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DIGITAL TECHNOLOGIES AS A FACTOR FOR DEVELOPING THE PROFESSIONAL ACTIVITIES OF HIGHER EDUCATION TEACHERS

Annotation. *This article analyzes the role and significance of digital technologies in developing the professional activities of higher education teachers. The factors and methods for forming digital competence, utilizing modern educational platforms, and increasing the effectiveness of scientific and pedagogical activities are highlighted.*

Keywords: *digitalization, higher education, pedagogical competence, LMS, professional development, artificial intelligence.*

OLIY TA'LIM MUASSASALARI PEDAGOGLARINING KASBIY FAOLIYATINI RIVOJLANTIRISHDA RAQAMLI TEXNOLOGIYALARNING O'RNI VA AHAMIYATI

Annotatsiya. *Mazkur maqolada oliy ta'lim muassasalari pedagoglarining kasbiy faoliyatini rivojlantirishda raqamli texnologiyalarning o'rni va ahamiyati tahlil qilingan. Raqamli kompetentlikni shakllantirish omillari va usullari, zamonaviy ta'lim platformalaridan foydalanish, shuningdek, ilmiy-pedagogik faoliyat samaradorligini oshirish masalalari yoritilgan.*

Kalit so'zlar: *raqamlashtirish, oliy ta'lim, pedagogik kompetentlik, LMS, kasbiy rivojlanish, sun'iy intellekt.*

РОЛЬ И ЗНАЧЕНИЕ ЦИФРОВЫХ ТЕХНОЛОГИЙ В РАЗВИТИИ ПРОФЕССИОНАЛЬНОЙ ДЕЯТЕЛЬНОСТИ ПЕДАГОГОВ ВУЗОВ

Аннотация. *В данной статье анализируется роль и значение цифровых технологий в развитии профессиональной деятельности педагогов высших учебных заведений. Освещены факторы и методы формирования цифровой компетентности, использования современных образовательных платформ, а также повышения эффективности научно-педагогической деятельности.*

Ключевые слова: *цифровизация, высшее образование, педагогическая компетентность, LMS, профессиональное развитие, искусственный интеллект.*

Introduction. The rapid transformation processes occurring in the global education system today require new approaches and a high level of digital literacy from higher education teachers [1]. Digital technologies have become not just a means of education, but a key driver ensuring the continuous improvement of a teacher's professional skills and their labor productivity. In higher education institutions in the global academic environment, scientific research aimed at expanding the capabilities of educators to effectively organize the educational process based on LMS platforms, virtual and augmented reality (VR, AR), digital content creation technologies, electronic monitoring systems, and data-driven education approaches is considered one of the priority areas.

Research Methodology. This study aims to evaluate the role of digital technologies in the professional activities of higher education institution [2] (HEI) faculty, their level of digital competence, and the impact on educational quality. Supporting the professional development of educators and ensuring the sustained quality of learning outcomes requires reorganizing the assessment system based on modern scientific approaches and improving diagnostic methods. In this regard, developing digital platforms that ensure the transparency, objectivity, continuity, and reliability of assessment results is particularly important. Specifically, implementing multimodal diagnostic approaches that allow for monitoring and analyzing various aspects of a faculty member's activity within a unified information environment is a critical factor in managing educational quality. Therefore, in modern pedagogical research, organizing the assessment process by integrating data from various sources into a single diagnostic system is recognized as a pressing scientific direction.

Literature review. In recent years, the digitalization of higher education and the development of educators' professional activities through modern technologies have been a focus of attention for both local and international researchers [6]. To clarify the theoretical and practical aspects of this issue, it is advisable to analyze the scientific literature by dividing it into three main areas. In the international scientific community, the concept of an educator's digital activity is based on the DigCompEdu (Digital Competence Framework for Educators) model. This framework, developed by the European Commission, defines an educator's digital competence as encompassing not only technical skills but also 6 distinct areas, such as creating digital resources, organizing teaching and learning, assessment, and developing students' digital skills (Redecker, 2017).

Furthermore, the TPACK (Technological Pedagogical Content Knowledge) model, proposed by Mishra and Koehler (2006), demonstrates that the success of pedagogical activity is realized at the organic intersection of three knowledge sources: technological, pedagogical, and content (subject) knowledge [6]. Modern research shows (Ferrari et al., 2013) that an educator who cannot integrate technology with subject-specific methodology will not achieve lesson effectiveness.

Local scholars and researchers from CIS countries are paying special attention to the organizational and pedagogical conditions for implementing digital technologies in higher education:

Local research: In the works of scholars such as A.A.Abduqodirov, U.Sh. Begimqulov, and N.I. Taylaqov, the issues of enhancing the competence of educators in the field of information and communication technologies (ICT) within Uzbekistan's higher education system have been theoretically substantiated. They assert that the digitalization of the educational process should change the educator's subjective position, elevating them to the level of an innovator (creator).

