

INNOVATIVE APPROACHES TO LEARNING AND TEACHING IN UKRAINIAN HIGHER EDUCATION

ABORDAGENS INOVADORAS DE APRENDIZAGEM E ENSINO NO ENSINO SUPERIOR UCRANIANO

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Abstract. In response to the evolving education, this research investigates innovative approaches to learning and teaching within Ukrainian higher education. The objective of this research is to compile and evaluate a range of innovative approaches utilized in higher education. This research adopts a qualitative methodology that grounded in a comprehensive analysis of extant literature. The findings of the research reveal a rich tapestry of innovative approaches within Ukrainian higher education. Synthesizing diverse insights, the study illuminates the interplay between student-centered technology integration, cross-disciplinary collaboration, and competency-based education. This research concludes by highlighting the significance of innovative approaches in education. The identified practices contribute to a more dynamic and effective learning environment, aligning educational practices with trends. The study underscores the adaptability and resilience of Ukrainian higher education institutions in embracing innovative pedagogies.

Keywords: innovative approaches; institutions of higher education; learning; research activities; training of biology teachers; Ukrainian higher education

Resumo. Em resposta à evolução da educação, esta investigação investiga abordagens inovadoras à aprendizagem e ao ensino no ensino superior ucraniano. O objetivo desta pesquisa é sintetizar e analisar diversas abordagens inovadoras empregadas no ensino superior. Esta pesquisa adota uma metodologia qualitativa baseada em uma análise aprofundada da literatura existente. As conclusões da investigação revelam uma rica tapeçaria de abordagens inovadoras no ensino superior ucraniano. Sintetizando diversos insights, o estudo ilumina a interação entre a integração tecnológica centrada no aluno, a colaboração interdisciplinar e a educação baseada em competências. As práticas identificadas contribuem para um ambiente de aprendizagem mais dinâmico e eficaz, alinhando as práticas educativas às tendências. O estudo sublinha a adaptabilidade e resiliência das instituições de ucranianas na adoção de pedagogias inovadoras.

Palavras-chave: abordagem inovadora; aprendizado; atividades de pesquisa; formação de professores de biologia, ensino; educação superior ucraniana; instituições de ensino superior

1. INTRODUCTION

In contemporary higher education, there is a pressing need to explore innovative approaches to learning and teaching to address the changing demands of students and society. This endeavor is especially relevant within the space of Ukrainian higher education, where



adaptation and innovation are crucial for meeting the diverse educational needs of students and aligning with global educational trends. As global educational paradigms shift towards learner-centered methodologies and technology integration, it is crucial for Ukrainian institutions to explore and adopt innovative strategies that foster engagement, critical thinking, and lifelong learning skills among students (Malaniuk, 2020; Matviienko & Van, 2023). The relevance of exploring innovative approaches in Ukrainian higher education stems from the rapidly changing socio-economic and technological environment. In order to produce graduates equipped to navigate the complexities of the contemporary world, educators must critically examine and enhance existing pedagogical practices.

A comprehensive analysis of existing studies in the field provides insights into the current state of learning and teaching practices in Ukrainian higher education (Iskakova, 2023; Kucirkova & Littleton, 2015). By examining a diverse range of research, this exploration identifies gaps, challenges, and promising trends. Baranovska (2022) explored the harmonization of education in Ukraine with European standards. The article delved into the challenges, achievements, and strategies employed in aligning Ukrainian higher education with European practices. Butyrina (2020) focuses on the competency-based approach to education, drawing comparisons between Western experiences and Ukrainian practices. Chandra et al. (2020) reviewed innovation education programs. They provided insights into various aspects of innovation education, including definitions, pedagogical approaches, frameworks, and evaluation measures. Rashidova (2014) described the importance of a research approach in higher education based on a detailed case study. Demiray (2017) examined the impact of the digital age on distance education. Durso and Decoster (2022) analyzed the relationship among undergraduate students in distance education, examining the correlation between academic performance and learning strategies. Dolgopol and Kiryanova (2021) explored innovative methods and technologies in Ukrainian higher education. Studies highlight the impact of nontraditional teaching methods, the role of technology in the classroom, the effectiveness of active learning strategies, and the importance of teacher-student interactions (Heiser, Ralston-Berg, 2019; Klyap & Klyap, 2016). Such analysis serves as the foundation for identifying areas of improvement and innovation within the Ukrainian higher education system (Kurinnyi & Cherkasova, 2022).

