

DOI: <https://doi.org/10.46502/issn.1856-7576/2024.18.01.8>

Cómo citar:

Blinovska, R., Kudria, O., Yitong, L., Chalii, L., & Verbivskiy, D. (2024). Innovative approaches in higher education in Ukraine: Trends and prospects. *Revista Eduweb*, 18(1), 109-123. <https://doi.org/10.46502/issn.1856-7576/2024.18.01.8>

Innovative approaches in higher education in Ukraine: Trends and prospects

Enfoques innovadores en la educación superior en Ucrania: Tendencias y perspectivas

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Recibido: 01/01/24

Aceptado: 02/02/24

Abstract

Innovative approaches in higher education in Ukraine are crucial to address changing global education dynamics, technological advancements, and evolving workforce needs. The primary aim is to assess the significance of innovation in shaping the educational experience and teaching methodologies. The research employs a mixed-methods approach, combining surveys and in-depth interviews with educators across various disciplines. The collected data from 125 participants provide insights into their perspectives on the importance of innovation. The results indicate a growing interest in innovative methods among educators and students, highlighting a desire for continuous improvement in the learning process. Challenges related to the implementation of innovative approaches are identified, including technological barriers, limited resources, and resistance from within the academic community. In conclusion, while innovation remains a crucial component for advancing higher education in Ukraine, strategic planning and targeted support are essential for successful implementation. The study underscores the need for enhanced international collaboration, a focus on overcoming identified challenges, and the development of a comprehensive support system for educators. These findings contribute to the ongoing discourse on the evolution of higher education in Ukraine and offer insights for policymakers, administrators, and educators seeking to foster a dynamic and effective learning environment.

Keywords: educational transformation, digital learning landscape, digitalization, innovations, technologies.



Resumen

Los enfoques innovadores en la educación superior en Ucrania son cruciales para abordar la dinámica educativa global cambiante, los avances tecnológicos y las necesidades cambiantes de la fuerza laboral. El objetivo principal es evaluar la importancia de la innovación en la configuración de la experiencia educativa y las metodologías de enseñanza. La investigación emplea un enfoque de métodos mixtos, combinando encuestas y entrevistas en profundidad con educadores de diversas disciplinas. Los datos recopilados de 125 participantes proporcionan información sobre sus perspectivas sobre la importancia de la innovación. Los resultados indican un creciente interés por los métodos innovadores entre educadores y estudiantes, destacando el deseo de mejora continua en el proceso de aprendizaje. Se identifican los desafíos relacionados con la implementación de enfoques innovadores, incluidas las barreras tecnológicas, los recursos limitados y la resistencia dentro de la comunidad académica. En conclusión, si bien la innovación sigue siendo un componente crucial para el avance de la educación superior en Ucrania, la planificación estratégica y el apoyo específico son esenciales para una implementación exitosa. El estudio subraya la necesidad de mejorar la colaboración internacional, centrarse en superar los desafíos identificados y desarrollar un sistema de apoyo integral para los educadores. Estos hallazgos contribuyen al discurso actual sobre la evolución de la educación superior en Ucrania y ofrecen ideas para los formuladores de políticas, administradores y educadores que buscan fomentar un entorno de aprendizaje dinámico y eficaz.

Palabras clave: transformación educativa, panorama del aprendizaje digital, digitalización, innovaciones, tecnologías.

1. Introduction

In the contemporary era, marked by constant technological progress, higher education emerges as a fundamental pillar for social development and national success. In Ukraine, a country striving to improve its educational standards, innovation in higher education takes on crucial relevance. Beyond being a mere vehicle for knowledge transfer, higher education plays a vital role in promoting creativity, innovation and training professionals prepared to face the challenges of the future (Behera & Karmakar, 2022; Onischuk, 2021).

This article addresses the need to explore innovations in Ukrainian higher education, examining in detail the approaches, methods and trends that shape the country's educational landscape. Through a comprehensive literature review, a critical gap in research is identified that analyzes specific innovative approaches, their implementation, and their impacts on the educational environment and future prospects. The study aims to answer the following research question: What are the key innovative approaches, methods and trends currently used in the Ukrainian higher education system and how do these strategies contribute to the development of a dynamic, competitive and educational environment? adaptable?

To address this question, previous research by scholars such as Krymets (2022) and Iskakova (2023) is examined, providing a solid foundation for understanding the Ukrainian educational landscape. The existing literature highlights the importance of higher education as a catalyst for societal development and the formation of a skilled workforce (Alvi, 2021). However, the need for more comprehensive research is identified that comprehensively analyzes innovative approaches and their implications.

