# 2025 International Forum on Fashion & Technology Convergence (FTC2025)

## 국제 패션 & 기술 융합 포럼

| 일시 | 2025년 1월 15(수) ~ 1월 16일(목)

| 장소 | **국립목포대학교 70주년 기념관**

| 주관 |

한국패션기술학회(KJFT), 국립목포대학교 전략경영연구소

| 공동주최 |

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국립목포대학교 전략경영연구소

17:30-18:00 단체사진 및 휴식
18:00-19:00 석식(초청가수 감성지대 공연)

## 2025년 1월 15일(수)
## International Forum on Fashion & Technology Convergence (FTC2025)
## 2일차 행사일정
**[장소: 국립목포대학교 70주년 기념관]**

07:00-08:00 기상 및 휴식
08:00-09:30 조식(목포대학교 학생식당)

**제2부 패션, 여성, 지속가능성 분야**

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◎ 제1세션: 교육, 여성, 환경 분야: 09:30-12:00
좌장: Anel A. KIREYEVA(PhD in Economics, Associate Professor/ University of International Business named after K.Sagadiyev, Almaty, Kazakhstan)

**논문명1-14: Problems and prospects of modernization of the quality of the higher education system in Kazakhstan**

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**논문명1-15: Modernization of higher education in Kazakhstan through environmental, social, and governance principles**

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# Problems and prospects of modernization of the quality of the higher education system in Kazakhstan

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**Abstract**

Today, using digital technologies in education creates the foundation for developing new approaches to learning and forming digital skills, critical thinking, and creativity. The study aims to identify the problems and prospects of modernizing the quality assurance system in Kazakhstan's higher education, emphasizing digital transformation. Quantitative and qualitative methods were used to analyze the situation. The results showed significant differences in the level of digitization between universities in Kazakhstan. This emphasizes the need for additional investment in infrastructure. During the period from 2012 to 2022, the number of universities decreased due to the concentration on improving the quality of education. The study noted that digital technologies provide opportunities to improve the learning process and the quality of education. In addition, based on the analysis, recommendations were developed for integrating digital technologies, strengthening international cooperation, and reducing the digital divide. The proposed measures include the development of teacher training programs and the equal allocation of resources that contribute to the modernization of the quality assurance system in higher education.

**Keywords:** digital technologies, education, higher education, digital transformation, educational quality, education access, modernization

**JEL Classification Code (up to 3-5):** I21; I23; O33

## 1. Introduction

The analysis of challenges in developing educational potential and fostering intellectual growth, particularly in adapting the higher education system to contemporary demands, must be explored more. Furthermore, the task of bringing educational and postdoctoral programs into line with international standards in CIS countries, including Kazakhstan, is urgent. These labor market requirements necessitate intensifying efforts to adapt qualification requirements for "new generations", introducing modern technologies into education and improving teacher quality. Such measures will ensure long-term improvements in higher education quality.

The digital transformation of higher education represents one of the most critical tools for enhancing the quality and accessibility of education. As the academic literature highlights, digitalization involves implementing ICT and fundamentally reconfiguring the entire educational management system (Kozma, 2005; An et al., 2007). This is reflected in the automation of processes, the introduction of online learning platforms, and the development of digital tools for assessing learning outcomes. An essential aspect of this process is the development of digital competencies among educators and digital literacy among students, creating conditions for innovative teaching and

management (Sharabi, 2013; Lacka & Wong, 2019; Abylkassymova, 2020). This transformation includes the automation of administrative processes, the adoption of online platforms for distance learning, and the creation of digital tools to evaluate academic performance.

Moreover, the modernization of higher education is associated with a shift from an approach focused on compliance with established standards to a model centered on learning outcomes and the satisfaction of students and employers (Harvey & Green, 1993). Contemporary research emphasizes that integrating big data and digital platforms can enable real-time feedback, enhancing the efficiency of educational management processes (Aristovnik, 2014). In the context of reducing the number of universities in some areas of Kazakhstan, driven by efforts to improve the quality of education through resource concentration, digitalization offers unique opportunities to address regional disparities and improve education accessibility (Urdabayev et al., 2024). However, the implementation of digital technologies needs to be more cohesive, highlighting the need for a comprehensive approach to their integration.

This study aims to identify the challenges and prospects of modernizing the quality assurance system in higher education, focusing on the digital transformation of higher education in Kazakhstan. The research also evaluates how the use of digital technologies can contribute to improving the quality of education.