The research problem at the core of this inquiry revolves around the identification and evaluation of innovative approaches to learning and teaching that are contextually relevant and effective within the Ukrainian higher education setting. This involves understanding the current challenges faced by educators, students, and institutions, and discerning how innovative methodologies can address these challenges while promoting enhanced learning outcomes. The overarching aim of this research is to contribute to the advancement of Ukrainian higher education by proposing and validating innovative approaches to learning and teaching. In pursuit of this objective, the following tasks will be executed:

1. Undertake a comprehensive review of existing literature to establish a thorough understanding of the current landscape of learning and teaching in Ukrainian higher education.
2. Identify key innovative approaches in Ukrainian higher education
3. Propose recommendations and guidelines for the integration of innovative approaches into teaching practices in Ukrainian higher education institutions.

2. METHODS

The purpose of conducting this study is to systematically explore and analyze innovative approaches in Ukrainian higher education. This research employs a qualitative methodology based on an extensive analysis of existing literature. A review article is chosen as the research

approach, allowing for a comprehensive synthesis and interpretation of relevant data gathered from various scientific sources (See Table 1).

Table 1. Inclusion criteria for literature

Aspects	Example
1 Relevance to Innovative Approaches	Selected sources must directly contribute to the exploration of innovative approaches in learning and teaching. This includes but is not limited to student-centered methodologies, technology integration, cross-disciplinary collaboration, and competency-based education.
2 Publication Date	The literature included should be recent, with a focus on works published within the last decade. This criterion ensures that the study reflects the most contemporary trends and developments in Ukrainian higher education.
3 Peer-Reviewed Journals	The selected literature predominantly comprises peer-reviewed journals, academic publications, and reputable sources to maintain the credibility and scholarly rigor of the research.
4 Geographical aspects	The literature should refer to innovative teaching technologies in Ukraine or Europe

Source: Author's development.

The data collection process involves a systematic review of academic databases, journals, and relevant repositories. Search queries are designed to target literature focusing on innovative approaches in Ukrainian higher education. The selection is based on abstracts, titles, and keywords, ensuring alignment with the research objectives.

A thematic analysis approach is employed to categorize and identify recurring themes across the selected literature. This involves identifying patterns, trends, and variations in the innovative approaches discussed in the sources. Findings from individual sources are synthesized to construct a cohesive narrative. Connections and disparities between various studies are explored to offer a nuanced understanding of the modern state of innovative teaching and learning practices in Ukrainian higher education.

3. RESULTS

The current higher education system in Ukraine operates as an integrated framework encompassing general, specialized, and individual components. The special aspect of this system is characterized by its distinctiveness, determined by the demands of future professional innovative endeavors. The individual facet reflects the interdependence of training on individual characteristics, knowledge levels, interests, and inclinations (Dolgopol & Kiryanova, 2021). Central to this educational concept is a systemic approach, emphasizing the amalgamation of continuous professional education and recognizing the personal nature of individual development conducive to innovative activities (Gajda et al., 2017; Malaniuk, 2020).

The contemporary training of Ukrainian students is designed to cultivate innovative capabilities, proficiency in information technologies, and effective communication – encompassing teamwork and interaction with diverse student groups. In Ukraine, a key strategy driving the innovative thrust in higher education modernization, aligned with the Bologna process, is the adoption of modular- contextual technology (Matviienko & Van, 2023). This approach focuses on instilling practical skills, fostering emotional and moral-aesthetic qualities, assimilating knowledge, honing various abilities, and developing methods of mental actions, as well as self-management mechanisms in future professionals. This approach underscores the significance of fostering independent thinking, goal-oriented learning, and the holistic development of students in the evolving system of higher education. (See Figure 1).



