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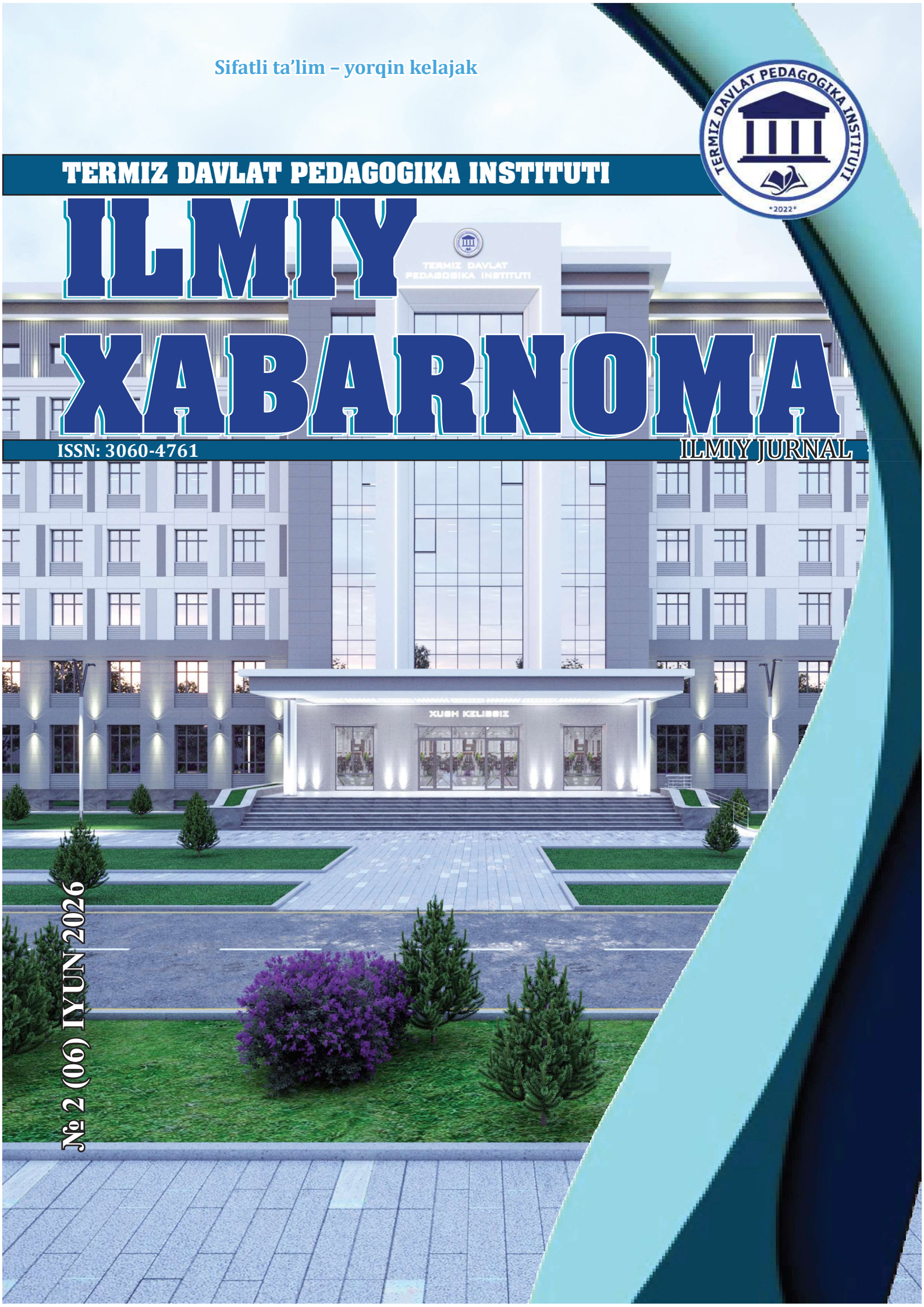
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E-mail: aliqulovakaromat0124@gmail.com

THEORETICAL FOUNDATIONS OF DEVELOPING DIGITAL CULTURE AMONG STUDENTS OF PEDAGOGICAL HIGHER EDUCATION INSTITUTIONS

ABSTRACT: This article explores the theoretical foundations for fostering digital culture among students in pedagogical higher education institutions. It provides a scholarly interpretation of the concept of digital culture, examining its essential components and clarifying its significance within the contemporary educational landscape. Moreover, the study emphasizes the critical role of information and communication technologies in the development of students' digital competencies. It also considers the impact of modern pedagogical approaches and innovative instructional methods in enhancing this process.

