ISSN: 2053-3578 I.F. 12.34

THE PEDAGOGICAL SYSTEM FOR DEVELOPING DIGITAL CULTURE AMONG BACHELOR STUDENTS IN THE INFORMATION AND EDUCATIONAL ENVIRONMENT

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Abstract: In the context of rapid digital transformation, higher education institutions face the challenge of preparing students not only with professional knowledge but also with a well-developed digital culture. Digital culture encompasses digital literacy, ethical use of technology, critical thinking, information security awareness, and responsible participation in the digital environment. This article explores the pedagogical system for developing digital culture among bachelor students within an information and educational environment. The study emphasizes the structural components, principles, methods, and conditions necessary for the effective formation of digital culture in higher education. The proposed pedagogical system integrates technological, methodological, and value-based dimensions, ensuring students' readiness for academic, professional, and social activities in the digital era.

Keywords: digital culture, information and educational environment, bachelor students, pedagogical system, higher education, digital competence

Introduction

The digitalization of society has fundamentally transformed the way people communicate, learn, work, and interact with information. In this rapidly evolving digital landscape, higher education institutions play a critical role in shaping students' digital culture. Today's bachelor students are often perceived as "digital natives"; however, mere familiarity with digital tools does not guarantee the presence of a mature and responsible digital culture. The ability to critically evaluate information, adhere to ethical norms in digital communication, protect personal data, and use digital technologies purposefully remains a significant educational challenge.

Digital culture has become a key indicator of a graduate's readiness to function effectively in modern society. Employers increasingly expect graduates to demonstrate not only professional competencies but also digital responsibility, adaptability, and awareness of digital

risks. Consequently, the formation of digital culture should be regarded as a systematic pedagogical process rather than a spontaneous outcome of technology use.

The information and educational environment of a university provides unique opportunities for developing students' digital culture. Learning management systems, digital libraries, online collaboration tools, and virtual learning platforms create conditions for integrating digital practices into the educational process. However, without a clearly defined pedagogical system, the potential of these tools often remains underutilized.

This article aims to substantiate a pedagogical system for developing digital culture among bachelor students within the information and educational environment. Special attention is given to the conceptual foundations of digital culture, the structure of the pedagogical system, and the principles guiding its implementation.

Digital culture is a multidimensional concept that extends beyond technical skills and operational knowledge of digital tools. In the pedagogical context, digital culture can be defined as an integrative personal quality that reflects an individual's ability to effectively, ethically, and safely use digital technologies in educational, professional, and social activities.

The structure of digital culture includes several interrelated components. The cognitive component involves knowledge of digital technologies, information systems, and digital resources. The operational component reflects practical skills in using digital tools for learning, communication, and problem-solving. The value-based component encompasses ethical norms, responsibility, and respect for intellectual property in the digital space. Finally, the reflective component enables individuals to critically assess their digital behavior and continuously improve their digital practices.

From an educational perspective, digital culture should be formed purposefully through structured learning activities. It is not sufficient to assume that students will naturally acquire digital culture by interacting with technology. Instead, universities must create pedagogical conditions that support the conscious development of digital values, competencies, and behaviors.

The information and educational environment of a university represents a complex system of digital resources, technological infrastructure, and pedagogical interactions. It includes learning management systems, electronic textbooks, digital assessment tools, virtual classrooms, and communication platforms that facilitate interaction between students and instructors.

This environment serves as a key platform for forming digital culture, as it immerses students in continuous digital interaction. Through participation in online learning activities, students encounter real-life digital challenges such as information overload, online collaboration, academic integrity, and data security. These challenges create opportunities for developing critical digital awareness and responsible behavior.

However, the effectiveness of the information and educational environment depends largely on how it is pedagogically structured. When digital tools are used merely as technical supplements, their educational value is limited. In contrast, when they are integrated into a coherent pedagogical system, they become powerful instruments for shaping students' digital culture.

The pedagogical system for developing digital culture among bachelor students is a structured set of interconnected components aimed at achieving clearly defined educational outcomes. This system includes goals, content, methods, forms, tools, and evaluation criteria, all aligned with the requirements of the digital society.

The primary goal of the system is to form a high level of digital culture that enables students to function effectively and responsibly in the information and educational environment. This goal is realized through a set of pedagogical objectives, including the development of digital literacy, critical thinking, ethical awareness, and self-regulation in digital activities.

The content component of the system integrates digital culture topics across academic disciplines. Rather than being confined to a single course, digital culture is embedded into various subjects, ensuring its interdisciplinary nature. Topics such as information ethics, digital communication norms, cybersecurity basics, and academic integrity are incorporated into the curriculum.

The effectiveness of the pedagogical system is based on several key principles. The principle of systematicity ensures that digital culture formation is continuous and coherent throughout the entire period of bachelor education. The principle of activity emphasizes students' active engagement in digital learning tasks, promoting experiential learning.

The principle of value orientation highlights the importance of ethical and moral aspects of digital behavior. Students are encouraged to reflect on the social consequences of digital technologies and their personal responsibility in the digital space. The principle of adaptability allows the pedagogical system to respond to rapidly changing digital technologies and educational needs.