## 2. Literature Review

The modernization of the higher education quality assurance system is a pressing issue amidst changing competency requirements and the need to meet global standards. The educational environment faces numerous challenges related to improving the quality of teacher training, which, in turn, necessitates revising existing approaches to evaluating and ensuring the quality of higher education (An et al., 2007; Rebukha & Polishchuk, 2022; Pegalajar-Palomino et al., 2022). Dynamic changes in global education standards, technological advancements, and the growing demand for high-quality education underscore the need for modernization. Despite these advancements, persistent issues still need to be addressed, including disparities in access to quality education, insufficient integration of digital technologies, and a disconnect between academic programs and labor market needs (Dorokhova & Nikulina, 2024).

The impact of information and communication technologies (ICT) on the education system is widely discussed in academic literature (Kozma, 2005; Kipsoi et al., 2012; Díez et al., 2020). Numerous studies highlight the advantages of digital technologies in higher education (Sharabi, 2013; Lacka & Wong, 2019). These advantages include broad access to informational resources, the ability to design individualized learning trajectories, enhanced transparency in institutional operations, optimized interactions between faculty and students, improved collaboration among all stakeholders in the educational process, and the creation of agile structures for managing educational processes (Gochiyaeva & Baichorova, 2020).

The higher education quality assurance system is viewed as a combination of processes and mechanisms to ensure educational programs comply with established standards (Harvey & Green, 1993). A crucial aspect of modernization involves shifting from a traditional quality assurance approach focused on standard compliance to one emphasizing learning outcomes and the satisfaction of key stakeholders, including students and employers (Abylkassymova, 2020). This shift requires a paradigm change in quality management, necessitating the implementation of more flexible and adaptive evaluation and control mechanisms.

One key challenge in modernizing the higher education quality assurance system is developing and adopting new evaluation tools that account for the specific characteristics of national education systems while aligning with global trends. While ensuring a certain level of standardization, existing accreditation and licensing models often need to adequately reflect the unique features of individual educational programs (Romanowski & Karkouti, 2022). This underscores the need to create customized quality indicators to more accurately assess institutional achievements and graduates' preparedness (Urdabayev et al., 2024).

An important direction in modernization is the digitalization of quality assessment processes, which enhances transparency and objectivity. The development of ICT and the use of big data in evaluating the effectiveness of educational programs have become key factors in improving quality (Aristovnik, 2014). Digital technologies facilitate data collection and analysis automation and provide institutions with more immediate feedback, enabling timely responses to identified issues and improvements to the educational process.

In conclusion, modernizing the higher education quality assurance system requires a comprehensive approach that includes revising existing standards, developing new evaluation tools, digitalizing processes, and strengthening the role of internal quality management systems. Implementing these measures will ensure a higher quality of professional training, thereby contributing to the development of the economy and society in the context of globalization and rapidly changing technologies.

## 3. Research Methods

A set of methods, including qualitative and quantitative approaches and analytical tools, were used to achieve the research goals and analyze the problems and prospects of modernizing the quality assurance system in higher education in Kazakhstan. The study was based on the theoretical basis presented in the review of scientific literature and the analysis of current trends in digital transformation in education conducted within this work.

In addition, the paper used methods based on integrating quantitative and qualitative methods, providing a comprehensive look at the problem under study. The quantitative analysis focuses on analyzing the internal organizational structure of Kazakhstani universities. It emphasizes the analysis of strategic planning and the introduction of digital technologies to improve the quality of education. This approach not only allows for assessment of the current state of higher education quality assurance systems but also provides practical recommendations aimed at improving them, considering the identified problems and opportunities.

In general, the stages of the study are presented below.

1. At the first stage, an analysis was carried out on modern theoretical approaches to modernizing higher education. Scientific publications were studied that considered the introduction of digital technologies, changed approaches to assessing the quality of education, and their impact on accessibility and effectiveness in the educational process.

2. Primary data was collected through surveys among staff and students at universities in Kazakhstan. Of the 300 people invited to participate in the survey, 291 responded. Secondary data from government and international reports on the digitalization of education in Kazakhstan was also used.

3. SWOT analysis was used to structure identified problems and opportunities. This allowed identifying strengths, weaknesses, opportunities, and threats associated with introducing digital technology into the quality assurance system for higher education.

4. At the final stage, based on the analysis, recommendations were developed to improve the quality assurance system in higher education in Kazakhstan. The main focus was developing strategies for integrating digital technologies and strengthening international cooperation.