The paper identifies key directions in the advancement of digital culture, highlighting information literacy, media culture, cyber culture, and digital security as fundamental elements. In addition, it demonstrates how the effective integration of digital tools into the higher education process can contribute to the development of students' independent thinking skills, creative potential, and professional competencies. Based on the outcomes of the research, a set of practical recommendations is proposed to support the systematic development of digital culture in pedagogical higher education institutions [1;132-134].

KEYWORDS: *digital culture, pedagogical education, information technology, digital competence, media literacy, innovative methods, cyber culture, digital safety, learning process, independent learning, creative thinking.*

PEDAGOGIK OLIY TA'LIM MUASSASALARI TALABALARIDA RAQAMLI MADANIYATNI RIVOJLANTIRISHNING NAZARIY ASOSLARI

ANNOTATSIYA: Ushbu maqolada pedagogik oliy ta'lim muassasalarida tahsil olayotgan talabalar orasida raqamli madaniyatni shakllantirish va rivojlantirishning nazariy jihatlari atroflicha o'rganilgan. Unda raqamli madaniyatning mohiyati, uning asosiy komponentlari hamda bugungi ta'lim tizimidagi ahamiyati ilmiy yondashuv asosida tahlil etiladi. Bundan tashqari, talabalarda raqamli kompetensiyalarni rivojlantirish jarayonida axborot-kommunikatsiya texnologiyalarining o'rni, zamonaviy pedagogik yondashuvlar va innovatsion metodlardan foydalanish masalalari yoritib beriladi.

Tadqiqotda raqamli madaniyatni rivojlantirishning ustuvor yo'nalishlari sifatida axborot savodxonligi, media madaniyat, kibermadaniyat hamda raqamli xavfsizlik kabi muhim yo'nalishlar alohida e'tirof etiladi. Shu bilan birga, oliy ta'lim jarayoniga raqamli vositalarni samarali integratsiya qilish orqali talabalarning mustaqil fikrlash qobiliyatini kuchaytirish, ijodiy yondashuvini rivojlantirish va kasbiy kompetensiyalarini mustahkamlash imkoniyatlari asoslab beriladi. Tadqiqot natijalariga tayangan holda, pedagogik oliy ta'lim muassasalarida raqamli madaniyatni rivojlantirishga xizmat qiluvchi amaliy tavsiyalar ishlab chiqilgan.

KALIT SO'ZLAR: *raqamli madaniyat, pedagogik ta'lim, axborot texnologiyalari, raqamli kompetensiya, media savodxonlik, innovatsion metodlar, kibermadaniyat, raqamli xavfsizlik, ta'lim jarayoni, mustaqil ta'lim, kreativ fikrlash.*

ТЕОРЕТИЧЕСКИЕ ОСНОВЫ РАЗВИТИЯ ЦИФРОВОЙ КУЛЬТУРЫ У СТУДЕНТОВ ПЕДАГОГИЧЕСКИХ ВЫСШИХ УЧЕБНЫХ ЗАВЕДЕНИЙ

АННОТАЦИЯ: В данной статье рассматриваются теоретические основы формирования и развития цифровой культуры у студентов педагогических высших учебных заведений. Раскрывается сущность понятия «цифровая культура», анализируются её ключевые компоненты, а также определяется её роль и значение в условиях современной образовательной среды.

Особое внимание уделяется значению информационно-коммуникационных технологий в процессе формирования цифровых компетенций студентов. Наряду с этим, освещается роль современных педагогических подходов и инновационных методов обучения, способствующих повышению эффективности данного процесса.