In this context, this article is structured as follows: the literature review, the methodology, the results and discussion and findings.

2. Theoretical framework and literature review

Innovation is the implementation of innovative ideas, technologies, methods, or approaches with the aim of improving and changing existing processes, products, or services. They have become crucial elements

in various spheres of modern society. Innovations in education may involve the integration of electronic technologies, changes in curricula, the development of new teaching and assessment methods (Cheung et al., 2019). The use of innovative approaches in higher education contributes to the creation of flexible, adaptive, and interactive learning environments, fostering the development of students' creativity and critical thinking. Thus, one of the key characteristics of innovation in education is the enhancement of accessibility and flexibility of learning for various student categories (Alvi, 2021). For the other hand, Kang & Lee (2020) described designing technology as important instrument of current education and usage of computational thinking.

Contemporary researchers have demonstrated that the implementation of innovations in the educational process may encompass changes in lecture formats, the use of electronic platforms for learning, and other technological solutions. Innovations in education may also involve the creation of interactive online courses, the use of virtual reality, and other advanced communication tools (Dzhym et al., 2023). Overall, it has been proven that innovative approaches contribute to the development of students' independence, their ability for self-improvement, and independent work on materials. Thus, innovations in education not only enhance the quality of learning but also promote a creative approach to solving challenges and issues in contemporary society.

This article by Alencar, E. S. d., Cunha, A. C. d., Figueiredo, T. D., & Miola, A. F. d. S. (2019) delves into the nexus of teaching and learning with educational technologies. The focus is on the innovative use of technology in educational contexts, particularly in the realm of mathematical education. While the precise details of the content aren't explicitly mentioned, the source appears to provide foundational insights into the incorporation of technology in pedagogical practices. Engel et al., (2016) focused on centrally assisted collaborative telecare as a means of addressing posttraumatic stress disorder (PTSD) and depression among military personnel attending primary care. The research underscores the importance of leveraging telecare and collaborative approaches to address mental health challenges in specific populations, showcasing the potential of technology in healthcare contexts. The work by Guimarães & Leal (2022) explores the role of technologies in innovative pedagogical practices in the teaching of history. The article sheds light on the multifaceted educational aspects impacted by technology, emphasizing its role in transforming history education. It contributes to the broader discourse on integrating technology to enhance pedagogical strategies in specific academic domains. Silva, F. S., Santos, L. C. d. S., Pinto, I. M. B. S., Uchôa, S. B. B., & Balliano, T. L. (2019) investigates educational technologies. The work likely explores future trends and developments in the realm of educational technologies, providing a forward-looking perspective. It contributes to the understanding of how technology might shape the future of education. Swaffield & Thomas (2016) offers a comprehensive overview of educational assessment in Latin America. While the exact connection to technology is not explicitly stated, the broader context suggests a potential exploration of the role of technology in educational assessment practices in the Latin American context.

Accordingly, studying the features of integrating innovations into education is a relevant issue for contemporary scholars. In particular, Iskakova (2023) examined the features of applying electronic technologies to facilitate individualized learning for individuals with special needs. Overall, this work defines how technologies can contribute to the creation of an inclusive educational environment. Boichenko M., Kozlova T., Kulichenko A., Shramko R., & Polyezhayev, Y. (2022) described the features of developing creative activity in Ukrainian higher educational institutions. This work explores the role of creative efforts in academic conditions, providing insights into fostering innovation and creativity. Yuhan (2017) described the use of multimedia technologies in teaching philology. Yuhan (2017) also studied specific pedagogical approaches and strategies to enhance language learning using multimedia. The work of Kozlova & Polyezhayev (2022) is dedicated to cognitive-pragmatic research on phraseology, contributing to interdisciplinary understanding of language and cognition, providing insights into how certain language teaching approaches are used in interdisciplinary discourse. Behera & Karmakar (2022) critically reviewed the development of cultural diversity through global digitalization, with a special focus on its impact on

education. The authors discussed opportunities arising from digital technologies in preserving and supporting cultural diversity. Herrera-Ligero C., Chaler J., & Bermejo-Bosch I. (2022) described the possibilities of digital technologies in the education enhancement system in the field of rehabilitation. Also, Hosseini S., Peluffo D. H., Nganji J., & Arrona-Palacios A. (2022) identified the role of digital technologies in higher education. Meanwhile, Lazko & Tomashevskaya (2023) identified key trends in music education in the context of higher education and digitalization. Specifically, the authors drew attention to the role of digital technologies in shaping educational reforms in Ukraine. Onischuk (2021) described the main innovations in the education of judges in Ukraine and outlined a strategy for their development. The author also detailed the implementation of new approaches, technologies, and methodologies to improve education in Ukraine. Thus, the problem of using innovative technologies is popular among Ukrainian scientists; however, it is necessary to approach this issue comprehensively and thoroughly characterize the main innovative approaches implemented and used in the higher education system in Ukraine.