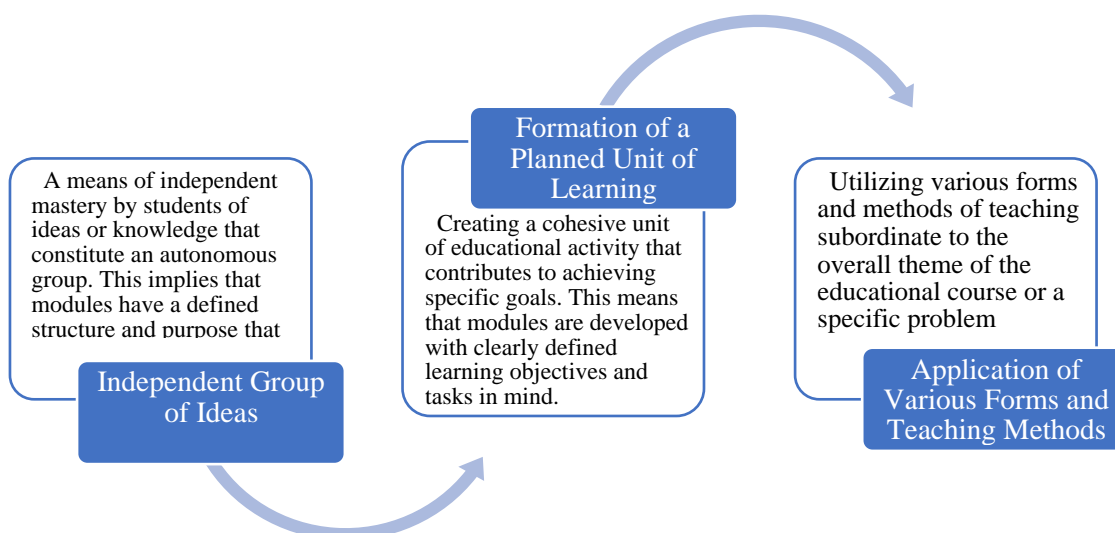


Figure 1. Main principles to the modularity of higher education of Ukraine.

Source: Author's development

The mentioned approach highlights the necessity to create a structured, cohesive, and flexible learning environment. Implementing modularity contributes to the effective organization of the learning process, enhances student engagement, and aligns with educational objectives. Another important approach in Ukrainian higher education is the student-centered approach, which involves a fundamental shift from the traditional teacher-centered model to one that prioritizes the needs, interests, and active participation of students (Mykhailov & Vyzhva, 2014). This approach places the learner at the core of the educational experience, aiming to create a more engaging and personalized learning environment. (See Figure 2).

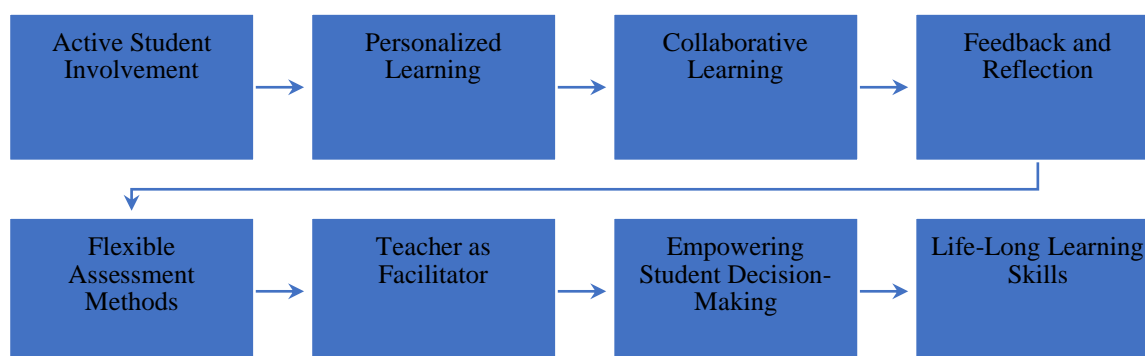


Figure 2. Model of student-centered approach in Ukrainian higher education.

