A Concise History and Future of Distance Education in Europe

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ABSTRACT

Distance education, defined as pedagogical delivery involving teacher-learner geographic separation, has become a widespread educational model. Even modern face-to-face course delivery includes some asynchronous elements, which illustrates the extent of the influence of distance education on education in general. Distance education, which has evolved from correspondence courses to digitally mediated, interactive learning environments that span continents and connect us globally, is inextricably intertwined with today's educational systems. The pace is accelerating by rapidly developing artificial intelligence (AI) capabilities. How has the centrality of distance education happened? This paper addresses that question by examining the history and future of distance education in Europe. Subsequent papers can examine this question in other locations to form a global understanding.

Keywords*:* Distance education, history of education, European education

The History and Future of Distance Education in Europe

Distance education has evolved from early correspondence courses to digitally mediated, interactive learning environments that connect us globally and contribute to globalization, the process whereby "cultures influence each other and become more alike through trade, immigration, and the exchange of information and ideas" (Arnett, 2002, 774). The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2015) added that "education must be placed at the heart of the global development agenda" (p. 3). Furthermore, education systems must maintain adaptability to remain relevant (Wang et al., 2011). Distance education has these features.

In Europe, the development of distance education has reflected broad social, economic, and technological changes, including industrialization, mass literacy, the expansion of higher education, and the rise of the internet and mobile technologies. The term *distance education* now encompasses a continuum of practices from traditional print-based correspondence to fully online learning, blended and hybrid formats, open educational resources, and massive open online courses (MOOCS). As distance education has gained momentum, it has challenged long-standing assumptions about where, when, and how learning can occur and who can participate in higher education and training. How did that happen? This paper addresses that question by examining the history and probable future of distance education in Europe, with the caveat that an Artificial Intelligence (AI) influenced future is indeterminate. Subsequent papers can examine this question in other locations to form a more nuanced current global understanding.

This paper provides definitions and conceptual frameworks used to analyze the development of distance education in Europe. Next it traces the historical evolution of distance education in Europe, from early correspondence and broadcast models to open universities and digital networks. Then it analyzes current trends and challenges, including quality assurance, digital equity, commercialization, and changing pedagogies. Finally, it explores future directions and implications for policy, practice, and research.

Terminology and Conceptualization

Terminology has changed over time, reflecting changes in technology and theoretical perspectives. Early twentieth century scholars and practitioners in Europe typically used words like *correspondence study* or *home*

study to indicate instruction delivered by mail. As newer technologies became popular and widespread, *television teaching, educational broadcasting,* and *telecourses* emerged as options (Garrison, 1985). In Europe, the German term *Fernunterricht* (distance instruction) was widely used, while the broader English-language term *distance education* gained prominence in the 1970s and 1980s (Keegan, 1996). Although the word "distance" traditionally connotes geographic separation, this word can also convey "time, economic, social, educational, epistemological, and communication distances" (Heydenrych & Prinsloo, 2010, p. 6). Since face-to-face delivery methods include distance education aspects, the line blurs between conventional and distance education.

Keegan (1980) defined distance education as a form of education characterized by the separation of teacher and learner in time and/or space, the use of technical media to unite teacher and learner and carry the content of the course, the provision of two-way communication for student support and dialogue, and the possibility of occasional face-to-face meetings. This definition highlights the structure of distant education, principally the separation of teacher and learner and the role of communication technology in bridging that separation.

This structure became more tenable with the proliferation of computers and access to the internet, and terms like *online learning* and *e-learning* were coined (Moore et al., 2011). Although online learning is a subset of distance education, many institutions use distance education and online education interchangeably. In Europe, terms such as *open and distance learning (ODL), flexible learning, virtual learning,* and *technology-enhanced learning* are common (European Commission, 2011). The broader concept of *open education*—including open access policies, open educational resources (OER), and open licensing—further complicates the terminology.

Although not a completely objective definition, distance education can be defined as any structured learning experience where teacher and learner are separated in space and often in time, and where interaction is mediated by some form of technology, ranging from print and post to digital networks and artificial intelligence. This includes fully distance as well as hybrid or blended models, as long as distance-mediated interaction is central to the design and delivery of the course or program. Although what is considered "central" involves subjectivity, this remains a helpful basic definition.

In addition to the development of terminology, the history of distance education can be conceptualized in terms of the industrialization of teaching, the theory of transactional distance, and the community of inquiry framework. Each adds to an explanation of how distance education developed.