3. Methodology

Research Design

This study employs a mixed-methods approach, incorporating both quantitative and qualitative methods, to ensure a comprehensive understanding of innovative approaches in higher education in Ukraine.

Intersectional Design: The research gathers data at a single point in time to encompass the current landscape of innovative practices.

Participants and Sampling Procedure

Sample size: the primary participants of this study are 125 teachers of higher educational institutions of Ukraine. They have different levels of experience in applying innovative methods and approaches in the education system

Inclusion Criteria

1. Participants must be actively employed instructors in higher education institutions in Ukraine.
2. Teachers from different disciplines, including humanities, natural sciences, social sciences, and technology, to ensure diverse representation.
3. Teachers of different ranks (e.g., assistants, associates, and professors), considering that educators at different stages of their careers may bring diverse perspectives.
4. Inclusion is based on voluntary participation in the survey.

Sample Procedure

The study employs a stratified random sampling approach. Stratification is based on the academic ranks of teachers, ensuring proportional representation from each academic rank to avoid bias. Simultaneously, disciplinary stratification is used to ensure representation from various academic disciplines, reflecting the diversity of higher education. Within each stratum, participants are randomly selected to eliminate selection bias. Randomization is implemented using a computer-generated random sequence of numbers to ensure an unbiased selection process.

Recruitment involves reaching out to potential participants through official channels of selected educational institutions. Potential participants receive an email invitation containing information about the research, its purpose, and the voluntary nature of participation. Informed consent is a crucial element, providing detailed information about the research and its goals before participants decide to join. Once informed consent is

obtained, emphasizing voluntary participation and confidentiality guarantees, participants are enrolled in the study.

Data Collection (Quantitative Data)

The survey questionnaire has been developed based on a thorough review of relevant literature and consultations with experts in the field. The questions are structured to gather information on teaching methods, technology integration, and attitudes towards innovation.

Data Collection (Qualitative Data)

Literature Content Analysis

Relevant scientific literature, including scholarly articles, conference papers, and comprehensive monographs, has been thematically analyzed. The content analysis focuses on outlining new trends, challenges, and perspectives of innovative approaches. The literature was selected based on clear criteria.

1. Relevance. The literature should demonstrate direct relevance to the current state of innovative approaches in higher education in Ukraine, addressing contemporary issues and trends.
2. Alignment with the topic. The literature must specifically address innovative approaches in higher education in Ukraine, providing insights into trends and prospects within this context.
3. Language. The literature should be available in Portuguese, English, or Ukrainian, ensuring accessibility to a wider audience and facilitating comprehension for researchers and practitioners in these languages.
4. Publication date. Preferential consideration should be given to literature published within a relevant timeframe, ensuring the information is current and reflective of recent developments in higher education in Ukraine.
5. Academic rigor. Selected literature should demonstrate academic rigor, employing sound methodologies and scholarly analysis to support its findings and conclusions.
6. Authoritativeness of Sources. The literature should be sourced from reputable academic journals, books, or recognized institutions in the field of higher education, enhancing the credibility of the information presented.

By applying these criteria, we ensured a well-rounded selection of literature that is both relevant to the current discourse on innovative approaches in higher education in Ukraine and accessible to a diverse audience through different languages.

Data Analysis

In this study, we employ an integrated approach by combining quantitative and qualitative methods to achieve a comprehensive understanding of the current landscape of innovative approaches in higher education in Ukraine. Our methodology involves a meticulous comparative analysis to discern potential convergences or divergences between teachers' practices (quantitative data) and the overarching educational discourse (qualitative insights).

Quantitative Analysis

For the quantitative aspect, data collection revolves around structured surveys and assessments distributed among a representative sample of educators. Tools such as Microsoft Excel are utilized for robust quantitative analysis.

Qualitative Analysis

In tandem, a qualitative investigation is conducted through in-depth interviews, focus group discussions, and content analysis of relevant educational documents. Thematic analysis is applied to extract key qualitative insights, providing a nuanced perspective on the broader educational discourse surrounding innovative approaches.