В работе выделяются приоритетные направления развития цифровой культуры, к которым относятся информационная грамотность, медиакультура, киберкультура и цифровая безопасность, рассматриваемые как важнейшие составляющие. Кроме того, обосновывается, что рациональное использование цифровых инструментов в системе высшего образования способствует развитию самостоятельного мышления студентов, их творческого потенциала и профессиональных компетенций.

На основе полученных результатов разработаны практические рекомендации, направленные на совершенствование процессов формирования цифровой культуры в педагогических высших учебных заведениях.

КЛЮЧЕВЫЕ СЛОВА: *цифровая культура, педагогическое образование, информационные технологии, цифровая компетенция, медиаграмотность, инновационные методы, киберкультура, цифровая безопасность, образовательный процесс, самостоятельное обучение, креативное мышление.*

INTRODUCTION. Amid the accelerating digital transformation affecting nearly every sector of society, the field of education is experiencing profound changes focused on the integration of digital technologies into instructional practices and learning environments. Within this evolving context, a key priority of contemporary higher education lies in cultivating digital culture among students, particularly prospective teachers, who are expected to play a crucial role in developing the digital competencies of future generations [2–21]. Digital culture can be defined as a holistic personal attribute that encompasses an individual's capacity to use digital technologies efficiently, assess online information with a critical perspective, maintain information security, and engage responsibly within digital environments. For students enrolled in pedagogical higher education institutions, fostering such a culture is of particular significance, as it has a direct impact on their professional competence, the quality of their teaching practices, and their preparedness to implement innovative approaches in education [3; 43–46].

The relevance of this research is determined by the growing importance of digitalization in education, the need to improve the quality of teacher training, and the necessity to develop students' competencies in working within digital learning environments [4;25-27]. The aim of this study is to examine the theoretical foundations of developing digital culture among students of pedagogical higher education institutions, to analyze its structure and components, and to identify effective approaches for its formation and development. The object of the study is the students of pedagogical higher education institutions and their educational activities within the digital environment [5-12].

The subject of the study is the process of developing digital culture among these students, including its theoretical bases, pedagogical conditions, and methodological approaches [6-112-125].

SCIENTIFIC NOVELTY

The scientific novelty of this topic is reflected in the following aspects:

1.The process of developing digital culture among students of pedagogical higher education institutions is theoretically substantiated as an integrated system, combining digital literacy, media culture, cyberculture, and digital security.

2.The study scientifically analyzes the role of both traditional pedagogical approaches and modern innovative methods (blended learning, interactive learning, digital platforms) in the formation of digital culture [7-15].

3. A step-by-step model for the development of future teachers' digital competencies and its structural components are scientifically justified and described.

4.Theoretical mechanisms for enhancing students' independent thinking, creativity, and professional competencies in digital learning environments are revealed.

Below is a structured table presenting the theoretical foundations for developing digital culture among students of pedagogical higher education institutions:

№	Theoretical Foundation	Description	Core Idea	Practical Significance
1	Digital Competence Theory	Formation of students' ability to use ICT effectively and consciously	Unity of knowledge, skills, and attitudes	Enables effective use of modern technologies
2	Media Literacy Theory	Development of skills to search, analyze, and evaluate information	Formation of critical thinking	Protection against misinformation
3	Information Culture Concept	Development of ethics and culture of working with information	Responsible use of information	Ensures academic integrity
4	Digital Pedagogy Theory	Methods of integrating digital technologies into the educational process	Creation of an innovative learning environment	Improves teaching effectiveness
5	Competency-Based Approach	Outcome-oriented education model	Development of practical skills	Enhances professional readiness of students
6	Constructivist Learning Theory	Students construct knowledge independently	Active learning process	Develops independent thinking
7	Information Security Theory	Protection of personal and educational data	Safe digital environment	Builds cybersecurity skills
8	Lifelong Learning Theory	Continuous learning throughout life	Adaptability and self-development	Motivates continuous self-improvement
9	Socio-Cultural Approach	Relationship between digital culture and society	Collaboration and communication	Develops online communication culture
10	Innovation Theory	Process of creating and applying new ideas	Creativity and initiative	Supports project and start-up activities

LITERATURE REVIEW AND METHODS. In Uzbekistan, the advancement of digital culture within the educational sphere has emerged as a significant area of scholarly interest, particularly in the domains of pedagogy, information technology, and the modernization of the education system. Local researchers have primarily concentrated on issues such as the integration of ICT into teaching and learning processes, the development of students' digital competencies, and the enhancement of pedagogical practices through the effective use of digital tools and resources.