The approach used assessed the current state of quality assurance systems in higher education, identified key problems, and suggested ways to solve them. The results of this study can be used to develop national strategies for the digitalization and modernization of educational sectors.

## 4. Results

Overall, an analytical review of Kazakhstan's educational potential should examine the structure of the country's education system, including primary, secondary, higher, and vocational education. Evaluating how educational standards adapt to contemporary demands and global trends

is essential. The analysis of the current state of educational potential development across Kazakhstan's regions involves several key aspects:

1. Regional diversity, which includes an assessment of key education indicators across different regions of Kazakhstan, focusing on the availability and quality of educational institutions, the number of such institutions, and infrastructural differences between regions.

2. Identifying the main problems and difficulties faced by Kazakhstan's education system, such as disparities in access to education, insufficient funding, issues with education quality, and a lack of necessary resources.

3. Based on the analysis, concrete recommendations and strategies should be proposed to enhance the educational system in Kazakhstan's regions, addressing political, economic, and social dimensions.

Between 2012 and 2022, Kazakhstan experienced dynamic developments in the higher education sector, marked by positive and negative trends. As part of the State Program for Education and Science Development for 2016–2019, significant modernization of the technical and vocational education system was implemented.

Table 1 presents in greater detail the dynamics of changes in the number of higher education institutions across Kazakhstan's regions during this period.

**Table 1:** Dynamics of changes in the number of higher education institutions in 2012, 2017, 2018 and 2022

| Region | 2012 | 2017 | Growth rate, 2012–2017 | 2018 | 2022 | Growth rate, 2018-2022 | Growth rate, 2012-2022 |
|---|---|---|---|---|---|---|---|
| Akmola | 6 | 4 | 0,67 | 4 | 4 | 1,00 | 0,67 |
| Aktobe | 7 | 6 | 0,86 | 6 | 6 | 1,00 | 0,86 |
| Almaty | 3 | 3 | 1,00 | 3 | 1 | 0,33 | 0,33 |
| Atyrau | 3 | 3 | 1,00 | 3 | 3 | 1,00 | 1,00 |
| West Kazakhstan | 4 | 4 | 1,00 | 4 | 4 | 1,00 | 1,00 |
| Zhambylskaya | 5 | 3 | 0,60 | 3 | 2 | 0,67 | 0,40 |
| Karaganda | 10 | 9 | 0,90 | 9 | 8 | 0,89 | 0,80 |
| Kostanay | 7 | 7 | 1,00 | 7 | 6 | 0,86 | 0,86 |
| Kyzylorda | 4 | 3 | 0,75 | 3 | 3 | 1,00 | 0,75 |
| Mangystau | 3 | 2 | 0,67 | 2 | 1 | 0,50 | 0,33 |
| Pavlodar | 4 | 4 | 1,00 | 4 | 4 | 1,00 | 1,00 |
| North Kazakhstan | 2 | 2 | 1,00 | 2 | 2 | 1,00 | 1,00 |
| Turkestan | 2 | 2 | 1,00 | 2 | 3 | 1,50 | 1,50 |
| East Kazakhstan | 10 | 7 | 0,70 | 7 | 3 | 0,43 | 0,30 |
| Astana city | 14 | 13 | 0,93 | 14 | 14 | 1,00 | 1,00 |
| Almaty city | 45 | 40 | 0,89 | 41 | 39 | 0,95 | 0,87 |
| Shymkent city | 10 | 10 | 1,00 | 10 | 8 | 0,80 | 0,80 |

According to the presented data, the number of higher education institutions in Kazakhstan decreased by 23 in 2022 (116 institutions) compared to 2012 (139 institutions). Regionally, the most significant reduction in the number of institutions occurred in three regions: East Kazakhstan, Mangystau, and Almaty. This trend is attributed to several key factors. Firstly, the reduction in the number of universities in the cities of Almaty and Shymkent can be linked to government efforts to improve the quality of education. Concentrating resources and educational capacities in a smaller number of institutions may contribute to enhancing educational standards and research activities. Secondly, the reduction in higher education institutions may also be associated with economic factors, such as decreased funding and changes in the demand for educational services.

To achieve the research objective and conduct a deeper analysis, a range of higher education institutions in Kazakhstan was examined to assess the adoption and utilization of digital technologies in academic and administrative processes. The study included both major national universities and regional institutions, providing a representative overview of the current state of digitalization in the higher education sector.

