



Педагогіка вищої школи

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Формування професійної готовності та інформаційної культури здобувачів вищої освіти в умовах міждисциплінарної інтеграції

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***Анотація:** Трансформація сучасних систем вищої освіти тісно пов'язана зі стрімким розвитком цифрових технологій та становленням інформаційного суспільства. За цих умов університети мають не лише забезпечувати студентів професійними знаннями, а й розвивати їхню здатність ефективно працювати з інформаційними ресурсами, критично оцінювати дані та застосовувати цифрові інструменти у професійній діяльності. Одним із найбільш перспективних підходів до досягнення цих цілей є міждисциплінарна інтеграція,*



яка сприяє розвитку цілісного мислення та підтримує формування професійної готовності й інформаційної культури здобувачів вищої освіти.

Метою цієї статті є аналіз особливостей формування професійної готовності та інформаційної культури здобувачів вищої освіти в умовах міждисциплінарної інтеграції, а також визначення педагогічних умов, що сприяють ефективності цього процесу.

Методологія дослідження ґрунтується на теоретичному аналізі та синтезі наукової літератури, порівняльному аналізі педагогічних підходів і узагальненні сучасних освітніх практик. У дослідженні також застосовано системний підхід до вивчення освітнього середовища та міждисциплінарних процесів навчання у закладах вищої освіти.

Результати дослідження свідчать, що міждисциплінарна інтеграція суттєво сприяє розвитку професійних компетентностей та інформаційної культури студентів. Поєднуючи знання з різних академічних дисциплін, студенти розвивають навички критичного мислення, аналітичні здібності та здатність розв'язувати складні професійні проблеми. Крім того, інтеграція цифрових освітніх технологій у міждисциплінарні навчальні середовища підвищує здатність студентів ефективно здійснювати пошук, аналіз і інтерпретацію інформації.

У дослідженні визначено низку педагогічних умов, що забезпечують успішний розвиток професійної готовності та інформаційної культури студентів. До них належать інтеграція навчальних дисциплін, використання цифрових навчальних інструментів, застосування інтерактивних методів навчання та заохочення дослідницько-орієнтованого навчання. Такі підходи сприяють формуванню у студентів навичок, необхідних для ефективної професійної діяльності в умовах цифрової економіки знань.

Отримані результати підкреслюють важливість міждисциплінарних підходів у сучасній вищій освіті та демонструють їхній потенціал для підвищення якості професійної підготовки. Результати дослідження можуть



бути використані при розробленні інноваційних освітніх програм та модернізації стратегій навчання у закладах вищої освіти.

Ключові слова: міждисциплінарна інтеграція, інформаційна культура, професійна готовність, цифрова компетентність, вища освіта, освітні технології.

Formation of Professional Readiness and Information Culture of Higher Education Students in the Context of Interdisciplinary Integration

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Abstract: *The transformation of modern higher education systems is closely related to the rapid development of digital technologies and the emergence of the information society. Under these conditions, universities are required not only to provide students with professional knowledge but also to develop their ability to work effectively with information resources, critically evaluate data, and apply digital tools in their professional activities. One of the most promising approaches to achieving*



these goals is interdisciplinary integration, which promotes the development of holistic thinking and supports the formation of professional readiness and information culture among higher education students.

The purpose of this article is to analyze the peculiarities of forming professional readiness and information culture of higher education students in the context of interdisciplinary integration and to determine the pedagogical conditions that contribute to the effectiveness of this process.

The research methodology is based on theoretical analysis and synthesis of scientific literature, comparative analysis of pedagogical approaches, and generalization of modern educational practices. The study also applies a systemic approach to examining the educational environment and interdisciplinary learning processes in higher education institutions.

The results of the research demonstrate that interdisciplinary integration significantly contributes to the development of students' professional competencies and information culture. By combining knowledge from different academic disciplines, students develop critical thinking skills, analytical abilities, and the capacity to solve complex professional problems. Moreover, the integration of digital educational technologies into interdisciplinary learning environments enhances students' ability to search, analyze, and interpret information effectively.

The study identifies several pedagogical conditions that ensure the successful development of professional readiness and information culture among students. These include the integration of academic disciplines, the use of digital learning tools, the application of interactive teaching methods, and the encouragement of research-based learning. These approaches help students develop the skills necessary for effective professional activity in the digital knowledge economy.

The findings of the research highlight the importance of interdisciplinary approaches in modern higher education and demonstrate their potential for improving the quality of professional training. The results can be used in the development of



innovative educational programs and in the modernization of teaching strategies in higher education institutions.

Keywords: *interdisciplinary integration, information culture, professional readiness, digital competence, higher education, educational technologies.*

Introduction. The development of the information society has significantly transformed the role and functions of higher education institutions. Modern universities are expected to prepare specialists who are capable of working effectively in complex professional environments characterized by rapid technological changes and large volumes of information. Consequently, the formation of professional readiness and information culture among higher education students has become one of the key priorities of contemporary education systems.