Peters (1993) applied sociological theories of industrialization and posited that distance education represents an analogous industrialization of teaching and learning. He compared features, such as the division of labor in course production, the use of media and technology to achieve economies of scale, the standardization of content and procedures, and the separation of instructional conception and execution. This view was especially influential in Europe, where large-scale open universities and state-sponsored distance education institutions adopted industrial production models, including specialized teams for course design, media production, student support, and evaluation.

Moore's (1993) theory of transactional distance shifted attention from industrial organization to the psychological and communications space between instructor and learner. This framework considers transactional distance as an interaction among three components, namely, course structure (degree of rigidity to flexibility), dialogue (bidirectional communication between learner and teacher), and learner autonomy. Courses with rigid structure and limited dialogue have higher transactional distance and require greater learner autonomy. Researchers have used this theory extensively Europe to investigate how different technologies and pedagogical designs can expand or reduce the sense of distance learners experience. In Holmberg's (1986) words, "distance study…is an exercise in independence" (p. 29).

Garrison et al.'s (2000) community of inquiry (Col) framework examines the necessary conditions needed to create deep and meaningful learning experiences in online and blended/hybrid environments. The Col framework states that effective educational experiences are created through the interaction of cognitive presence, social presence, and teaching presence. This approach has been influential in Europe, informing course design, instructor training, and research on learner engagement and satisfaction (Garrison, 2017). Learner engagement

persists as a major focus due to its empirically supported importance in fostering positive educational outcomes (Wong et al, 2024). Mikić et al. (2026) provides a recent research example in Norway.

Other frameworks emphasize openness, networked learning, and connectivism (Siemens, 2005), particularly when focusing on MOOCs and social media-enabled learning. Across these perspectives, the history and future of distance education are conceptualized as shaped by the continuous negotiation among technological capabilities, educational ideals, institutional and economic constraints, and learner needs and agency.

History of Distance Education in Europe

19th-Century Origins: Correspondence and Self-Instruction

Distance education has deep roots in Europe. The earliest known example is an advertisement in Sweden in 1833 for a shorthand course by correspondence using the mail (Holmberg, 2005). This model appeared across Europe throughout the 19th century, in line with expanding postal services, increasing literacy rates, and industrialization created new markets for vocational training and general education. By the late 19th and early 20th centuries, large correspondence schools were established, such as the International Correspondence Schools (ICS), operated in Europe, and offered programs in technical and business subjects (Schlosser & Simonson, 2010).

Germany is another example. Correspondence courses provided more training for industrial workers, civil servants, and teachers. Some of these programs were affiliated with universities or technical institutes, while others were privately owned (Peters, 1993). In France, the Centre National d'Enseignement á Distance (CNED), established in 1939 as an antidote to disruptions from World War II, evolved from earlier correspondence ventures to support military and civilian needs, secondary education, and vocational training. He name changed in 1953 to the National Centre for Radio and Television Correspondence Education (CNEPCRT), in 1959 it merged with departments of the National Pedagogical Institute to form the National Centre for Distance Education (NCDE), in 1979 became the National Centre for Correspondence Education (CNEC), and in 1986 became the National Centre for Distance Learning (CNED), which in 1999 became "the 1st distance learning operator in Europe and the French-speaking world for its 60th anniversary" (https://www.cned.fr./le-cned-en-bref/l-histoire-du-cned/le-cned-de-1939-a-1999). These name changes illustrate the evolution of early distance education and struggles for a clear identity in a changing landscape. CNED continues to be a powerful force in distance education.

Correspondence education during this time basically used paper materials by one student with minimal instructor interaction. Quality varied widely and some reputable institutions were criticized as "diploma mills." On the positive side, this model offered educational opportunities to people who were excluded from traditional institutions, due to geography, employment, family responsibilities, or social class. Those are ongoing issues.

Educational Broadcasting and Multi-Media Distance Education

The early to mid-20th century saw the introduction of radio and then television as educational media. European public broadcasters in many countries (e.g., United Kingdom, France, Germany, Nordic States) tried radio lectures, language programs, and school broadcasts, which were mainly supplemental resources. Importantly, they were foundational for later integration of broadcast media into structured courses (Bates, 2015).

In the United Kingdom, the British Broadcasting Corporation (BBC) collaborated with educational institutions to develop radio programs geared toward adult learners (Whatley, 2004). Television broadened offerings in the post-World War II era. Other countries in Scandinavia and Germany advanced similar initiatives (Peters, 1993). This activity foreshadowed the "multi-media" model of distance education that were later institutionalized in open universities.

