such as radio and television, enhancing the delivery and interactivity of educational content. The advent of the internet and digital platforms propelled distance learning to new heights, enabling global access to knowledge through online courses and Massive Open Online Courses (MOOCs). However, it was the outbreak of the COVID-19 pandemic that catapulted distance learning to the forefront of education worldwide. School closures necessitated a rapid transition to online and remote learning, highlighting the critical role of distance learning in maintaining educational continuity. The pandemic also underscored challenges such as the digital divide, the need for digital literacy, and the importance of inclusive resource access. Despite these challenges, the history of distance learning demonstrates its resilience, adaptability, and transformative power in expanding educational access and promoting lifelong learning. Looking ahead, it is crucial to build upon the lessons learned and leverage technology to enhance the quality, accessibility, and inclusivity of distance learning in a post-pandemic era.

Keywords: distance education, technology, learning, historical development, COVID-19 pandemic

JEL: I20

DOI: 10.5937/intrev2404049R

UDC: 37.018.43:004

616.98:578.834

COBISS.SR-ID 160117257

INTRODUCTION

In an increasingly interconnected world, education has undergone a remarkable transformation. To provide an overview of distance learning, it is essential to highlight the fundamental components of the learning process, which consist of a teacher, a student, an educational content, and a learning environment [1]. Irrespective of whether we are discussing a traditional or distance education model, the learning process would not be possible without a teacher and a student. When observed from a historical perspective, out of the four elements, the learning environment has undergone substantial changes and advancements [2].

While traditional classrooms remain the foundation of learning, the advent of distance learning has opened up new avenues for education, transcending geographical barriers and revolutionizing the way knowledge is imparted. Although 2020 will probably be remembered as the time when due to COVID-19 pandemic, distance education, distance learning, online learning or e-learning rapidly expanded worldwide, the concept of teaching and learning remotely is not a new one. The foundations for modern internet-based teaching and learning were laid long before the emergence of online platforms such as Skype, Zoom, Google Classroom, or even computers and internet respectively. In fact, the history of distance education spans three centuries and reflects an egalitarian approach to education [3].

RESEARCH OBJECTIVE AND METHODOLOGY

The objective of this paper is to provide a comprehensive overview of the historical development, key milestones, and significant trends in distance education over time. It offers valuable insights into the main features, advancements, and implications of each phase in the evolution of distance learning. The methodology used involves a systematic and exhaustive approach to examining the existing literature in the field. After conducting a rigorous and extensive search to identify pertinent literature, relevant information was carefully extracted and organized for analysis. The extracted data was then analyzed to determine recurring features, patterns, and trends in the development of distance learning. The resulting paper presents a logical and structured framework with sections that chronologically organize the information, allowing readers to grasp the historical progression and crucial enhancements in distance learning during the specified timeframe.

EARLY YEARS: CORRESPONDENCE COURSES

In 1728, a teacher Caleb Phillips published an advertisement in the Boston Gazette promising that "any person willing to learn may by having several lessons sent weekly to them, be as perfectly instructed as those that live in Boston" [4]. Correspondence courses, also known as "home study" or "independent study" emerged as a means to disseminate knowledge to those unable to attend physical institutions. However, they did not flourish until the nineteenth century when a new technology developed – cheap and reliable postal services mainly resulting from the railway networks spread [5]. Sir Isaac Pitman, the English inventor of shorthand, came up with an ingenious idea to deliver instruction to limitless audience by mail [6]. His initiative marked a significant milestone in the evolution of distance education. One of the earliest examples of mail-based correspondence courses was the Pitman Shorthand training program, which originated in Cincinnati, Ohio, in 1852 [4]. This program catered to self-taught secretaries who would submit their work via mail for evaluation. Upon successfully completing the course, participants were awarded a certificate of expertise [6]. Apart from women, other marginalized groups often excluded from formal educational opportunities, such as workers and farmers, were granted access to engage in learning and acquire knowledge. The advantages of the novel approach to education and teaching were quickly recognized, leading to a significant milestone in the history of distance learning. In 1892, the University of Chicago established the first college-level distance learning program, thereby granting academic recognition to this form of education [4]. This development marked a significant step forward in accepting and integrating distance learning within the academic realm. Establishing a reputable university-level program demonstrated the growing recognition of the effectiveness and value of distance learning as an alternative educational pathway. By reaching out to diverse social groups, correspondence education played a vital role in addressing social inequalities and reducing illiteracy rates creating a more inclusive educational landscape [7].