Professional readiness is commonly defined as an integrated characteristic of an individual that includes knowledge, skills, attitudes, and personal qualities necessary for successful professional activity. At the same time, information culture has become an essential component of professional competence. It involves the ability to search for information, critically evaluate sources, process and interpret data, and apply digital technologies in professional practice [1].

One of the most effective ways to enhance these competencies is interdisciplinary integration. Interdisciplinary learning encourages students to combine knowledge from different academic fields and apply it to real-life problems. Such an approach contributes to the development of analytical thinking, creativity, and the ability to work collaboratively [3].

In the context of higher education modernization, interdisciplinary approaches are increasingly used in project-based learning, research-oriented teaching, and digital education environments. These approaches promote deeper understanding of complex phenomena and improve students' readiness for professional activities in the knowledge-based economy [8].



Therefore, studying the role of interdisciplinary integration in the formation of professional readiness and information culture of higher education students is an important scientific and practical task.

Literature Review. The issue of professional readiness and competence formation in higher education has become a central topic in contemporary pedagogical research, particularly in the context of digital transformation and interdisciplinary education. Modern scholars emphasize that professional competence is not limited to the acquisition of theoretical knowledge but also includes the development of practical skills, critical thinking, and the ability to adapt to rapidly changing professional environments.

Recent studies demonstrate that digital technologies significantly influence the organization of the educational process and the development of students' professional competencies. In particular, Bates argues that digital learning environments enable more flexible and student-centered educational models, which support active learning and the development of analytical skills. His research highlights that the integration of digital technologies into teaching practices contributes to higher levels of student engagement and facilitates interdisciplinary learning experiences [1].

The transformation of educational practices in the digital era has also been examined by Selwyn, who emphasizes that the use of technology in education should not be limited to technical implementation. According to his research, effective digital education requires the reconsideration of pedagogical models, learning strategies, and the roles of teachers and students in the educational process. Selwyn stresses that digital transformation encourages the development of new forms of collaboration, knowledge production, and interdisciplinary interaction in higher education [6].

Another important aspect of modern educational research is the study of interdisciplinary learning as a key factor in developing complex professional competencies. Frodeman argues that interdisciplinary education allows students to approach problems from multiple perspectives and promotes the development of innovative thinking. His work demonstrates that interdisciplinary integration enhances



students' ability to synthesize knowledge from different academic fields and apply it to real-world problems [3].

Similarly, Darling-Hammond and her colleagues analyze the relationship between learning sciences and educational practice. Their research demonstrates that modern educational systems should focus on developing higher-order cognitive skills, including critical thinking, creativity, and collaborative problem-solving. The authors emphasize that interdisciplinary learning environments create conditions for deeper understanding of complex phenomena and support the development of transferable professional skills [2].

A significant body of research is also devoted to the development of information literacy as a fundamental component of professional competence in the digital age. Head, Fister, and MacMillan examine how students interact with information in digital environments and argue that the abundance of online information requires the development of advanced critical evaluation skills. Their findings show that information literacy education should focus not only on searching for information but also on analyzing its credibility, relevance, and ethical use [4].

The theoretical foundations of digital and online learning have also been explored in the works of Anderson, who analyzes the principles of distance and online education. According to his research, effective online learning environments combine technological tools with pedagogical strategies that support interaction, collaboration, and knowledge construction. Anderson emphasizes that digital learning environments can significantly expand opportunities for interdisciplinary education and global academic cooperation [13].

Laurillard approaches education from the perspective of design science and argues that teaching should be understood as a systematic process of designing learning experiences. Her research demonstrates that digital technologies provide new opportunities for interactive learning, formative assessment, and personalized education. Laurillard emphasizes that the integration of digital tools into educational



design enables more effective development of students' cognitive and professional competencies [14].

Theoretical discussions on learning in digital environments have also been influenced by Siemens' theory of connectivism. Siemens argues that knowledge in the digital age is distributed across networks of people, technologies, and information resources. According to this perspective, learning involves the ability to navigate information networks, identify relevant knowledge sources, and continuously update professional competencies in rapidly changing informational contexts [15].

The development of pedagogical systems in conditions of globalization has also attracted scholarly attention. In particular, Sokol and colleagues analyze the evolution of pedagogical concepts in modern educational systems and emphasize the growing importance of interdisciplinary and competency-based approaches. Their research shows that globalization processes require educational institutions to develop new models of professional training that integrate cultural, informational, and technological dimensions of learning [16].