An analysis of the digitalization levels of higher education institutions in Kazakhstan, based on 291 completed questionnaires out of 300 distributed, revealed significant variations in the frequency of digital social services. The findings demonstrate that digital platforms are crucial in universities' academic and administrative activities. However, the degree of their implementation varies depending on each institution's specific characteristics (Figure 1).

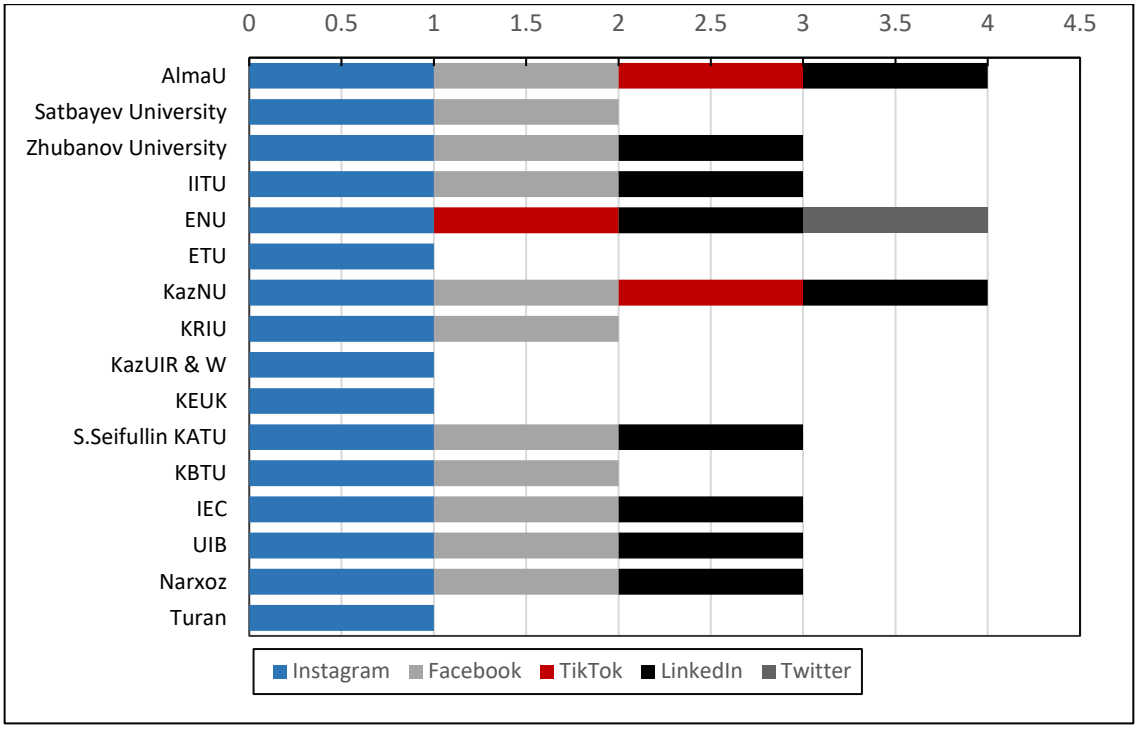


**Figure 1**. Frequency of use of digital social services in Kazakhstani universities

The level of equipment in Kazakhstani universities significantly impacts higher education management, providing opportunities for modern teaching and research. Equipment and software foster inclusivity and expand access to educational and scientific resources. The availability of appropriate equipment and software promotes the development of inclusive education and broadens access to educational and research tools. Data collected during the study indicate that the level of equipment in Kazakhstani universities varies significantly, highlighting the need for additional investments to improve the quality of the educational process.

Integrating digital technologies into the educational process offers universities significant advantages while presenting new challenges. The SWOT analysis helped structure the key issues and opportunities for modernizing the quality assurance system in higher education (Figure 2).