During this era of distance learning, print technology emerged as the dominant medium for delivering educational materials. As a consequence of the characteristics of written and printed materials, the macro age of distance education was marked by a didactic teaching style and an industrialized approach to education [7]. The reliance on print technology led to the development of instructional materials that were designed to be disseminated widely and delivered in a one-way communication model. This didactic teaching style emphasized the transmission of knowledge from the instructor to the learner, often with limited interaction or engagement. The industrialized form of education refers to the standardized and mass-produced nature of instructional materials, reflecting a systematized approach to education that aimed to reach a large number of learners efficiently. This phase of distance education, with its focus on print technology and its characteristics, fostered a teaching approach that prioritized information delivery and efficiency over personalized and interactive learning experiences.

THE BIRTH OF RADIO AND TELEVISION EDUCATION

Three decades later, the landscape of distance education experienced a transformative shift as new technologies emerged, rendering mail-based methods less dominant. The early 20th century witnessed a groundbreaking advancement in distance learning with the introduction of radio and television. These technological innovations revolutionized the field, providing new avenues for remotely delivering educational content to learners. The advent of radio enabled the broadcast of educational programs, while the emergence of television further enhanced the visual and interactive aspects of distance learning. These developments marked a significant turning point in the history of distance education, paving the way for more dynamic and engaging modes of instructional delivery.

The implementation of live educational radio addressed several constraints associated with correspondence education, particularly in terms of delivery time, and enhanced the sense of immediacy in the learning experience [7]. In the 1920s, radio broadcasts were utilized to transmit educational content, delivering lectures, discussions, and lessons to a broad audience. By 1923, educational institutions acquired approximately 10% of the radio stations available for educational purposes [3][4][7]. This development marked a significant milestone in the history of distance learning, showcasing the recognition of radio as a powerful medium for educational broadcasting. Educational institutions saw the potential of radio to reach a broad audience and deliver educational content beyond the confines of traditional classrooms. From 1918 to 1946, over 200 higher education institutions were granted licenses by the Federal Communications Commission (FCC)[8][3][4][7]. Radio Universities, such as the University of Wisconsin's experimental radio station, WHA, offered accredited courses to students who tuned in. It was the first federally licensed radio station in the field of education [9]. Initially, the level of interaction between learners and teachers was limited during this period. However, the progression from audio to visual-auditory technologies played a significant role in enhancing the quality and effectiveness of distance education.

Television's entry into the distance learning landscape further expanded access to education. In the 1950s, the National Educational Television (NET) network in the United States aired educational programs, enabling students to learn from the comfort of their homes. In 1963, the Instructional Television Fixed Service (ITFS), a band of 20 television channels available to educational institutes was established by the FCC, California State University system being the first to subscribe [4][7]. The establishment of the British Open University in 1969 marked a groundbreaking milestone in higher education by introducing televised lectures and correspondence materials. This innovation revolutionized the field of distance education. Notably, in the 1980s, the National Technological University made significant strides in distance education by utilizing satellite transmission to deliver a combination of real-time broadcast and recorded course material. These advancements represented a significant leap forward in the evolution of distance education methodologies. For the first time, "students were able to engage in a two way dialogue by phoning their instructors and getting their questions answered live on air"[4]. The visual and auditory nature of television facilitated effective communication of complex concepts, engaging learners through compelling visuals and engaging presentations. Moreover, the integration of interactive elements, such as quizzes and assessments, added an element of active participation, enhancing the learning experience. Television brought education into students' homes, democratizing access to knowledge and reaching a wider audience. While technological advancements and the rise of digital platforms have expanded the scope of distance learning, television continues to serve as a powerful medium for educational broadcasting, contributing to the evolution of distance education methodologies.

DIGITAL REVOLUTION: INTERNET AND ONLINE LEARNING

Soon, the distance education process rapidly improved by the introduction of the internet which enabled students to acquire educational materials from any place at any time [1]. The limitless potential of the internet accompanied by improvement of broadband connectivity and the affordability of the personal computers led to the establishment of the first fully internet based virtual institution – Jones International University [4]. Digital revolution marked a turning point in the history of distance education. With the emergence of online platforms, education became accessible to an even wider audience. In the 1990s, institutions began offering web-based courses, combining multimedia resources, discussion forums, and interactive elements to enhance the learning experience. The learning environment became student-centered while the learning content presented in an interactive format, often available for free, enabled faster and easier studying. The use of paper books in learning has become obsolete, leading to a considerable reduction in the cost of education. The concepts of time and place have also undergone significant changes, allowing learners to access educational materials and engage in learning activities at their own convenience and according to their individual needs [2].

