KEY DETERMINANTS OF DISTANCE LEARNING IN HIGHER EDUCATION: A COMPARATIVE PERSPECTIVE OF GERMANY AND UKRAINE

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Distance learning in higher education over the past two decades has evolved from an alternative form of knowledge acquisition into a fundamental component of the modern educational system, ensuring the continuity of the learning process in the face of rapid socio-economic changes. The swift development of information and communication technologies, the proliferation of digital educational platforms, globalization processes, and the need for flexible learning have opened up new prospects for students and instructors, while simultaneously creating significant challenges for the organization and management of education. The COVID-19 pandemic demonstrated the importance of distance learning as an integral element of contemporary higher education, forcing universities to quickly adapt their educational programs to an online format, implement distance courses, webinars, interactive platforms, systems for remote assessment and student support. This experience showed that distance learning is not merely a technical process but rather a complex system encompassing technological infrastructure, pedagogical methods, digital competencies of participants, motivational factors, and organizational support, which collectively determine the effectiveness of the educational process and the level of students' academic achievements [1-8]. In this context, research into the key determinants of distance learning becomes particularly relevant, as it allows for an assessment of the current state of these systems, identification of their weaknesses and strengths, and the formulation of practical recommendations for improving the quality of online education across different national systems.

The aim of this research is to identify the main factors influencing the effectiveness of distance learning in higher education, using Germany and Ukraine as examples, and to conduct a comparative analysis that makes it possible to understand the role of national characteristics, cultural context, and educational policy in shaping effective distance learning systems.

One of the primary factors for successful distance learning is technological infrastructure and access to modern online resources. This entails the availability of modern computers, laptops, tablets, stable high-speed internet connections, server capacity for online platforms, as well as access to electronic libraries, databases, and digital educational resources. In Germany, universities such as Humboldt University of Berlin, the University of Tübingen, and Ludwig Maximilian University of Munich (LMU) provide students and instructors with comprehensive technical support, which includes modern integrated platforms like Moodle, ILIAS, Blackboard, video conferencing services such as Zoom and Microsoft Teams, and proprietary university resources for organizing learning. The use of these platforms allows for conducting interactive lectures and seminars, organizing practical classes, carrying out remote knowledge assessment, and providing instant feedback. Furthermore, German universities actively create and maintain internal resources, such as video lectures, interactive tests, e-textbooks, case studies, and specialized platforms for student teamwork, fostering a high degree of independent work and stimulating active engagement with learning materials. Access to international scientific databases, such as SpringerLink, JSTOR, Scopus, and Web of Science, provides students and instructors with the ability to find current materials for research and study, supporting academic freedom and self-directed learning.

In Ukraine, distance learning is actively developing, yet it faces certain challenges that limit its full potential. The main problems include unequal access to high-speed internet, especially in rural areas and small towns; a limited number of modern computers; the absence of unified integrated platforms between universities; and a shortage of digital resources in some institutions. Despite this, leading Ukrainian universities, such as Taras Shevchenko National University of Kyiv, Lviv Polytechnic National University, V. N. Karazin Kharkiv National University, and the National University of Ostroh Academy, are actively implementing Moodle, Google Classroom, Microsoft Teams, and other digital tools. They are creating their own electronic libraries, interactive learning materials, virtual laboratories, and systems for remote assessment, which helps maintain the educational process even under difficult conditions and forms a basis for the gradual digitalization of Ukrainian education. It is important to note that technological infrastructure determines not only access to knowledge but also the level of student motivation, as convenient, stable, and functional platforms simplify the organization of self-study, allow for easy progress monitoring, and enable timely feedback from instructors.

The second key factor is the digital competencies of educational process participants. Instructors must possess skills in creating interactive learning materials, organizing online lectures and seminars, effectively assessing student knowledge, maintaining educational documentation, and providing constructive feedback. Students, in turn, must be able to work with digital platforms, search for and analyze information, organize their own learning, complete assignments in a distance environment, and effectively collaborate with peers in group projects. In Germany, digital competencies are a strategic focus for university development. Instructors undergo systematic training, seminars, and professional courses dedicated to designing

distance courses, interactive assignments, assessment, and methods for online communication with students. Students receive basic digital literacy training from their first year, ensuring readiness for active participation in distance courses, independent information search, and the development of analytical skills. In Ukraine, the level of digital competencies varies significantly depending on the age and experience of instructors and students. Younger instructors and students who grew up in a digital environment mostly possess the necessary skills, whereas older instructors and administrative staff require special training and regular professional development. Although Ukrainian universities conduct webinars, training sessions, and courses on digital literacy, this process is not yet systematic and often depends on individual initiatives.

An equally important factor is the motivation of learning process participants and the organizational support provided by universities. Student motivation is fostered through clearly defined learning objectives, interactive tasks, regular and timely feedback, the ability to regulate the pace of learning, and participation in group projects. Instructors need organizational support, which includes access to methodological materials, technical assistance, mentoring, and recognition of their work by the administration. In Germany, universities create specialized support centers for students and instructors, provide methodological guidelines, and facilitate the exchange of experience through professional communities and digital platforms, which stimulates the development of distance learning and enhances its effectiveness. In Ukraine, although the situation is gradually improving, organizational support is not yet sufficiently systematic, with a limited number of consultants and insufficient implementation of motivational mechanisms for instructors and students. Insufficient support can lead to low productivity and reduced engagement in the distance learning process even when modern technologies are available, highlighting the critical role of the organizational aspect in ensuring the effectiveness of online education.

A comparative analysis of distance learning in Germany and Ukraine allows for the identification of characteristic strengths and weaknesses of the systems. Germany is characterized by a high level of digitalization, systematic preparation of instructors and students, developed organizational support, and a wide range of platforms and resources. Weaknesses include the fragmentation of platforms between universities, high expectations regarding student independence (which can complicate adaptation for first-year students), and the significant workload of instructors, affecting the quality of interactive learning. Ukraine demonstrates the flexibility of educational platforms, the ability to quickly adapt to crisis situations, and the active implementation of digital tools even in regions with limited access to resources. The main problems include unequal access to the internet and digital resources, insufficient training for instructors, a lack of systematic organizational support, and a limited number of consultants for students. National characteristics, cultural context, and educational policy determine not only the technical capabilities of the systems but also pedagogical practices, students' approaches to learning, as well as teaching styles and methods of interaction between instructors and students.

Therefore, the effectiveness of distance learning in higher education is determined by three key determinants: technological infrastructure, digital competencies, and motivation coupled with organizational support. The comparative analysis of Germany and Ukraine demonstrates characteristic features of both systems: Germany has a high level of digitalization and organizational support, while Ukraine shows flexibility and the ability to quickly adapt to crisis situations, yet requires improvement in infrastructure and systematic enhancement of instructors' digital competencies. To improve the effectiveness of distance learning in higher education institutions, it is necessary to systematically expand technological infrastructure, ensure regular enhancement of the digital competencies of educational process participants, implement motivational mechanisms for instructors and students, and strengthen organizational support. Only a comprehensive approach that considers technological, pedagogical, and organizational aspects can ensure the success of distance learning and the formation of high-quality online education adapted to the demands of the modern world and global digitalization. A comparative analysis of international experience allows for an assessment of the strengths and weaknesses of systems and the formulation of practical recommendations for improving distance learning, which will contribute to the development of modern higher education and the enhancement of students' academic success. An additional aspect is the significance of distance learning for developing skills in independent work, critical thinking, effective communication, and digital literacy, which are essential competencies for modern professionals in any field.

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