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THE IMPACT OF DIGITAL TRANSFORMATION ON THE FUNCTIONING OF UNIVERSITIES

Digitalization has a profound and multifaceted impact on the development and functioning of higher education institutions, transforming both organizational and educational processes.

Digitalization is transforming management processes, offering new tools and approaches that significantly increase business efficiency. Digital technologies facilitate the transition from traditional management models focused on control to more flexible and adaptive systems that emphasize coordination [1, с. 140].

In particular, the digital transformation of universities is changing the educational landscape in the world and in Ukraine. The impact of digital transformation on the functioning of universities should be considered in the following key aspects:

The educational process, which includes the following components: *1) Distance learning and hybrid models:* the introduction of platforms such as Moodle, Google Classroom, Zoom allowed us to ensure the continuity of education even during the pandemic, as well as during the full-scale invasion of the Russian Federation *2) Interactivity:* Digital tools allow for interactive lectures, tests, simulations, virtual labs. *3) Individualization of learning:* Data analytics allows for adapting material to the needs of each student.

II. Administrative management. Electronic journals, student grade books, document flow: Automation of routine work speeds up processes and reduces the likelihood of errors. Admission and registration of students: Through electronic offices and management systems (for example, “EDEBO” in Ukraine), higher education institutions (HEIs) have accurate data on applicants and students.

III. Scientific activity. Digital libraries, repositories, access to global databases: This significantly expands scientific horizons, especially for young scientists. Data analysis and artificial intelligence tools: Help in interdisciplinary research and the creation of modern scientific products [2, с. 12351–12382].

IV. International integration. Online courses and academic mobility: Universities can join international educational platforms such as Coursera, edX, or Erasmus+, which increases their competitiveness.

V. Cultural and social change. Shaping a new digital culture of the university environment: This includes the ethics of digital behavior, media literacy, as well as new challenges - cybersecurity, digital burnout, etc.

According to research conducted in 2023, more than 70% of Ukrainian higher education institutions are actively using digital tools, and some are switching to the "smart campus" model - when universities function as an ecosystem with an intelligent environment.

It should be noted that the digital transformation of higher education is not just the implementation of technology, but a profound change in the way universities operate. It affects almost all aspects of their activities.

The main impacts of digital transformation on universities are:

1. Changing forms of learning. Distance and hybrid education have become the norm. Teachers and students can interact through educational platforms: Zoom, Moodle, Google Meet, etc. Online courses, webinars, self-education platforms are emerging, making knowledge more accessible to more people [3, с. 64-79].

2. Personalization of learning. Thanks to educational data analytics, universities can adapt an individual approach to each higher education applicant: what is the complexity of their studies, what interests them, what skills require specific analysis and development.

3. Automation of administrative processes. Electronic submission of documents, online cabinets, digital journals and assessments - all this reduces the burden on staff and increases accuracy. Transparency and accessibility of information: applicants for first and second level higher education can see their results, schedules, financial information online.

4. Improving scientific work. Digital tools provide access to global scientific databases, allow for collaborative research online. The use of big data analysis tools and machine learning in science expands the horizons of research.

5. Internationalization. Higher education applicants can study in a blended format with teachers abroad, take courses at world universities without physical presence. Universities are more actively participating in programs such as Erasmus+ and Horizon Europe, joining forces with foreign partners.

6. Changing the role of the scientific and pedagogical worker (SPE of HEIs). A teacher at a higher education institution is transforming from a "source of knowledge" into a moderator of the educational process, a mentor who helps to critically perceive information and work with it.

7. Cultural transformation. Digital competence is being formed as part of the general academic culture. New challenges are emerging - ethics in the digital environment, cybersecurity, digital health.

It is worth noting that digital transformation makes universities more flexible, accessible, and modern, but also requires new skills, infrastructure, and a rethinking of the role of higher education.

In particular, during the war, Ukrainian universities demonstrated impressive resilience, flexibility, and digital adaptability to ensure the continuity of higher education despite all challenges. Almost all HEIs switched to distance or blended learning using a variety of online technologies and platforms. This allows students from different parts of Ukraine and abroad to study, even if the campus is damaged or occupied. There is also flexibility in organizing the educational process, namely: individual schedules are created for students who serve in the Armed

Forces of Ukraine or are internally displaced persons; the possibility of postponing exams, recording lectures for viewing at a convenient time.

Universities are actively implementing electronic classrooms, digital journals, and chatbots for student consultations by teachers. The role of "cloud" technologies is growing: universities, academic staff of higher education institutions, and students can store and exchange materials regardless of physical presence.

Especially in today's conditions, attention is focused on psychological support and digital health of both scientific and pedagogical workers of higher education institutions and applicants. Online psychological support centers are being created. Webinars are being held on media literacy, cybersecurity, and stress management in the context of the Russian-Ukrainian war.

There is also support for students abroad. Universities cooperate with foreign partners so that higher education applicants can: study under exchange programs - the International Academic Mobility Program; temporarily take a course abroad with subsequent transfer of results to Ukraine.

In particular, attention is paid to digital security. In connection with cyberattacks from Russia, universities are implementing cyber defense systems, backup of documentation, VPN. Training is provided on personal data protection, avoiding fakes, and working with information.

Volunteer and defense activities are ongoing. Universities are creating virtual volunteer platforms through which students and faculty can: spread the truth about the war, help displaced people online, work on IT projects for the army (shelter maps, notification systems).

Digitalization is therefore a powerful catalyst for reforms in higher education, contributing to its quality, efficiency and inclusiveness. At the same time, it poses new challenges for higher education institutions related to ensuring digital equality, data protection and supporting digital literacy. The digital adaptation of universities during wartime is not just a question of technology, but also of humanity, cooperation, and trust. Digital adaptation is the ability to preserve and transfer knowledge even in the most difficult times.

Despite the daily difficult conditions of resisting Russian aggression, the digitalization of higher education in Ukraine is actively developing, and a significant number of universities are implementing innovative digital solutions to improve the educational process.

References

1. Shtets T.F., Kyrylko N.M. The impact of digital technologies on management processes// 20th International Scientific and Practical Conference Kyiv, October 25, 2024. – NAU, Kyiv, 137-140 p. URL: https: // meet.google.com/saa-wcpy-sds

2. Tristan Ovington Digital transformation initiatives in higher education institutions. Education and Information Technologies The Official Journal of the IFIP Technical Committee on Education. Volume 28, pages 12351–12382, (2023).

3. Buynytska O., Varchenko-Trotsenko L., Hrytselyak B. Digitalization of higher education institutions. Educational Discourse, 2020, No. 1 (28), pp. 64-79.

4. Tsyfrova adzhenda Ukrainy – 2020 [Digital agenda of Ukraine – 2020] (2016). (“Tsyfrovyj poriadok dennyj”–2020). Kontseptual'ni zasady (versiia 1.0). Pershocherhovi sfery, initsiatyvy, proekty “tsyfrovizatsii” Ukrainy do 2020 roku. URL: https://ucci.org.ua/uploads/files/58e78ee3c3922.pdf

5. O.S. Dushchenko Current state of digital transformation of education.Scientific journal Physical and mathematical education. issue 2(28), 2021 pp. 40-43.