One significant advantage provided by modern technological means in the context of distance education is the ability to engage in asynchronous communication. Asynchrony refers to the independence of time for contact between lecturers and students, as direct real-time interaction is not required [10]. This flexibility allows communication to occur at a time and pace that is convenient for each participant. Through the use of technology, such as online learning platforms, discussion boards, email, and recorded lectures, learners can access educational materials and communicate with their instructors at their own preferred time. This asynchronous communication nature accommodates students' diverse schedules and commitments, allowing them to engage with the course content and interact with instructors regardless of geographical location or time constraints. It offers the freedom to learn and collaborate at a time that aligns with individual preferences, promoting a more personalized and flexible learning experience.

THE RISE OF BLENDED LEARNING AND VIRTUAL CLASSROOMS

As technology advanced, blended learning models gained traction. Blended learning is an instructional approach that combines online learning activities and face-to-face classroom instruction, creating a hybrid educational experience [11]. This educational model harnesses the benefits of both in-person and online learning environments, offering a flexible and dynamic learning experience. According to a study conducted by Perera, blended learning is highlighted as being more effective compared to traditional or distance learning methods [12]. Blended learning combines the strengths of both approaches, resulting in enhanced outcomes [13]. The utilization of contemporary online tools in blended learning facilitates continuous support for the educational process, enabling access to resources and assistance at any time. In a blended learning setting, students engage in a variety of learning activities, including interactive online modules, virtual discussions, collaborative projects, and in-person classroom sessions. Technology integration enables learners to access and interact with digital resources, multimedia materials, and online assessments, fostering self-paced learning and individualized instruction. Blended learning provides personalized and differentiated instruction opportunities, catering to diverse learning styles and preferences. This approach also boosts student and graduate student engagement and motivation, as learners can actively participate in discussions, collaborate with peers, and receive immediate feedback. It also accelerates the acquisition of professional competencies, and cultivates relevant skills for the 21st century [14]. The combination of face-to-face interactions and online components cultivates a supportive and interactive learning environment that enhances student motivation and academic achievement. Blended learning has gained recognition as an effective educational approach, as it capitalizes on the advantages of both traditional and digital learning methods, leading to improved learning outcomes and student success.

Virtual classrooms, which are also referred to as digital or online classrooms or e-learning environments, emerged and gained significant prominence, enabling students to attend live lectures, participate in discussions, and collaborate with peers remotely. Virtual classrooms refer to the utilization of electronic devices and platforms, such as social media, multimedia, and mobile phones, to educate students. It primarily emphasizes teaching through the utilization of technology. In this type of classrooms,

students use technological devices such as laptops, tablets, Chromebooks, and others. Rather than relying on traditional note-taking during teacher-led instruction, a significant portion of the curriculum is conveyed to students through online resources, presented in an engaging and interactive format [15]. Video conferencing tools like WebEx, Zoom and Microsoft Teams and specialized platforms for distance learning (Moodle, webTutor, Google Classrom, Canvas, iSpring Online, etc.) became indispensable, fostering engagement and interaction [16].

These digital platforms offer an interactive and dynamic space for the facilitation of teaching and learning, utilizing technology to connect educators and students who may be physically separated. Virtual classrooms often integrate multimedia components like live video conferencing, real-time chat functions, shared virtual whiteboards, and collaborative document-sharing tools. They enable both synchronous and asynchronous interactions, allowing real-time discussions, collaborative projects, and access to course materials at the learners' convenience. Additionally, virtual classrooms provide flexibility regarding time and location, allowing learners to engage with educational content and participate in learning activities according to their own schedules and from any location with an internet connection. While virtual classrooms offer various benefits, such as increased accessibility and personalized learning experiences, they also present challenges, such as technological requirements, the necessity for digital literacy skills, and the importance of sustaining student engagement and motivation. Overall, virtual classrooms have proven their potential to enhance education by offering innovative and inclusive learning environments that cater to the diverse needs of students and foster lifelong learning opportunities.