Source: Author's development

As shown in Figure 2 the student-centered approach emphasizes active engagement in the education process. Students are prompted to inquire, engage in discussions, and assume accountability for their own learning. This approach also assumes acknowledging and catering to diverse learning styles, preferences, and paces. The curriculum and instructional methods are designed to be adaptable, allowing students to pursue topics of interest within the framework of their courses. As a result, there is a promotion of collaborative learning environments where students work together on projects, discussions, and problem-solving activities (Nuzhna, 2022; Vavdiuk et al., 2022). This fosters teamwork, communication skills, and a shared responsibility for learning outcomes (Makki et al., 2022). A student-centred approach is taught using a variety of assessment methods in addition to traditional

exams, such as project work, presentations and portfolios. This approach allows for a more comprehensive assessment of students' skills and understanding (Vavdiuk et al., 2022). There is also provision of timely and constructive feedback to students, education of a culture of continuous improvement.

As shown in Figure 2 the role of the teacher undergoes a significant transition. Traditionally perceived as the primary source of information, educators now adopt a more facilitative or guiding role within the classroom. This shift entails a departure from traditional didactic teaching methods towards fostering a more interactive and student-centered learning environment. Teachers are encouraged to facilitate discussions, guide inquiry, and provide support as students navigate their own learning journeys. This transformation reflects a broader pedagogical shift towards empowering students to actively engage with course content, develop critical thinking skills, and take ownership of their learning processes. Teacher's support and guide students in their learning journey, creating an environment that encourages curiosity and critical thinking. Hence, the adoption of a student-centered approach in Ukrainian higher education reflects a commitment to providing a more inclusive learning experience (Iskakova, 2023). This approach not only prepares them for academic success but also equips them with the skills needed for the challenges of their future careers and personal development.

Technology integration and digitalization in Ukrainian higher education represent transformative initiatives aimed at enhancing the overall learning experience, improving access to educational resources, and preparing students for the demands of a technologically-driven society (Melnyk, 2022; Turchyn et al., 2023). The table 2 shows details on the role of technology in higher education in Ukraine.

Table 2. Main aspects of the implementation of digitalization in Ukraine

Aspects	Example
1 E-Learning Platforms	Adoption of e-learning platforms that facilitate online courses, virtual classrooms, and asynchronous learning opportunities. These platforms provide students with flexibility in accessing educational materials and engaging in discussions, catering to diverse learning styles and schedules.
2 Digital Learning Resources	Integration of digital textbooks, multimedia content, and open educational resources. This move away from traditional print materials allows for more dynamic and interactive learning experiences, keeping students engaged and offering a wealth of up-to-date information.
3 Blended Learning Models	Implementation of blended learning, combining face-to-face instruction with online components. This approach leverages the benefits of both traditional and digital methods, providing a more versatile and personalized educational experience (Turchyn et al., 2023).
4 Virtual Labs and Simulations	Utilization of virtual labs and simulations in science and technical disciplines. These digital tools offer students the opportunity to conduct experiments and explore concepts in a virtual environment, overcoming physical constraints and enhancing hands-on learning (Sofilkanych et al., 2023).
5 Online Assessments	Conducting assessments and examinations through online platforms. This not only streamlines the evaluation process but also allows for the use of diverse assessment methods, such as quizzes, discussions, and project submissions.
6 Student Engagement Tools	Integration of collaborative and communication tools to enhance student interaction and engagement. Discussion forums, video conferencing, and messaging platforms facilitate communication, fostering a sense of community in virtual settings.
7 Digital Skill Development	Emphasis on the development of digital literacy and technology-related skills. Courses and programs may incorporate components that focus on coding, data analysis, and other relevant digital skills to get ready students for the modern demands of the job market.