Active and interactive teaching methods play a crucial role in forming digital culture. Project-based learning, online discussions, case studies, and digital simulations enable students to apply digital tools in meaningful contexts. Collaborative tasks conducted through online platforms foster communication skills and digital teamwork.

Blended and online learning formats provide flexibility and accessibility, allowing students to develop self-directed learning skills. At the same time, instructors act as facilitators, guiding students in navigating digital resources and reflecting on their digital practices.

The successful implementation of a pedagogical system aimed at developing digital culture among bachelor students requires a set of well-defined pedagogical conditions. These conditions ensure the integrity, sustainability, and effectiveness of the educational process within the information and educational environment.

One of the key pedagogical conditions is the availability of a digitally enriched learning environment. This includes reliable technological infrastructure, access to digital educational resources, and the integration of modern information and communication technologies into the curriculum. Without stable digital platforms and tools, the formation of digital culture becomes fragmented and superficial.

Another important condition is the digital competence of teaching staff. Instructors play a crucial role as role models in demonstrating ethical, responsible, and effective use of digital technologies. Their ability to design digital learning activities, manage online communication, and guide students in navigating digital challenges directly influences the quality of digital culture formation.

Motivational support also serves as a significant pedagogical condition. Students should clearly understand the relevance of digital culture for their academic success and future professional careers. When learners perceive digital culture as a valuable personal and professional asset, they become more engaged and responsible participants in the digital educational environment.

The evaluation of digital culture formation requires a comprehensive system of criteria and indicators. Assessment should not be limited to technical proficiency but should reflect the holistic nature of digital culture.

Cognitive indicators include students' understanding of digital technologies, information systems, and digital ethics. These indicators reveal the extent to which students are aware of the principles governing digital interaction and information management.

ISSN: 2053-3578 I.F. 12.34

Operational indicators focus on practical skills, such as the ability to use digital tools for academic tasks, collaborate online, and solve problems using digital resources. These indicators demonstrate students' readiness to apply digital competencies in real educational and professional contexts.

Value-based indicators assess ethical awareness, responsibility, and adherence to academic integrity in digital environments. This dimension is particularly important, as it reflects students' internalization of digital values rather than mere compliance with external rules.

Reflective indicators measure students' ability to critically evaluate their own digital behavior, identify areas for improvement, and adapt to new digital challenges. Reflection ensures the sustainability of digital culture beyond the formal educational process.

The pedagogical model for developing digital culture among bachelor students is based on the interaction of several interconnected components. At the core of the model lies the educational goal — the formation of a mature digital culture. Surrounding this core are the content, methodological, technological, and evaluative components.

The content component integrates digital culture topics into academic disciplines, ensuring interdisciplinary coherence. The methodological component includes active learning strategies, such as project-based learning and collaborative online activities. The technological component provides digital tools and platforms that support learning interactions. Finally, the evaluative component ensures continuous assessment and feedback.

This model functions dynamically, allowing for adaptation to changes in digital technologies and educational needs. Its flexibility makes it suitable for various academic fields and institutional contexts.

Discussion

The proposed pedagogical system highlights the importance of viewing digital culture as a strategic educational objective rather than an auxiliary outcome. The integration of digital culture into the information and educational environment transforms digital technologies from passive tools into active agents of educational development.

Compared to traditional approaches that emphasize technical skills alone, this system offers a holistic perspective by incorporating ethical, cognitive, and reflective dimensions. Such an approach aligns with global trends in higher education, where digital responsibility and critical thinking are increasingly prioritized.

However, the implementation of this system may face challenges, including resistance to pedagogical change, insufficient digital infrastructure, and varying levels of digital competence among instructors. Addressing these challenges requires institutional support, continuous professional development, and strategic planning.

Conclusion

The formation of digital culture among bachelor students is a pressing educational priority in the digital age. The information and educational environment of a university provides a powerful platform for achieving this goal, provided it is supported by a coherent pedagogical system.

This article has substantiated a pedagogical system for developing digital culture that integrates goals, content, methods, tools, and assessment within a unified framework. The system emphasizes not only digital skills but also ethical values, critical thinking, and reflective practice.

The implementation of such a pedagogical system contributes to the preparation of socially responsible, digitally competent graduates capable of effective participation in the digital society. Future research may focus on empirical validation of the proposed model and its adaptation to specific academic disciplines.

References

1. Gilster, P. (1997). *Digital Literacy*. New York: Wiley.
2. Ferrari, A. (2013). *DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe*. European Commission.
3. Redecker, C. (2017). *European Framework for the Digital Competence of Educators*. Luxembourg: Publications Office of the EU.
4. OECD. (2020). *Education in the Digital Age*. Paris: OECD Publishing.
5. Voogt, J., & Roblin, N. P. (2012). A comparative analysis of international frameworks for 21st century competences. *Journal of Curriculum Studies*, 44(3), 299–321.
6. Selwyn, N. (2016). *Education and Technology: Key Issues and Debates*. London: Bloomsbury.
7. UNESCO. (2018). *A Global Framework of Reference on Digital Literacy Skills*. Paris: UNESCO.