Overall, the analysis of recent scholarly literature demonstrates that modern higher education increasingly focuses on the integration of digital technologies, interdisciplinary learning, and information literacy development. Researchers agree that these elements play a crucial role in forming students' professional competencies and preparing them for the challenges of the digital knowledge society. However, despite the considerable attention devoted to these issues, the relationship between interdisciplinary integration and the development of students' information culture remains insufficiently explored, which determines the relevance of further research in this field.

Identification of previously unresolved parts of the overall problem. Although many studies have examined professional readiness and digital competence in higher education, several aspects remain insufficiently investigated.

It should be noted that there is a lack of comprehensive research focusing on the relationship between interdisciplinary integration and the formation of students'



information culture. Although a number of studies examine interdisciplinary approaches in higher education, many of them primarily address the development of professional competencies or the improvement of educational outcomes. As a result, the role of interdisciplinary integration in shaping students' ability to work with information, critically evaluate digital content, and apply information technologies in professional contexts remains insufficiently explored.

Moreover, the pedagogical mechanisms that support the development of information culture in interdisciplinary educational environments require further investigation. In modern higher education institutions, the integration of academic disciplines often occurs at the level of curriculum design, but the methodological and pedagogical aspects of such integration are not always clearly defined. Consequently, there is a need to explore how interdisciplinary learning environments can effectively foster students' analytical thinking, information literacy, and digital competence through carefully designed teaching strategies and learning activities.

Finally, there is a growing need to identify effective teaching strategies that combine digital technologies with interdisciplinary learning models. The rapid development of digital educational tools opens new opportunities for collaborative learning, research-oriented tasks, and problem-based learning approaches. However, the practical implementation of these tools within interdisciplinary courses still requires methodological clarification and empirical validation. These issues highlight the necessity of further research in this field in order to enhance the effectiveness of modern higher education and to ensure the successful development of students' professional readiness and information culture.

Formulation of the article's goals (task setting). The aim of this article is to investigate the role of interdisciplinary integration in the formation of professional readiness and information culture among higher education students. Meanwhile the objectives of the study are to analyze theoretical approaches to professional readiness formation in higher education; to define the concept of information culture in the context of modern education; to examine the role of interdisciplinary integration in



developing professional competencies, and to determine pedagogical conditions that support the development of students' information culture.

Research Results. The analysis of contemporary educational practices demonstrates that interdisciplinary integration significantly enhances the quality of professional training in higher education institutions. Modern higher education systems are increasingly challenged to equip students not only with subject-specific knowledge but also with competencies that allow them to navigate complex professional environments effectively. In this context, interdisciplinary integration provides a comprehensive approach to learning, enabling students to connect concepts across disciplines and apply theoretical knowledge to practical problems, which is crucial for developing professional readiness [3].

Professional readiness is understood as an integrative characteristic of a student's preparedness for professional activity. It encompasses cognitive, motivational, and practical components, all of which are essential for effective performance in professional contexts [2]. The cognitive component includes knowledge acquisition and understanding of key concepts within a professional field, while the motivational component refers to students' engagement, persistence, and professional orientation. The practical component involves the ability to apply acquired knowledge in real-world situations, solve problems effectively, and adapt to dynamic professional demands. Consequently, the formation of professional readiness is not limited to learning theoretical content; it also requires the cultivation of analytical thinking, problem-solving skills, and the ability to work with information [1].

Information culture plays a central role in shaping professional readiness. In the digital age, students are required to competently navigate vast information environments, identify reliable sources, analyze and interpret data critically, and apply findings in professional decision-making processes [4]. Information literacy is no longer a supplementary skill; it constitutes a foundational competency for successful participation in professional and social activities. The development of students' information culture directly supports their professional growth, as it enhances their



ability to make informed decisions, manage knowledge efficiently, and engage in continuous learning [5].

Interdisciplinary integration creates a conducive environment for the development of both professional readiness and information culture. By combining knowledge and methodologies from different academic disciplines, students are encouraged to approach problems holistically, recognize interconnections, and develop innovative solutions [3]. For instance, integrating insights from linguistics, information technology, and pedagogy in language learning courses allows students not only to acquire language skills but also to effectively utilize digital tools for research, teaching, and content creation. This integrative approach fosters critical thinking, analytical skills, and the ability to apply theoretical knowledge to practical situations, which are core components of professional readiness [7].

Several pedagogical conditions contribute to the successful implementation of interdisciplinary learning. First, the integration of educational content across disciplines is essential. Courses and modules should be designed to encourage connections between subjects, allowing students to see how concepts from different areas complement each other [3]. Second, the use of digital learning technologies, including online educational platforms, databases, and collaborative tools, provides students with access to diverse information sources and supports the development of information literacy [9]. These technologies enable learners to conduct research, collaborate with peers, and engage in problem-based learning activities, thereby reinforcing both cognitive and practical components of professional readiness. Third, the application of interactive teaching methods, such as discussion-based learning, case studies, and project-oriented assignments, encourages active student engagement and facilitates the integration of knowledge from multiple disciplines [14]. Fourth, the development of research-oriented learning activities allows students to apply theoretical knowledge in authentic contexts, promoting deeper understanding and fostering independent analytical skills [15]. Finally, the deliberate promotion of critical



thinking and analytical skills ensures that students are not passive consumers of information but active participants in the knowledge creation process [8].