The Open University Model and European Innovations

The creation of the United Kingdom's Open University (OU), conceived by the government as a "university of the air" to democratize higher education, in 1969 marked a turning point in the global history of distance education. OU combines correspondence materials, broadcast television and radio programs, audio and video

cassettes, and regional study centers offering tutorials and summer schools (Perry, 1976). It's open admission policy expanded opportunities for working adults, women, and others historically excluded from higher education.

The OU model involved teams of academics, instructional designers, writers, and media producers, and exemplified the industrial production of distance education analyzed by Peters (1993). Courses were designed centrally and delivered in standardized formats to thousands of students. Additionally, this model integrated significant supports, such as regional tutors, study groups, and feedback mechanisms, which helped counteract isolation and promoted what would now be called social and teaching presence and engagement.

The OU approach was successful across Europe. In the 1970s and 1980s, open universities and distance education institutions were established in Germany, FernUniversität in Hagen in 1974; the Netherlands, Open Universiteit in 1984; Spain, Universidad Nacional de Educación a Distancia, UNED, in 1972; Portugal, Universidade Aberta in 1988; and later in some Central and Eastern European countries (Zawacki-Richter & Qayyum, 2019). These institutions adapted the OU model and had varying degrees of openness in admissions.

European open universities were instrumental in broadening participation in higher education, especially for adults, part-time students, and people in remote areas. They were often publicly funded and included in national higher education systems. Concurrently, dual-mode universities (traditional offering distance opportunities) began expanding their distance offerings, particularly in teacher education and continuing professional development.

The open and distance learning movement in Europe was supported by the European Union (EU) from the 1980s onward, prominently Developing Learning through Technological Advance (DELTA), SOCRATES, and later e-Learning and Erasmus+ (European Commission, 2011). These funded cross-border collaborations, experimentation with emerging technologies, and the development of shared digital resources.

Digitization and the Shift to Online Learning in Europe

From the 1990s on, the increasing adoption of personal computers and the internet transformed the technological infrastructure of distance education. Providers of education began digitizing course materials, creating online learning platforms, and experimenting with asynchronous discussion forums and email-based support. Virtual learning environments (VLE), now more commonly called Learning Management Systems (LMS), such as Blackboard, WebCT, and later Moodle as well as others, were introduced to organize content, for communication, and to conduct assessment.

European policy initiatives promoted digitalization in education more broadly. The European Commission's 2001 *eLearning Action Plan* and subsequent strategies encouraged member states and institutions to integrate ICT (information and technology) into education and training, emphasizing lifelong learning and digital skills (European Commission, 2011). In 2010, Lithuania established the Lithuanian remote and e-mail learning Association (LieDM Association) with 50 member Lithuanian educational institutions to encourage adoption of distance education methods and sharing practices among members (Gluoksnyet & White, 2022). In addition, this era saw the growth of the Bologna Process (from 1999), with the goal of creating a European Higher Education Area with comparable degrees, quality assurance mechanisms, and support for student mobility. While primarily focused on traditional higher education, Bologna reforms indirectly influenced distance education by promoting recognition of prior learning, flexible pathways, and quality frameworks that could include online and other types of distance learning (European Commission, n.d.).

By the early 2000s, most European open universities had largely transitioned from print and broadcast-centric models to web-based delivery, though print materials often remained important, especially for certain subjects and learner groups (Zawacki-Richter & Qayyum, 2019). Dual-mode universities expanded blended and online courses. The pace and scope of online learning adoption varied widely across European nations. Nordic countries and the United Kingdom were early adopters, while some Southern and Eastern European countries were slower, due to infrastructure, funding, and regulatory constraints (Kiryakova & Angelova, 2017). Quality assurance agencies started developing guidelines.

The advent of MOOCS in the early 2010s represented another major milestone. European platforms such as FutureLearn led by the OU UK, France Université Numérique, and Spain's Miríadax emerged alongside global powerhouses like Coursera and edX. European MOOCs often emphasized multilingual offerings, partnerships among universities, and public or semi-public funding models. They were used for outreach, internationalization, and as laboratories for pedagogical innovation. They were controversial due to concerns about accreditation, sustainability, and the relationship between free open courses and formal degree programs. For more information, refer to the European MOOC Consortium (EMC, https://emc.eadtu.eu).