Integration of Results

The quantitative and qualitative findings are integrated through a triangulation process, enhancing the validity and reliability of the overall results. The comparative analysis aims to reveal any alignment or disparity between the quantitative data reflecting teachers' practices and the qualitative insights derived from the educational discourse.

Software and analysis tools

To address the concern raised, it is pertinent to note that all quantitative data are meticulously analyzed using Exel. This software ensures accuracy, efficiency, and transparency in the processing and interpretation of quantitative results. Additionally, Exel may be utilized for qualitative data analysis, providing a robust foundation for drawing meaningful conclusions.

In essence, this methodological framework guarantees a thorough examination of innovative approaches in higher education in Ukraine, incorporating both quantitative and qualitative dimensions and employing cutting-edge tools for meticulous analysis.

Ethical Considerations

1. **Anonymity and Confidentiality:** Participants are assured that their responses will remain confidential, and no identifying information will be disclosed. Any collected demographic data is kept anonymous to preserve confidentiality.
2. **Voluntary Participation:** Participants are informed that their participation is entirely voluntary, and they have the right to withdraw from the study at any stage without consequences.

4. Results and discussion

The preparation of specialists in the innovative higher education system of Ukraine operates within the organic unity of the general, specific, and individual domains. In the context of the general, it reflects the regularities of higher education acquisition and is an essential part of the defined system. As the specific, it has its characteristics determined by the specifics of future professional innovative activities. As the individual, it anticipates the dependence of preparation on individual traits, knowledge levels, interests, and inclinations. The core idea revolves around a systematic approach based on the synthesis of continuous professional education and the principles of the individual development of a teacher capable of professional innovative activities. The professional-pedagogical component of pedagogical education aims to unfold the individual characteristics of the student for the purpose of their professional self-development. The diversity of education, freedom in choosing its content and forms, is a crucial condition for its humanization (Krymets, 2022). Thus, the preparation of modern specialists in Ukrainian programs is geared towards developing the capacity for innovative activities, mastering information technologies, and effective communication (interaction with a team and various categories of students), which defines the fundamental innovations (Herrera-Ligero et al., 2022). Therefore, innovative approaches in the higher education system of Ukraine involve the application of creative and advanced methods to enhance teaching, learning, research, and overall institutional effectiveness. These approaches are aimed at adapting education to the changing needs

of students, industry, and society. Modern Ukrainian educators who participated in the survey demonstrated a high level of familiarity with the use of innovative approaches in higher education in Ukraine. In particular, when asked, “How familiar are you with innovative approaches in higher education?” 59.2% (or 74 respondents) indicated that they are “very familiar”, while 38.4% (or 48 respondents) acknowledged that they are “somewhat familiar”. Only 2.4% or 3 respondents indicated that they are not familiar at all with innovative approaches (See Figure 1).

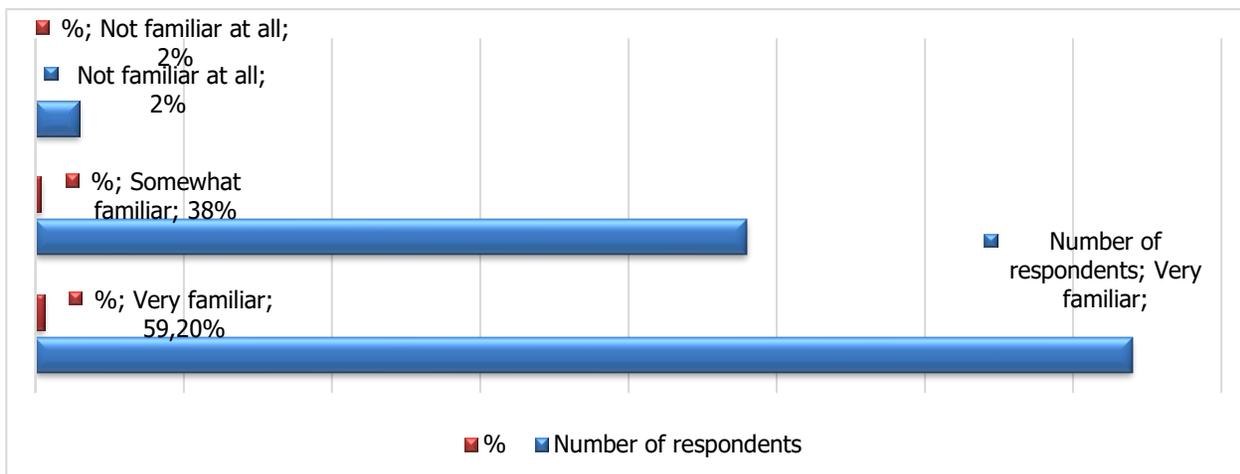


Figure 1. Diagram of familiarization of teachers with innovative approaches.
Source: author’s development