Source: Author's development.

Therefore, the ongoing process of technology integration and digitalization in Ukrainian higher education signifies a commitment to innovation, accessibility, and preparing students for a digital future (Turchyn et al., 2023). It requires collaboration among educators, administrators, and policymakers to effectively implement and sustain these advancements in the education.

The use of modern digital technologies plays an important role in the biology teacher training system. Since the science of biology is in constant development, future biology teachers must skillfully master modern innovative technologies. This especially applies to the use of simulation and virtual learning methods, which affect the formation of practical skills in students.

At the same time, the high-quality training of biology teachers directly depends on the organizational and pedagogical conditions under which the educational process is carried out. For example, an important condition is the creation of a material and technical base of higher education, with the help of which both the research and creative abilities of students and research skills are developed. For this reason, the presence of special research offices and laboratories, which are equipped with modern teaching aids and equipment, affects the implementation of the research approach in the educational process and the application of innovative pedagogical technologies (Rashidova, 2014).

In order to support the development of research activities of future biology teachers, various digital technologies are used, in particular, computer simulations, virtual laboratories, multimedia presentations and various kinds of interactive exercises. At the same time, a special part of the training of biology teachers is working with scientific sources and their research.

In particular, students learn to analyze and critically examine modern scientific literature, on the basis of which they form their own research and projects. Therefore, as a result of the implementation of the research approach, future teachers can become more competent and in-demand teachers.

The following approach is based on the principle of multi-subject foundations of the content of education. Cross-disciplinary collaboration in Ukrainian higher education refers to the integration and interaction of different academic disciplines to address complex challenges, promote innovation, and foster a more comprehensive understanding of various subjects (Ognevyuk & Sysoieva, 2015). Table 3 shows the role and characteristics of cross-disciplinary collaboration in Ukrainian higher education.

Table 3. Characteristics of cross-disciplinary collaboration in Ukrainian higher education

Aspects	Example
1 Interconnected Curriculum	Integration of diverse disciplines into the curriculum to create a more interconnected and holistic learning experience. This may involve collaborative course design that incorporates concepts and perspectives from multiple academic fields.
2 Joint Research Initiatives	Encouragement and facilitation of joint research projects that involve researchers from different disciplines working together to explore multifaceted issues. This collaborative research approach can lead to innovative solutions and a broader perspective on complex challenges
3 Collaborative Teaching Approaches	Implementation of team teaching or co-teaching models where educators from different disciplines collaborate to deliver a unified learning experience. This approach exposes students to diverse viewpoints and encourages critical thinking across disciplines.
4 Cross-Disciplinary Conferences and Seminars	Organization of conferences, seminars, and workshops that bring together scholars and practitioners from diverse fields. These events provide platforms for knowledge exchange, networking, and the exploration of interdisciplinary research and practices.

5	Fostering Collaborative Culture	a	Cultivation of a collaborative culture within the academic community. Encouraging open communication, mutual respect, and recognition of the value that each discipline brings to the collaborative effort.
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Source: Author's development.

In addition, competency-based education (CBE) in Ukrainian higher education represents a paradigm shift towards a learner-centric approach, focusing on the development and mastery of specific competencies rather than the traditional emphasis on time-based learning. This innovative educational framework aligns with global trends and aims to enhance the quality and relevance of higher education in Ukraine (Butyrina, 2020). CBE in Ukrainian higher education emphasizes the identification, articulation, and assessment of key competencies that students are expected to acquire during their academic journey. Competencies are defined as a combination of knowledge, skills, attitudes, that enable individuals to perform effectively in a given context (Kurinyi & Cherkasova, 2022).

The implementation of CBE involves a departure from traditional credit-hour systems towards a more flexible and personalized learning structure. Students' progress based on their demonstrated mastery of predefined competencies, allowing for a more individualized and efficient educational experience. This shift not only accommodates diverse learning styles but also promotes lifelong learning and a deeper understanding of subject matter. Central to the CBE model is the transparent and explicit definition of learning outcomes. Faculty members collaborate to articulate the competencies that students should achieve by the end of a program or course (Stynska et al., 2021). These competencies are often informed by industry needs; ensuring graduates are well-prepared for the demands of the workforce.