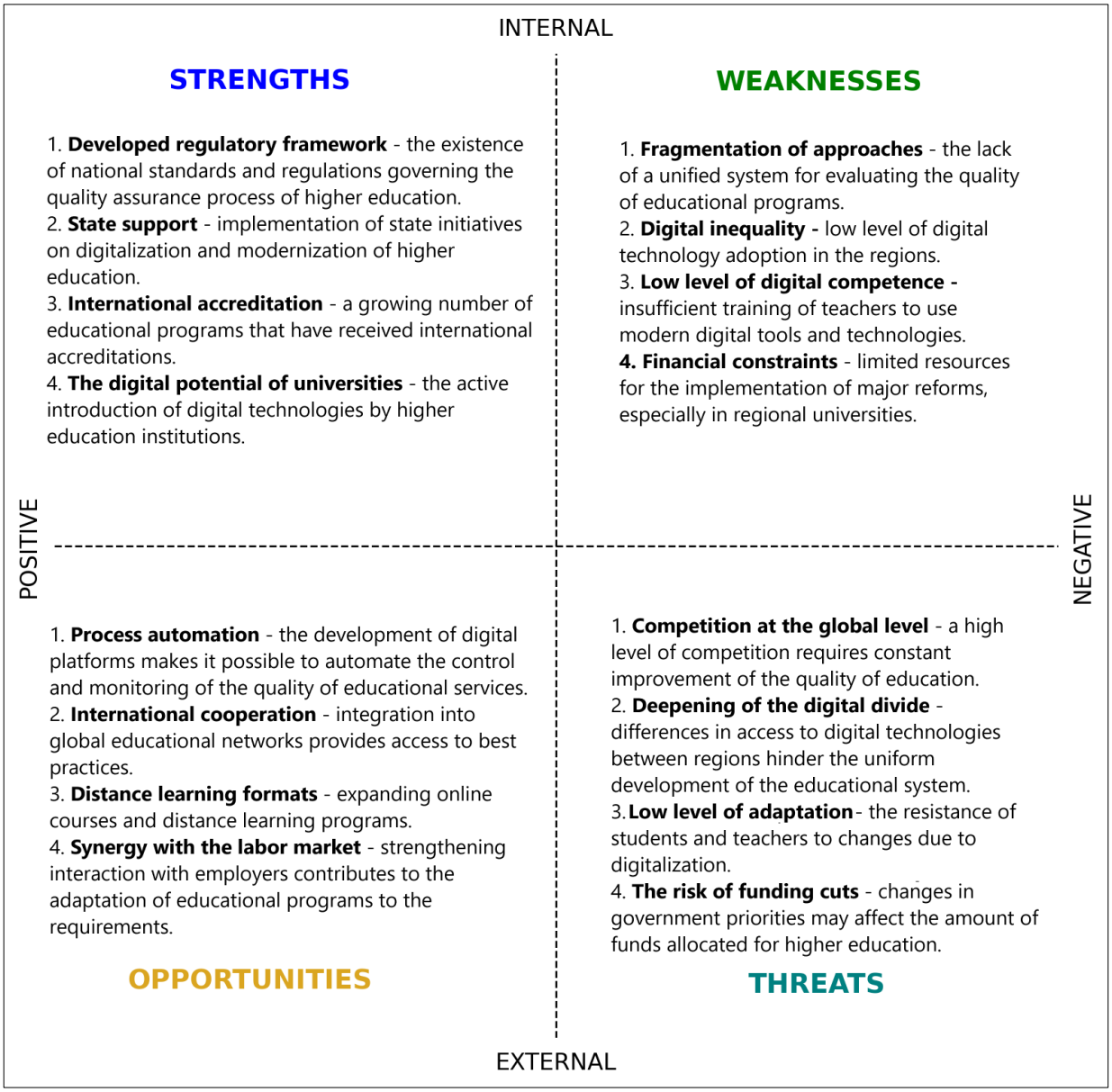


**Figure 2.** SWOT analysis for the digital potential of higher education institutions

The SWOT analysis revealed that modernization of the higher education quality system has significant potential for development by introducing digital technologies and international cooperation. However, it also revealed severe limitations that must be considered when developing modernization strategies. One of the key barriers is the regional digital divide, which manifests itself as limited access to technological infrastructure in certain territories. In addition, insufficient digital competence among teachers and management personnel creates difficulties in effectively implementing new educational approaches. Financial constraints, including high technology implementation costs, also significantly slow the transformation process.

## 5. CONCLUSION

The study aims to identify the problems and prospects of modernizing the quality assurance system in higher education in Kazakhstan, focusing on digital transformation. A literature review confirmed the relevance of this topic, emphasizing that the digitalization of education goes beyond the introduction of information and communications technologies, requiring a systematic rethink of approaches to managing the educational process. Analysis of scientific sources showed that the main advantages of digitalization include increased transparency of processes, expanded access to

educational resources, personalized learning, and strengthened interaction between participants in the education environment.