Based on the survey, Ukrainian teachers employ various innovative approaches in their professional activities. The survey data indicate the level of utilization of different innovative approaches in higher education among the participants. Specifically, technology integration is the most widely used innovative approach, emphasized by 88% of the respondents. This indicates a high level of technological literacy among the survey participants. Project-based learning and competency-based education also have a high level of utilization (79.2% and 62.4%, respectively).

It should be noted that project technologies relieve a certain psychological tension, since the relationship between the student and the teacher (subjective relations) becomes electronic resource (objective relations). Project work is a valuable way of real use of communication skills acquired in the auditorium. Unlike traditional language learning, where all tasks are prepared by the teacher, project the work places responsibility for their own learning on the students themselves. Projects motivate, stimulate, empower and enthuse, which contributes students' confidence, self-respect and independence, as well as improving students' speaking skills, deepening knowledge of the subject and developing cognitive abilities. Project technologies are integrated into skill-oriented is the thematic block introduced as a separate sequence of types of work with a more traditional approach. It requires multi-stage development to achieve success. This suggests that many participants value practical experience and the development of specific skills. Education for sustainable development is also noted for its high level of usage, reflecting a growing attention to sustainability issues in educational programs (79.2%) (See Table 1).

Table 1.*Utilization of innovative approaches in higher education in Ukraine*

Approach	Number of respondents	%
Technology integration	110	88%
Active learning	87	69.6%
Project training	99	79.2%
Flexible educational program	76	60.8%
Competency-based education	78	62.4%
Data analytics and analytical learning	88	70.4%
Global and cross-cultural experience	45	36%
Education for sustainable development	99	79.2%
Gamification	76	60.8%

Source: author's development.

Overall, the data indicates the diversity of approaches in higher education in Ukraine and a certain level of acceptance of innovations in the educational process. Although the flexible approach to educational programs is utilized to a lesser extent, it still receives significant attention, suggesting a demand for flexible learning programs. Global and intercultural experience is less popular among survey participants, indicating a less developed interaction with international aspects of higher education. Nevertheless, a crucial aspect is the effective integration of modern technologies, promoting the development of digital literacy in students and making the learning process more engaging and convenient for education seekers. A detailed description of these innovative approaches is presented in Table 2.

Table 2.*Innovative approaches*

Approach	Explanation
Technology integration	<i>Online and blended learning.</i> Using digital platforms to deliver the course, including fully online programs and blended learning models that combine online and traditional face-to-face learning. <i>Virtual Reality (VR) and Augmented Reality (AR).</i> Integrating immersive technologies to create engaging learning experiences, simulations and virtual labs.
Active Learning	Flipped Classroom. Taking traditional lecture content outside the classroom, allowing classroom time for interactive discussion, problem solving, and concept application. <i>Problem-based learning.</i> focusing on real-world problems and encouraging students to solve them together, developing critical thinking and problem-solving skills.
Project-based learning	Assignment of projects that require students to apply theoretical knowledge to real-world scenarios, promoting collaboration, creativity and the development of practical skills.
Flexible Curriculum	Offering flexible degree pathways that allow students to tailor their academic experience based on their interests, goals and career aspirations.
Competency-based education	Assessment of students based on demonstrated mastery of specific skills or competencies. Emphasis on the development of students' practical skills and competencies.
Data Analytics and Learning Analytics	Using data-driven information to monitor and improve student performance, identify areas for improvement, and personalize the learning experience.
Global and Cross-Cultural Experiences	Fostering international collaborations, exchange programs, and study abroad opportunities to expose students to diverse perspectives and cultures.
Sustainable Development Education	Integrating the principles of sustainable development into the curriculum to prepare students to solve global problems and promote environmental stewardship.
Gamification	The use of gamification elements in education can stimulate the interest and motivation of students. Rewards, levels, game challenges and competition can make the learning process more exciting.

Source: author's development.

These innovative approaches are not mutually exclusive and, in practical terms, can be combined to create a dynamic and adaptive higher education environment that prepares students for success in a rapidly changing world.