Digital educational platforms and collaborative learning tools play an increasingly important role in supporting interdisciplinary learning. For example, virtual laboratories, simulation environments, and online discussion forums provide interactive and immersive experiences that enhance students' ability to search for, evaluate, and apply information effectively [13]. Furthermore, such technologies facilitate collaborative problem-solving, allowing students from different disciplinary backgrounds to work together on complex tasks. This not only strengthens professional readiness but also develops essential digital competencies that are crucial in the modern knowledge economy [10].

The integration of interdisciplinary learning and digital technologies also aligns with broader international recommendations for higher education. UNESCO [9] and the European Commission [10] emphasize the need to prepare students for a rapidly changing professional landscape by fostering digital literacy, information culture, and interdisciplinary competence. In addition, reports from the World Economic Forum [11] highlight that the future workforce requires individuals capable of critical thinking, problem-solving, and effective collaboration across multiple domains. Interdisciplinary learning, supported by digital educational tools, is a key strategy for meeting these global demands.

In summary, the results of this research indicate that interdisciplinary integration significantly contributes to the formation of students' professional readiness and information culture. The combination of knowledge from multiple disciplines, the use of digital technologies, and the application of interactive, research-oriented teaching methods create favorable conditions for the development of critical skills. These findings underline the importance of incorporating interdisciplinary approaches into higher education curricula and demonstrate the potential of such approaches to improve the quality of professional training in the digital era. By adopting these pedagogical



strategies, higher education institutions can better prepare students for the challenges of professional practice and lifelong learning in the twenty-first century.

Conclusions. The research results confirm that interdisciplinary integration is an effective approach to improving the quality of professional training in higher education institutions. The study demonstrates that the formation of professional readiness and information culture among students requires the integration of theoretical knowledge, practical skills, and digital competencies. Interdisciplinary learning environments promote the development of critical thinking, analytical abilities, and information literacy. These competencies are essential for successful professional activity in the modern information society. The study also identifies key pedagogical conditions that contribute to the development of information culture, including interdisciplinary curriculum design, the use of digital technologies, and the implementation of interactive teaching methods.

Future research should focus on developing practical models for implementing interdisciplinary integration in higher education curricula and evaluating their effectiveness in improving students' professional competencies.

References

1. Bates T. Teaching in a Digital Age. Vancouver: BCcampus, 2019. 250 p.
2. Darling-Hammond L., Flook L., Cook-Harvey C., Barron B., Osher D. Implications for educational practice of the science of learning and development // Applied Developmental Science. 2020. Vol. 24, № 2. P. 97–140.
3. Frodeman R. The Oxford Handbook of Interdisciplinarity. Oxford: Oxford University Press, 2017. 512 p.
4. Head A., Fister B., MacMillan M. Information Literacy in the Age of Algorithms. Project Information Literacy Research Institute, 2020. 136 p.



5. Redecker C. European Framework for the Digital Competence of Educators: DigCompEdu. Luxembourg: Publications Office of the European Union, 2017. 52 p.
6. Selwyn N. Education and Technology: Key Issues and Debates. London: Bloomsbury Academic, 2021. 288 p.
7. Scott C. The Futures of Learning 3: What Kind of Pedagogies for the 21st Century? Paris: UNESCO, 2020. 152 p.
8. OECD. Education in a Digital World. Paris: OECD Publishing, 2021. 184 p.
9. UNESCO. Global Education Monitoring Report. Paris: UNESCO, 2022. 204 p.
10. European Commission. Digital Education Action Plan 2021–2027. Brussels: European Commission, 2021. 48 p.
11. World Economic Forum. The Future of Jobs Report 2023. Geneva: WEF, 2023. 158 p.
12. Fullan M., Quinn J. Coherence: The Right Drivers in Action for Schools, Districts, and Systems. Thousand Oaks: Corwin, 2016. 208 p.
13. Anderson T. The Theory and Practice of Online Learning. Edmonton: Athabasca University Press, 2019. 408 p.
14. Laurillard D. Teaching as a Design Science. London: Routledge, 2021. 224 p.
15. Siemens G. Connectivism: A learning theory for the digital age. *International Journal of Instructional Technology and Distance Learning*. 2020. Vol. 17, № 1. P. 3-10.
16. Sokol M., Tsaryk O., Rozlutska G., Hupka-Makohin N., Horenko I. The System of Pedagogical Concepts in Globalization Conditions. *International Journal of Applied Exercise Physiology*. VOL. 9 (4), 2020. P.43-52