The COVID-19 pandemic, beginning in 2020, forced a rapid and massive shift in remote and online learning across Europe. While this emergency remote teaching was not synonymous with well-designed online learning, it accelerated digitization, increased institutional and faculty awareness of online pedagogies, and highlighted issues of digital equity, support, and assessment (Daniel, 2020). It also renewed interest in hybrid and blended models that combine online and face-to-face elements.

Current Trends and Challenges

Blended and Hybrid Learning as the New Norm

One of the most significant contemporary trends is the blurring of boundaries between distance and campus-based education. Blended and hybrid models, which combine online and face-to-face components, are increasingly common in Europe. Instead of treating distance education as a separate system, many institutions now integrate online elements into mainstream curricula (Means et al., 2014).

Blended learning can enhance flexibility, allowing students to balance learning with work and family responsibilities, and can support active and collaborative pedagogies (Graham, 2013). In Europe, initiatives to modernize higher education and improve teaching quality have promoted blended approaches, sometimes under the banner of "flexible learning" or "digital transformation" (European Commission, 2011).

However, effective blended learning requires careful design, adequate infrastructure, and professional development for faculty. Challenges include managing student workload, ensuring coherence between online and face-to-face components, and providing equitable access to technology and support services.

Quality, Assessment, and Student Support

Questions about quality assurance, learning outcomes, and student support have become central. Research suggests that, under certain circumstances, online and blended learning can produce student outcomes comparable to or better than traditional face-to-face instruction (Means et al., 2014). Key factors include course design quality, instructor presence, timely feedback, and support services.

Quality frameworks have been developed in Europe. Organizations such as the European Association of Distance Teaching Universities (EADTU) have promulgated quality models for online, open, and flexible education, emphasizing institutional strategies, curriculum design, student support, and technology (European Commission, 2016). National quality assurance agencies have integrated distance education into their evaluation criteria, though implementation varies.

Assessment in online and distance education formats poses challenges related to academic integrity and the validity of online proctoring tools. Proctoring technologies, including remote webcam monitoring and biometric systems, have raised concerns about privacy, accessibility, and bias (Eaton, 2020). Alternative strategies, such as open-book exams, authentic projects, and continuous assessment, are being explored but require shifts in faculty practice and institutional policies.

Commercialization, Platformization, and Data Ethics

The growth of distance and online education has attracted commercial interest in Europe. For-profit educational technology companies provide learning platforms (LMS, VLE), proctoring services, content development, and marketing. Online program management (OPM) companies partner with universities to design, market, and

sometimes deliver online programs in exchange for a share of tuition revenue. MOOC platforms collaborate with universities to offer micro-credentials and online degrees, often on revenue-sharing models.

These developments have sparked debates about the commercialization of higher education, the outsourcing of academic functions, and the control of educational data. In Europe, stricter data protection regulations, such as the General Data Protection Regulation (GDPR), have shaped how institutions and ed-tech firms handle student data, though concerns persist regarding surveillance, profiling, and algorithmic decision-making.

Learning analytics and AI-driven systems offer potential benefits, including early identification of at-risk students, personalized feedback, and adaptive learning paths (Siemens & Long, 2011). However, ethical questions persist about consent, bias, autonomy, and the purposes of data collection. Institutions continue to grapple with how to develop governance frameworks, guidelines, and digital literacy among support staff, administrators, faculty, and students to navigate these issues responsibly.

Professional Development and Academic Culture

The increasing presence of distance education has tremendous effects on academic roles, workload, and professional identity. As online technologies evolve, faculty must update their competencies to navigate these changing digital environments. Concomitantly, instructional designers, educational technologists, and learning support professionals play increasingly important roles. In response, institutions are providing more professional development related to online and blended learning. However, academic culture and incentive structures do not always recognize or reward excellence in online teaching to the same extent as research outputs, creating tensions and inconsistencies. European systems are generally less reliant on adjuncts and contingent faculty in online programs compared to North American practices, but they still face pressures related to contractualization and workloads in open and distance learning institutions.

Future Directions of Distance Education in Europe

Flexible Pathways, Micro-Credentials, and Lifelong Learning

Demographic shifts, labor market changes, and technological disruption are driving demand for more flexible and modular forms of learning. Lifelong learning is a longstanding policy priority as workers look for reskilling and upskilling opportunities in response to automation and changing industries (OECD, 2019).

Distance and online education are well positioned to support these trends. Micro-credentials, digital badges, and short online courses focus on acquiring specific skills and knowledge without committing to full degrees. European initiatives, such as the European Commission's work on a European approach to micro-credentials, aim to promote common definitions, quality standards, and recognition mechanisms across countries (European Commission, 2020). Recognition of prior learning, competency-based assessment, and portable digital credentials will be crucial to making these pathways meaningful and equitable.