DISTANCE LEARNING IN THE ERA OF THE COVID-19 PANDEMIC

When a General Director of the World Health Organization (WHO) declared the outbreak of COVID-19 on January 30, 2020, countries had to urgently adopt a list of measurements to prevent further spread. As the outbreak intensified, educational institutions worldwide were forced to suspend all operations in response to widespread lockdown measures. As schools and universities temporarily closed their doors to mitigate the spread of the virus, educators swiftly shifted to remote teaching. In this unprecedented disruption in the traditional education system, educational institutions were compelled to improvise and adopt *ad hoc* strategies to ensure educational continuity [17]. E-learning platforms, video conferencing tools, and learning management systems became essential in ensuring educational continuity. The pandemic served as a catalyst for innovation, prompting educational institutions to reimagine traditional teaching methods and invest in digital infrastructure.

The COVID-19 pandemic led to the ultimate suspension of traditional education methods and ensured the accelerated popularity of MOOCs, now accessible to all learners possessing an internet connection. Massive Open Online Courses (MOOCs) gained popularity in the early 2010s, enabling learners worldwide to access high-quality educational content from renowned universities. MOOC represents a method of knowledge sharing and learning that does not have any enrollment or pre-requisite limitations [16]. In 2008, Canadian scholars Bryan Alexandra and Dave Cormier coined the term MOOC to describe a Siemens and Downs online course [18]. Due to advancements in information technology and communication media, MOOCs have recently experienced exponential growth. As they provide unrestricted access to educational resources free of any time or geographical barriers, MOOCs are designed to promote lifelong learning and education equality [19]. In 2023, Class Central has compiled a listing of more than 150,000 MOOC platforms (<https://www.classcentral.com>). With over 10,000 courses and 118 million users, eleven-year-old Coursera is definitely the world's largest MOOC platform. Coursera is followed by the edX platform, with 46 million learners taking up over 4,000 courses, and FutureLearn, with 19 million users. Other significant MOOC platforms include Udacity (USA), Kadenze (USA), Canvas Network (USA), SWAYAM (India), JMOOC (Japan), and XuetangX (China) [20].

Apart from the fact that, in the harsh pandemic time of uncertainty, physical closure, and psychological challenges, MOOC platforms provided an alternative means of accessing educational content and resources remotely; they offered a wide range of courses across various disciplines designed by renowned educational institutions and experts from around the world. MOOC platforms fostered a sense of global community and connection. Through online discussion forums, social learning networks, and virtual collaboration tools, learners could engage with peers from different parts of the world, exchanging ideas and participating in group projects.

CONCLUSION

The history of distance learning has witnessed a remarkable journey of innovation, adaptation, and transformation. From its humble beginnings with correspondence courses which provided individuals with education opportunities regardless of geographical limitations, through advancements in communication technologies, such as audiovisual mediums and the internet, which revolutionized the field, enabling more interactive and dynamic learning experiences, distance learning has played a pivotal role in expanding educational opportunities, reaching underserved populations, and addressing societal challenges such as social injustice and limited access to education.

The emergence of online platforms and Massive Open Online Courses expanded access to education globally, breaking down barriers of time and place. Distance learning evolved to cater to diverse learner needs, offering personalized and flexible learning pathways. Moreover, the integration of multimedia resources, interactive tools, and virtual collaboration encouraged engagement and active participation among learners and a sense of community and social presence.

The unprecedented crisis during the COVID-19 pandemic acted as a catalyst, propelling distance learning to the forefront of education worldwide and highlighting the critical role of distance learning in maintaining educational continuity and shedding light on the importance of technology, digital literacy, and inclusive access to resources for effective distance learning implementation.

However, the pandemic also revealed challenges such as the digital divide, the need for adequate infrastructure and technical support, and the impact on social interactions emphasizing the ongoing need for continuous improvement, innovation, and research in distance learning methodologies and pedagogical approaches.

As we reflect on the evolution path of distance learning, it has showcased resilience, adaptability, and transformative power. Distance learning has become vital in expanding educational access, promoting lifelong learning, and fostering inclusive and flexible learning environments. Looking into the future, it is imperative to further enhance the quality, accessibility, and inclusivity of distance learning while addressing the challenges and leveraging the opportunities brought by technological advancements and changing educational landscapes.