According to the results of the survey on the importance of innovative approaches for improving the experience of teaching and learning in higher education, the majority of respondents (43 people - 34.4%) consider innovative approaches to be important or even extremely important for improving the experience of teaching and learning in higher education. The importance of this issue was also recognized by 70 people (56%). 10 people have a neutral attitude, and only 2 people believe that innovative approaches are not important (See Figure 2).

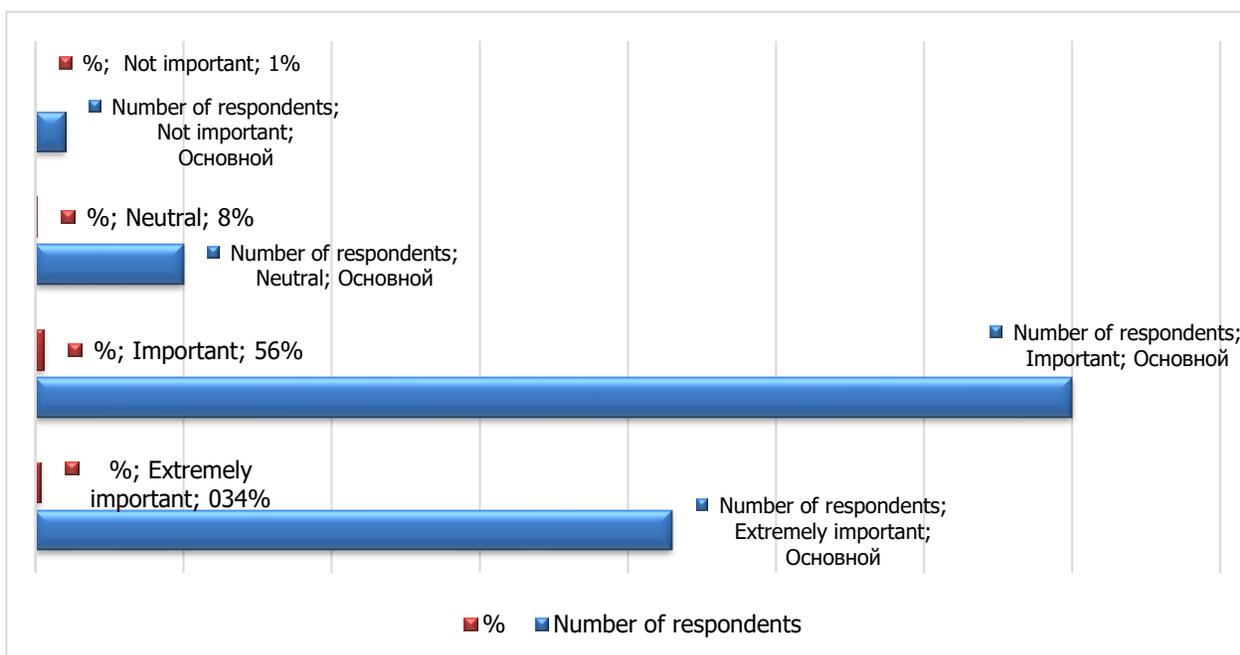


Figure 2. Respondents' attitude to the importance of using innovative technologies

Source: author's development.

Based on the survey, it is also determined that the implementation of innovative approaches in higher education can have a positive impact on student engagement and improvement in learning outcomes from several perspectives. Firstly, there is the issue of student engagement. The majority of teachers noted (56%) that innovative approaches allow for the creation of educational content that is interesting and understandable for students. Thus, the use of cutting-edge technologies, from interactive virtual lessons to virtual reality, can make learning more attractive. On the other hand, adaptation to individual needs is crucial. Innovative approaches enable personalized learning processes, considering the individual needs and learning styles of each student (62.4%). Adaptive platforms and programs can provide students the opportunity to learn at their own pace and choose topics of interest. At the same time, 79.2% of respondents pointed out that the use of innovative tools, such as discussion forums, video conferences, and collaborative online learning, stimulates active student participation and develops collaboration skills. Meanwhile, modern researchers argue that the effective use of innovative approaches can influence the improvement of learning outcomes. Contemporary educators identified that they have participated in courses to enhance their digital competencies (33.6%). Additionally, others emphasized the significant role of international internships in the implementation of innovative approaches, contributing to the exchange

of experiences with colleagues, participation in practical-scientific conferences, and professional development courses.

They also contribute to interactivity and practice. In particular, the use of innovative methods, such as virtual laboratories or simulations, can facilitate a deeper understanding of the subject and enhance the practical skills of students. Overall, innovative approaches can not only make learning more interesting but also enhance the effectiveness of the educational process, expanding opportunities for the development of creativity, critical thinking, and practical skills of students.