Systemic integration: Recent studies (for example, the practical implementation of HEMIS and LMS systems) have indicated that a digital environment allows educators to reduce administrative burdens and engage more in scholarly and creative activities. An analysis of scientific sources reveals that there are a number of psychological and technical barriers to the practical implementation of digital technologies. As Bates (2019) notes in his work "Teaching in a Digital Age," many educators use technology merely to automate traditional teaching methods (for example, reading from slides instead of writing on a board) [1]. However, true professional development occurs only when the pedagogy of education itself is transformed (through interactivity, hybrid learning, and project-based teaching).

Analysis and results. The results of the experimental work showed that the use of a multimodal diagnostic approach in assessing the professional performance of teaching staff ensures high efficiency compared to traditional assessment methods. During the study, information regarding the professional activities of educators was collected from various sources and analyzed by integrating it into a unified information environment. As a result, the objectivity of the assessment process has increased, and the possibility of regular monitoring of the dynamics of professional development of teachers has been created. Analysis has shown that an approach based solely on testing or expert evaluation cannot fully reflect all aspects of a teacher's activity. This approach not only increased the reliability of the results but also significantly reduced the influence of subjective factors in the assessment. The developed multimodal diagnostic model based on the results of the experiment made it possible to comprehensively evaluate the teacher's activity in five main areas: motivational-value, cognitive, activity-technological [6], and communicative-reflexive criteria.

Throughout the research, data on the educators' professional activities were collected from various sources and analyzed in an integrated manner within a unified information environment.

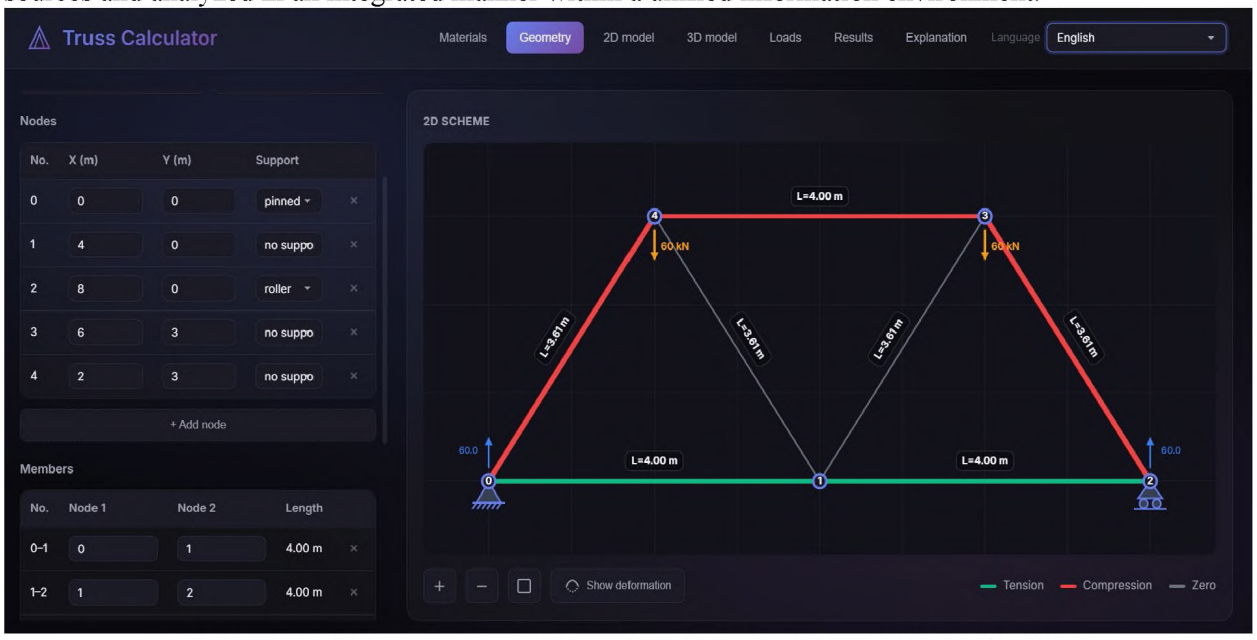


Figure 1. Preliminary results of the engineering calculation mobile application.

Each criterion was characterized by a system of specific indicators, and their combined analysis served to determine the level of professional development of the educator. This approach allowed for the interpretation of evaluation results not only as a final indicator but also as analytical information reflecting development dynamics. One of the important results of the study was the confirmation of the practical effectiveness of the "EngineeringWeb" information system developed by the author and the "Engineering Accounting" module within its structure. Through this platform, the automated collection, processing, and analysis of data regarding the professional activities of educators has been established [5].