REFERENCES

- [1] Babic, S. (2017). E-learning environment compared to traditional classroom. Research Gate. Conference Paper · January 2011 Source: DBLP. Croatia.
- [2] Zejnelagić S., Fetahović I. & Moretić-Mićić, S. (2022). Kirkpatrick's Model of Evaluation Applied under Covid 19 Conditions. *International Review*, 3-4, 30-37.
- [3] Casey, D. M. (2008). A Journey to legitimacy: The Historical Development of Distance Education Through Technology. *TechTrends: Linking Research and Practice to Improve Learning*, 52 (2), 45 – 51
- [4] Sleator, R. D. (2010). The evolution of eLearning Background, blends and blackboards... *Science Progress*, 93(3). pp. 319-334. doi: 10.3184/003685010X12710124862922.
- [5] Moore M. G. & Kearsley, G. (2011). *Distance Education: A Systems View of Online Learning*. Wadsworth. CENGAGE Learning.
- [6] Matthews, D. (1999). The origins of distance education and its use in the United States. *THE Journal*, 27, 54-59.
- [7] Bozkurt, A. (2019). From Distance Education to Open and Distance Learning: A Holistic Evaluation of History, Definitions, and Theories. In S.Sisman-Ugur, & G. Kurubacak (Eds.), *Handbook of Research on Learning in the Age of Transhumanism*, 252-273. Hershey, PA: IGI Global.
- [8] Pittman, V. V. (1986). *Pioneering Instructional Radio in the US: Five Years of Frustration at the University of Iowa, 1925-1930*. A Paper for the First International Conference on the History of Adult Education, Oxford, UK.

- [9] Pregowska A., Masztalerz K., Garlinska M. & Osial M. (2021). Worldwide Journey through Distance Education—From the Post Office to Virtual, Augmented and Mixed Realities, and Education during the COVID-19 Pandemic. *Educ. Sci.*, 11, 118. <https://doi.org/10.3390/educsci11030118>
- [10] Rizova, T. (2019). Technologies in the System of Electronic and Distance Learning – The New Educational Paradigm for the 21st Century. *Employment, Education and Entrepreneurship*. 222-226
- [11] Hrastinski, S. (2019). What Do We Mean by Blended Learning? *TechTrends*, 63, 564–569. <https://doi.org/10.1007/s11528-019-00375-5>
- [12] Perera, I. (2010). What will users expect from virtual learning methods?—A conceptual model to analyze future learning method enhancements. *US-China Education Review* 7, 76–82.
- [13] Watson, J. (2008). Blending Learning: The Convergence of Online and Face-to-Face Education. Promising Practices in Online Learning. NACOL.
- [14] Callo E. C. & Yazon, A. D. (2020). Exploring the Factors Influencing the Readiness of Faculty and Students on Online Teaching and Learning as an Alternative Delivery Mode for the New Normal. *Universal Journal of Educational Research*, 8(8), 3509 - 3518. DOI: 10.13189/ujer.2020.080826.
- [15] Haleem, A., Javaid, M., Qadri, M. A. & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, 3, 275-285. <https://doi.org/10.1016/j.susoc.2022.05.004>
- [16] Zinovieva, I. S., Artemchuk, V. O., Iatsyshyn, A. V., Romanenko, Y. O., Popov, O. O., Kovach, V. O., Taraduda, D. V. & Iatsyshyn, A. V. (2021) The use of MOOCs as additional tools for teaching NoSQL in blended and distance learning mode. *Journal of Physics: Conference Series* 1946, 012011. doi:10.1088/1742-6596/1946/1/012011.
- [17] Fabriz S., Mendzheritskaya J. & Stehle S. (2021) Impact of Synchronous and Asynchronous Settings of Online Teaching and Learning in Higher Education on Students' Learning Experience During COVID-19. *Front. Psychol.* 12:733554. doi: 10.3389/fpsyg.2021.733554.
- [18] De Waard, I., Abajian, S., Gallagher, M. S., Hogue, R., Keskin, N., Koutropoulos, A. & Rodriguez, O. C. (2011). Using mLearning and MOOCs to understand chaos, emergence, and complexity in education. *The International Review of Research in Open and Distributed Learning*, 12 (7), 94-115.
- [19] Hamid, S. N. M., Lee, T. T., Taha, H., Rahim, N. A., & Sharif, A. M. (2021). E-content module for Chemistry Massive Open Online Course (MOOC): Development and students' perceptions. *JOTSE: Journal of Technology and Science Education*, 11(1), 67-92. <https://doi.org/10.3926/jotse.1074>.
- [20] Shah, D., Pickard L. & Ma R. (2023). Massive List of MOOC Platforms Around the World in 2023. Available at <https://www.classcentral.com/report/mooc-platforms/>

Article history:

Received 25 June 2023

Accepted 20 February 2024