However, it is essential to consider that integrating innovations into the teaching process can be a challenging task for modern educators. Overall, out of 125 teacher responses, certain difficulties were identified during the integration of innovative approaches into teaching (See Table 3).

Table 3.
Challenges of implementation and utilization of innovations

Challenges	Explanation
Technological challenges	In 108 responses (86.4%), it is indicated that educators face difficulties in mastering new technologies, especially when they lack sufficient training or support.
Lack of access to necessary resources	In 95 responses (76%), the absence of required technical and financial resources is mentioned as complicating the integration of innovations.
Resistance from the teaching staff	According to 72 responses (57.6%), there is resistance from other educators who are concerned about potential changes in their work.
Lack of time	89 responses (71.2%) pointed out a perceived lack of time to learn new methods and technologies.
Inequality of conditions	54 responses (43.2%) highlighted differences in working conditions that affect the effectiveness of integration.
Lack of support and training	40 responses (28%) mentioned the absence of support from the administration and insufficient training opportunities.
Uncertainty of results	42 responses (33.6%) indicated uncertainty about the results and effectiveness of innovative methods.
Ethical and privacy issues	In 28 responses (22.4%), concerns about ethics and privacy arise when using advanced technologies.

Source: author's development.

These responses underscore the myriad challenges that educators encounter when endeavoring to incorporate innovative practices into their pedagogical methods. Recognizing these difficulties is pivotal, and there is a pressing need to proactively cultivate support systems and resources for teachers, thereby facilitating their seamless adaptation to novel methodologies and technologies. In light of the distinct challenges faced by teachers in implementing innovative approaches in higher education, several promising avenues for their advancement can be identified:

1. *Technological training and education*

Introduce mandatory training courses and seminars focused on enhancing proficiency in utilizing modern technologies in education. Develop online resources and self-study support to ensure educators have continuous access to information and the latest methods.

2. *Provision of financial support*

Establish financing systems that allocate funds for acquiring technical equipment and software. Forge partnerships with companies and foundations to secure grants or subsidies.

3. Development of support programs

Form specialized teams or expert groups offering guidance and assistance to teachers. Conduct regular training sessions and webinars on the implementation of new methods, with ongoing monitoring of their success. Establish teacher support centers at each school or district level, providing personalized support and resources.

4. Stimulation of team cooperation

Organize weekly or monthly meetings where teachers can share experiences, collaborate on tasks, and form groups for joint implementation of innovations.

5. Creation of a flexible schedule

Consider the implementation of flexible working hours for teachers, allowing them to allocate time freely for learning new methods and enhancing their skills.

6. Facilitation of Communication and Interaction.

Develop a virtual platform for exchanging ideas, posting materials, and discussing issues related to the integration of innovations in higher education. Support teachers in creating virtual groups to discuss specific topics.

7. Facilitation of evaluation and results determination

Implement a reporting system enabling teachers to assess the effectiveness of new methods and gather data for continual improvement of the educational process.

These measures aim to foster a favourable environment for the successful integration of innovative approaches in higher education, tailored to the specific challenges and needs of the teaching staff. Active communication, ongoing professional development, and the exchange of experiences can mitigate resistance, ultimately enhancing the success of integrating innovations into pedagogical practice.

The obtained results confirm the idea that innovation is an essential component of the higher education system's development (Alam, 2021). The growing interest in innovative approaches in education indicates the necessity to adapt to modern challenges and implement advanced methods to enhance student learning and preparation (Sutherland, 2014). It is crucial to provide support and incentivize educators in the implementation of innovations, thereby contributing to the development of a high-quality and competitive higher education system in Ukraine. The results determined that the data obtained from the surveys indicate the diversity of approaches to higher education in Ukraine. The most popular is the integration of various technologies into the system of higher education. This is explained by the digitization trend, which is now actively spreading at all levels of education (Luan et al., 2020). Active learning also plays an important role in training future specialists. In particular, the use of the flipped room moves traditional lecture content out of the classroom, freeing up classroom time for interactive discussions, problem solving, and concept application. The topic of the use of artificial intelligence is particularly important among scholars who investigate various practical, educational and ethical aspects of the use of AI in education (Mohammed & Nell Watson, 2019; Renz et al., 2020).