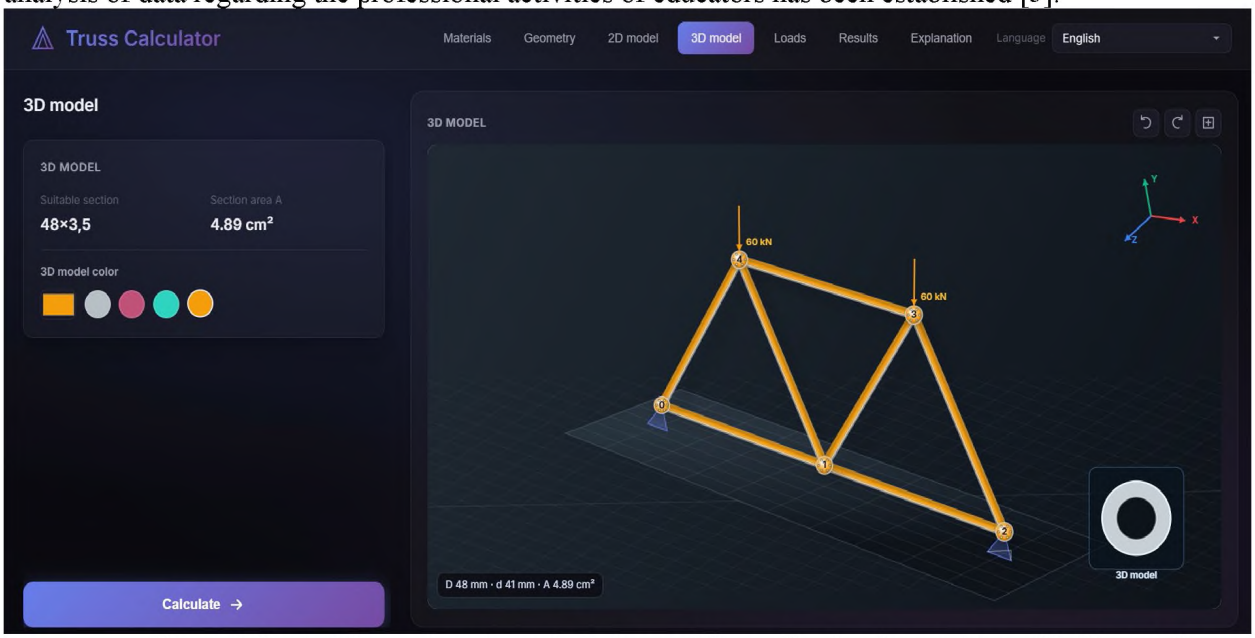


Figure 2. Part of the engineering calculation mobile application for working with 3D models.

Informatization of education is one of the main factors for its improvement, and its important tool is the development of interactive textbooks, electronic educational and methodological complexes, or websites for subjects taught by professors and teachers, serving as the primary factor in creating a digital educational environment for the subject. Helps to solve engineering problems easily and efficiently [4].

Conclusion/Recommendations. This study aimed to conduct a comprehensive analysis of the role of digital technologies in the professional activities of higher education institution [2] (HEI) faculty and their impact on professional development. Based on the obtained results and theoretical analysis, the following main scientific conclusions were reached:

1. Transformation of Professional Activity: Digital technologies are transforming the role of HEI faculty from the traditional status of "lecturer" to that of "educational facilitator and facilitator-creator." This requires educators to develop digital pedagogical skills (in line with the TPACK and DigCompEdu models) alongside technical skills.

2. Optimization of Time and Labor Resources: Integrating LMS (HEMIS, Moodle) and Artificial Intelligence (AI) tools into the educational process can reduce faculty's administrative and routine workload by 30-40%, allowing them to focus their attention on research and creative activities.

3. Existing Barriers: The primary obstacles to the professional development of educators are not issues with technical infrastructure, but rather psychological resistance (anxiety about adapting to digital technologies) and a lack of methodological support and systematic training.

Based on the research findings, proposals to enhance the effectiveness of using digital technologies in the professional activities of higher education [4] faculty have been classified into 3 main levels:

Introduction of a Digital Competency Assessment System: Periodically assessing the digital skills of HEI faculty based on DigCompEdu standards and incorporating these assessments into a rating system.

Incentive Mechanism: Establishing a procedure for material and non-material incentives for educators who make effective use of high-quality electronic educational resources, interactive video lectures, and AI platforms.

Continuous Self-Improvement (Lifelong Learning): HEI faculty should independently master free courses on digital pedagogy available on international open educational platforms (e.g., Coursera, edX, Udemy).

Culture of Artificial Intelligence: Fostering the skills to effectively use AI tools for preparing educational content, analyzing scientific literature, and assessing student knowledge, while adhering to ethical standards [6].

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