One of the well-known scholars in this field is Abduqodir Abduqodirov, whose works are associated with the introduction and development of information and communication technologies in the educational process. His research emphasizes the importance of integrating ICT into teaching and learning, as well as preparing future teachers to work effectively in digital educational environments [11;2-3]. Another group of Uzbek researchers, including specialists in pedagogical sciences such as

U. Yuldashev and colleagues, have studied the methodological aspects of forming ICT competence among students. Their work highlights that digital competence should be developed not only through technical training but also through pedagogical strategies that encourage independent learning, critical thinking, and effective information management [12-6]. The issue of digital culture development in higher education has been widely explored in international [10-7].

A significant contribution to the development of this field was made by Paul Gilster, who was among the first scholars to define the concept of digital literacy. According to Gilster, digital competence extends beyond the simple ability to operate technological tools; it also includes the skill of critically analyzing and effectively utilizing information obtained from digital environments. His ideas contributed to the understanding of digital culture as a combination of cognitive and analytical abilities rather than only technical proficiency. In a similar direction, Henry Jenkins advanced the discussion by emphasizing media literacy and the concept of participatory culture, highlighting the active role of individuals in creating, sharing, and engaging with digital content.

Jenkins also emphasized that digital environments shift learners' roles from passive recipients of information to active producers of content. This perspective is especially significant for pedagogical education, as it underlines the importance of collaborative learning, creative engagement, and responsible participation in digital spaces-core components in the formation of digital cultureWithin the European educational landscape, research conducted by Ala-Mutka Kirsti and experts from the European Commission focused on the analysis of digital competence frameworks.

Primarily, the use of multimedia learning resources-including presentations, instructional videos, animations, and interactive simulations-facilitates students' comprehension of complex theoretical ideas. Such digital tools enhance learners' involvement in the learning process and support the development of visual perception and analytical thinking abilities, which are regarded as essential elements of digital culture [11; 4–5].

Secondly, learning management systems (LMS) and various online educational platforms, including Moodle, Google Classroom, and Microsoft Teams, create effective conditions for organizing remote learning, submitting academic tasks, and engaging in collaborative activities. The use of such digital environments supports the development of students' independent learning abilities, enhances their digital communication skills, and fosters a sense of responsibility when interacting in virtual learning spaces.

Method Name	Purpose of Application	Expected Result
Theoretical analysis	Studying scientific literature on digital culture	Deep understanding of theoretical foundations
Comparative analysis	Comparing different scientific views and approaches	Identifying the most effective approaches
Survey (questionnaire)	Determining students' level of digital literacy	Assessing the practical situation
Interview	Studying teachers' opinions and experiences	Obtaining qualitative data

Furthermore, electronic libraries, digital textbooks, and online scientific databases provide students with access to extensive academic and research materials. This contributes to the enhancement of their information literacy skills and enables them to critically assess, filter, and effectively utilize credible digital sources in their learning and research activities.

RESULTS AND DISCUSSION. The analysis of theoretical approaches to the development of digital culture among students in pedagogical higher education institutions indicates that digital culture represents a comprehensive system encompassing knowledge, practical skills, and value orientations associated with the competent and responsible application of digital technologies in educational settings [12–9].