One can agree with the statement of Lee & Lee (2021) that education for all age groups should prepare society for the future and contribute to individuals' self-realization. Additionally, the idea that education in the era of artificial intelligence (AI) poses both an exciting new challenge and a new opportunity is

supportable (Lee & Lee, 2021). New learning pathways are being developed, such as learning management systems based on digital textbooks, personalized learning through big data analysis, interaction technology with speech recognition and synthesis, and chatbot assistants utilizing natural language processing (NLP).

However, it is possible to disagree with the assertion that most artificial intelligence (AI) technologies have significant applications in education and educational policies, as many of these technologies may not be applicable in all educational domains or may require specific conditions for successful implementation (Lee & Lee, 2021). Questions may also be raised about how effective predictive analysis technologies using AI are in providing proper support to students with problems. For instance, these technologies might not always accurately identify students' needs or offer individualized recommendations, especially in higher education, where an individualized approach is a key element of success. In this context, we agree with Sukhonos, V. V., Harust, Y. V., & Shevtsov, Y. A. (2019) that it is important to consider the ethical aspects of using AI technologies in education and potential limitations in access to these technologies for all students. The obtained results also determined that the implementation of innovative approaches in higher education of Ukraine may face certain challenges and difficulties. This statement is also emphasized by many modern researchers (Rossikhin et al., 2020). However, the results of the study contradict the statement of Rossikhin V., Rossikhina H., Radchenko L., Marenych V., & Bilenko L. (2020) that in Ukraine, the digitization process lags behind the best global educational practices. It is important to take into account that not only in Ukraine, but almost everywhere, a number of circumstances can be found that indicate a narrow approach to understanding the prospects and possibilities of digitization of education. In addition, one should take into account significant problems in higher education, which the traditional system of many countries of the world today does not solve, in particular, limiting and averaging the intellectual development of the most gifted children.

To overcome these difficulties, it is necessary to actively interact with pedagogical teams, develop support and training for teachers, as well as use the experience of famous universities in the world to implement innovative approaches in a coordinated and successful manner in the Ukrainian higher education environment.

The obtained results also emphasized certain prospects for the development of the process of implementation of modern innovative approaches in the system of higher education. Effective technological training of teachers, provision of financial assistance, development of support programs, creation of a flexible schedule are particularly relevant. These aspects are also discussed in detail in modern literature (van Hoof et al., 2015; Serafín & Depešová, 2018).

This study correlates with the results of Serafín & Depešová (2018), which demonstrated that digital literacy is an important driver of the development of modern innovative education. The authors of this study support this statement, however, special attention should also be paid to the development of material and technical support. This aspect is not sufficiently covered in this work, however, this issue is described in more detail in other modern works (Silva & Janes, 2023). In general, this work is notable for its novelty through an in-depth analysis of innovations in higher education, a practical approach to studying and providing recommendations for improving the educational process in Ukraine. It can become a valuable contribution to the understanding of modern challenges and opportunities in higher education in Ukraine. In addition, this study focuses on approaches to studying specific segments of higher education, such as the use of technology in educational programs, the integration of international experience into the educational process, and the development of key skills for successful adaptation in the modern world. Thanks to this deep and multifaceted approach, the work not only identifies trends, but also reveals their practical significance and potential benefits for all participants of the educational process in Ukraine. Such a research approach contributes to the formulation of specific strategies for the further development of innovations in higher education, contributing to the creation of a sustainable, progressive educational environment in Ukraine. The limitations of this study are conducting a survey purely among teachers and considering only

modern literature. This approach somewhat levels the achievements of other scientists, however, it enriches the research with relevant information.

5. Conclusions

Innovations play a crucial role in the training system for future professionals. The research results confirm the growing interest of the pedagogical community and students in innovative approaches in higher education. This indicates a commitment to continuous development and improvement of the learning process. It has been identified that global and intercultural experience is less popular among survey participants, casting doubt on the level of interaction with international aspects of higher education. To overcome this challenge, it is essential to activate international partnerships and initiate efforts to ensure a global perspective on educational processes.

At the same time, the research suggests that implementing innovations in higher education in Ukraine may face certain challenges. This requires a systematic approach, active teacher support, financial backing, and the development of necessary resources to overcome these challenges. Thus, innovations are a vital component of higher education development, but their successful implementation demands strategic planning focused on addressing specific challenges and ensuring alignment with international standards. Overall, innovative approaches to higher education in Ukraine have significant potential for enhancing the quality of learning and professional training. However, achieving success requires active collaboration with all stakeholders in the educational process, addressing identified challenges, and providing necessary support for both teachers and students. Only through such an approach can the effective implementation of innovative approaches in higher education be achieved, ensuring continuous improvement of the system.

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