The data analysis confirmed significant regional differences in the level of digitalization of universities due to the heterogeneity of infrastructure and the availability of resources. This challenges the even distribution of educational opportunities, which requires additional investments and strategic planning. In addition, the study showed that the key role in successful transformation is played by the development of digital competencies of teaching and management staff, which requires a focused approach to their professional training. However, an integrated approach is needed to achieve sustainable results, including infrastructure investments, personnel professional development, and international cooperation.

The results highlight the importance of integrating digital technologies into the education quality assessment system. Big data and digital platforms provide new opportunities for analyzing educational achievements, improving the accuracy and efficiency of assessment, and adapting educational programs to the needs of students and the labor market. Thus, the modernization of the higher education system, focused on digital transformation, should be based on strategic planning aimed at eliminating regional imbalances, strengthening the scientific potential of universities, and bringing educational programs in line with modern requirements.

**Acknowledgments**

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## References

Abylkassymova, A. (2020). System modernization of general secondary education in the Republic of Kazakhstan. *Revista Tempos e Espaços em Educação, 13*(32), 1-17. https://doi.org/10.20952/revtee.v13i32.13334

An, X., Hannum, E., & Sargent, T.C. (2007). Teaching Quality and Student Outcomes: Academic Achievement and Educational Engagement in Rural Northwest China. *China: An International Journal, 5*, 309 - 334. https://doi.org/10.1142/S0219747207000179

Aristovnik, A. (2014). ICT and Educational Outputs/Outcomes in Selected Eu (NUTS 2) Regions: An Assessment Of Relative Efficiency. Research Papers in Economics, 125-133.

Díez, F., Villa, A.M., López, A., & Iraurgi, I. (2020). Impact of quality management systems in the performance of educational centers: educational policies and management processes. *Heliyon, 6*(4), e03824. https://doi.org/10.1016/j.heliyon.2020.e03824

Dorokhova, N. V., & Nikulina, Y. N. (2024). Interaction between the labor market and the market for educational services: theoretical aspects of the study. *Russian Journal of Labour Economics, 11*(5), 709-722. https://doi.org/10.18334/et.11.5.121036

Harvey, L., & Green, D. (1993). Defining Quality. *Assessment and Evaluation in Higher Education, 18*, 9-34. http://dx.doi.org/10.1080/0260293930180102

Gochiyaeva, M.D., & Baichorova, K.T. (2020). The role of digitalization in higher education. *Innovative technologies in education, 3* (5), 72-77.

Kipsoi, E.J., Chang'ach, J.K., & Sang, H.C. (2012). Challenges Facing Adoption of Information Communication Technology (ICT) In Educational Management in Schools in Kenya. *Journal of Sociological Research, 3*(1), 18-28. https://doi.org/10.5296/JSR.V3I1.1882

Kozma, R. (2005). National policies that connect ICT-based education reform to economic and social development. *Human technology: an interdisciplinary journal on humans in ICT environments, 1*, 117-156. https://doi.org/10.17011/HT%2FURN.2005355

Lacka, E., & Wong, T.C. (2019). Examining the impact of digital technologies on students' higher education outcomes: the case of the virtual learning environment and social media. *Studies in Higher Education, 46*, 1621 - 1634. http://dx.doi.org/10.1080/03075079.2019.1698533

Pegalajar-Palomino, M.D., Burgos-García, A., & Martínez-Valdivia, E. (2021). What Does Education for Sustainable Development Offer in Initial Teacher Training? A Systematic Review. *Journal of Teacher Education for Sustainability, 23*, 99 - 114. https://doi.org/10.2478/jtes-2021-0008

Rebukha, L., & Polishchuk, V. (2020). Ukrainian Society and Covid-19: the Influence of the Pandemic on Educational Processes in Higher School. *Postmodern Openings*, *11*(2), 120-127. https://doi.org/10.18662/po%2F11.2%2F165

Romanowski, M. H., & Karkouti, I. M. (2022). United States accreditation in higher education: does it dilute academic freedom? *Quality in Higher Education*, *30*(1), 97–111. https://doi.org/10.1080/13538322.2022.2127165

Sharabi, M. (2013). Managing and improving service quality in higher education. International *Journal of Quality and Service Sciences*, *5*(3), 309-320. https://doi.org/10.1108/IJQSS-03-2013-0016

Urdabayev, M., Ainakul, N., & Sabdenaliyev, B. (2024). Modernization of the Motivation Systems in Higher Education: Challenges and Digital Solutions. *Eurasian Journal of Economic and Business Studies*, *68*(3), 111–126. https://doi.org/10.47703/ejebs.v68i3.431