Hybrid and "Postdigital" Universities

The "postdigital" university idea derives from the assertion that digital technologies are no longer separate or novel but are deeply embedded in all aspects of institutional life (Jandrić et al., 2018). Therefore, the future of distance education involves reimagining the relationship between physical and virtual spaces, synchronous and asynchronous interaction, and formal and informal learning.

European universities are likely to continue developing hybrid campus models combining on-campus experiences with online courses, remote internships, virtual laboratories, and international collaborations. Physical campuses could increasingly focus on high-impact, experiential, and social aspects of learning, while routine content delivery and knowledge transmission are handled online. Flexible options may allow students to shift between modes in response to life circumstances, health considerations, or relocation.

This concept of hybridization has implications for campus planning, student services, and community engagement. For example, libraries must support digital collections, open-access publishing, and online

information literacy, while serving as physical learning commons. Student support services, such as advising, counseling, and careers services, must operate seamlessly across online and on campus locations.

Emerging Technologies: AI, XR, and Beyond

Artificial intelligence (AI), extended reality (XR) technologies including virtual reality and augmented reality, and emerging network infrastructures are poised to shape the future of distance education. AI-powered tools already support automated tutoring, language translation, content recommendation, and grading certain types of assignments. Generative AI tools assist students with drafting, coding, and problem-solving, raising questions about academic integrity but also opportunities for scaffolding and feedback. XR technologies are improving for immersive simulations, virtual laboratories and field trips, 3D visualizations, and collaborative virtual environments.

Challenges to adoption in distance education include cost, access disparities, technical complexity, and need for robust pedagogical foundations. Risks include exacerbating divides between well-resourced institutions and those with fewer resources and between students with differing access to devices and connectivity. Digital divides persist between and within countries, encompassing not only access to devices and broadband but also digital skills, language barriers, and socio-cultural factors.

Internationalization and Cross-Border Education

The future may see more collaborative international programs, joint degrees, and virtual exchange initiatives that connect students globally. Virtual exchange and collaborative online international learning (COIL) projects allow students to engage in cross-cultural learning without travel, potentially enhancing inclusion and sustainability (O'Dowd, 2018). The downside involves questions about regulation, quality assurance, intellectual property, and cultural hegemony. How do European institutions address differing regulatory environments, data protection regimes, and expectations about language, pedagogy, and assessment?

CONCLUSION

European distance education has been significantly influenced by EU-level initiatives, Bologna Process harmonization, and national policies emphasizing social inclusion, lifelong learning, and digital transformation (European Commission, 2011). Quality assurance agencies in Europe have increasingly incorporated guidelines for online and distance learning into their standards, often focusing on institutional capacity, student support, and learning outcomes rather than prescribing specific technologies.

Historically, European distance education began with individualized, highly structured correspondence models. Over time, pedagogical approaches have moved toward greater interaction, collaboration, and learner-centered design, facilitated by digital technologies. The community of inquiry framework, constructivist pedagogy, and universal design for learning (UDL) principles have influenced course design and faculty development across regions (Garrison, 2017). European open universities reflecting Peters (1993) industrial model, have tended to employ specialized teams for course development, with academic subject experts collaborating with instructional designers, media specialists, and editors. European trajectories have been marked by the prominence of publicly funded open universities and EU-coordinated initiatives.

A primary goal continues to be widening educational participation. Policies promoting lifelong learning and recognition of prior learning have supported these goals (European Commission, 2011). However, Europe continues to face equity challenges related to digital divides, socioeconomic disparities, and varying levels of digital literacy. As distance education becomes more mainstream, regulatory frameworks and funding models must ensure that online learners receive comparable support and protections to campus-based students. This includes considerations of tuition levels, financial aid eligibility, credit transfer, and support for students with disabilities. Emerging technologies such as AI and XR and demands for micro-credentials and flexible pathways will redefine distance education as it becomes more central and less peripheral and solidifies its stature in European education. A critical refocus from group education to individualized requires research into the personal internal dynamics of learning, a shift from teacher-learner to a coordinated group process involving many

disparate professionals and students, as well as institutional reform (Moore, 2022) and careful monitoring of AI influences. This paper focused on Europe. Future work can extend our understanding of this increasingly important educational approach in many other parts of the world, with the goal of learning from each other and sharing our experience and knowledge under the aspirational guise of pedagogical excellence.

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