The findings of the study show that digital culture is composed of several interrelated elements, including digital literacy, skills in information handling, media competence, proficiency in the use of ICT, as well as an understanding of digital ethics and cybersecurity principles. These components are closely connected and require integrated and continuous development rather than isolated improvement. The analysis further demonstrates that the

successful formation of students' digital culture largely depends on the consistent and purposeful integration of ICT into the educational process. It was also observed that learners who regularly participate in digital learning environments tend to exhibit stronger independence in learning, higher levels of creativity, and improved problem-solving abilities. Moreover, the research outcomes indicate that pedagogical strategies such as interactive instruction, blended learning models, and the integration of online educational platforms play a substantial role in enhancing students' digital competencies. These approaches foster greater learner engagement and promote more effective collaboration between students and instructors.

Overall, the study confirms that the formation and development of digital culture represent a fundamental requirement for future educators, as it has a direct impact on their professional preparedness, pedagogical competence, and ability to operate effectively in contemporary digitalized educational settings.

In addition, the study shows that the formation of digital culture is strongly connected with ongoing professional development processes. Prospective educators are required to continuously refresh and expand their knowledge and skills in response to the rapid advancement of digital technologies. This underlines the growing significance of lifelong learning in the context of the digital era. The results also indicate that digital culture should not be viewed merely as a set of technical ICT skills. Instead, it represents a wider pedagogical and socio-cultural phenomenon that integrates cognitive, ethical, and professional dimensions [13–3]. Digital culture encompasses cognitive, communicative, ethical, and technological aspects, all of which are crucial for preparing future teachers to work effectively in an increasingly digitalized educational environment.

The analysis also highlights that fostering digital culture among students in pedagogical higher education institutions demands a structured, consistent, and long-term approach rather than isolated or short-term interventions. Isolated or purely technical training approaches are considered inadequate for meaningful development of digital skills. Instead, digital competencies need to be systematically integrated into all components of the educational process. This perspective corresponds with contemporary pedagogical theories that prioritize competence-based education and learner-centered instructional models.

The discussion further indicates that the effective integration of ICT tools into instructional practices has a positive impact on students' level of engagement as well as their academic performance. The use of digital platforms, multimedia materials, and interactive technologies contributes to the creation of a more flexible and stimulating learning environment, thereby supporting independent study and collaborative learning processes. At the same time, the findings suggest that in the absence of adequate pedagogical support, learners may encounter difficulties such as information overload, exposure to unreliable digital sources, and inappropriate use of online content [14; 5–7].

International research traditions tend to place greater emphasis on media literacy development and the cultivation of critical thinking skills within digital environments, whereas domestic studies are more oriented toward the practical integration of ICT and the provision of methodological support in educational practice. The synthesis of these two perspectives may serve as a basis for constructing a more holistic framework aimed at enhancing digital culture among future educators [15; 11–17].

CONCLUSION. Overall, the study of the theoretical bases for the development of digital culture among students in pedagogical higher education institutions indicates that digital culture constitutes an essential element of contemporary teacher education. It can be viewed as an integrated system of knowledge, practical skills, value orientations, and competencies that ensure the effective, ethical, and responsible application of digital technologies within the educational process. The research findings indicate that digital culture comprises a set of closely related components, including digital literacy, proficiency in information and communication technologies, media awareness, ethical conduct in digital spaces, and knowledge of cybersecurity principles. It is emphasized that these elements should be developed through a coherent and systematic approach in order to effectively ensure the professional preparedness of future educators.

The results further demonstrate that the successful formation of digital culture is largely determined by the targeted application of innovative pedagogical technologies, interactive instructional strategies, and modern digital learning platforms. The implementation of such approaches contributes to a noticeable improvement in students' active participation in the learning process, fosters greater autonomy, and strengthens their critical thinking abilities. In conclusion, the development of digital culture represents a fundamental prerequisite for preparing future educators in the era of global digital transformation. Pedagogical higher education institutions are expected to systematically incorporate digital technologies into teaching and learning processes while consistently enhancing students' digital competencies.

RECOMMENDATIONS:

1.It is necessary to introduce specialized courses and training programs aimed at developing digital culture in pedagogical higher education institutions.

2.To enhance students' digital competencies, it is recommended to regularly use modern information and communication technologies (LMS, online platforms, multimedia tools) in the learning process.

The use of interactive and innovative teaching methods (blended learning, flipped classroom, project-based learning) should be widely implemented to increase student engagement.

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