Assessment strategies in CBE are carefully designed to measure students' mastery of competencies. Authentic assessments, such as projects, portfolios, and practical demonstrations, replace traditional exams. CBE also necessitates a robust system of support for students (Butyrina, 2020). Academic advisors play a crucial role in guiding learners through their competency-based journey, helping them set goals, identify areas for improvement, and plan their academic trajectory. This personalized guidance contributes to higher retention rates and overall student success. Moreover, the integration of technology is paramount in the successful implementation of CBE. The adoption of Competency-Based Education in Ukrainian higher education signifies a commitment to providing a more responsive, student-focused, and outcomes-driven educational experience. By emphasizing competencies that align with the needs of society and the workforce, Ukraine's higher education system is poised to produce graduates who are not only academically proficient but also well-equipped for the complexities of the modern world.

The introduction of the latest models in higher education of Ukraine, however, faces a certain conservatism of the teaching environment. It is worth noting that not all teachers are ready to follow modern innovative approaches to the organization of the educational process, which creates certain difficulties on the way to the development of higher education (Demiray, 2017). First of all, it is said that the corresponding trainings are quite expensive, while in the conditions of war and Russian aggression, the possibilities of higher education institutions to finance such educational events have significantly decreased. Teachers are also feeling the financial burden of wartime restrictions. Therefore, a rather paradoxical and closed situation is created, during which the lack of financial resources does not make it possible to fully implement the training of teachers for the use of innovative technologies. A way out of this situation could be found in the establishment of closer international cooperation, since grant support to non-governmental organizations would make it possible to cover part of the expenses. However, not all institutions of higher education take into account this aspect of establishing mutually beneficial cooperation. For this reason, there is a certain

resistance to the introduction of innovations on the part of teachers, since the problem of appropriate retraining and professional development has not yet been solved.

At the same time, the use of innovative approaches is positively evaluated among both teachers and students. According to statistical materials and survey results, which have already partially become an object for scientific consideration (Melnyk, 2022), the use of interdisciplinary cooperation, digital platforms and the latest pedagogical methods leads to facilitation in the understanding and use of new theoretical material, and also improves the acquisition of practical skills. With this in mind, the practical aspect of applying innovation shows a general interest in further implementation and evolution. Despite certain obstacles already outlined, it is clear that further digitalization of higher education is a reality that will require further research and understanding.

4. DISCUSSION

The exploration of innovative approaches to learning and teaching in Ukrainian higher education reveals a concerted effort to adapt to the evolving landscape of education globally.

The findings of the study unequivocally affirm the positive impact resulting from the implementation of student-centred methodologies, technology integration, interdisciplinary cooperation, competency-based education, and other forward-thinking strategies within Ukrainian higher education institutions. These initiatives distinctly underscore the institutions' commitment to cultivating a vibrant and impactful learning environment. Notably, the observed outcomes align seamlessly with the research findings of contemporary scholars in the field (Mykhailov & Vyzhva, 2014; Voloshynov et al., 2018). The resonance of these innovative approaches lies in their intrinsic potential to cater to the diverse needs of students, ensuring an educational experience that is not only relevant but also aligned with emerging global trends (Ognevyuk & Sysoieva, 2015). Furthermore, these strategies serve as a catalyst for enhancing the competitiveness of Ukrainian graduates on the international stage, emphasizing the adaptability and efficacy of the country's higher education sector (Melnyk, 2022).

The consensus among scholars is compelling, emphasizing that the contemporary trajectory of higher education development in Ukraine necessitates a proactive adaptation of domestic institutions to align with the ongoing processes of European integration, liberalization, and market-oriented transformations within the educational domain (Prima & Prima, 2020). The prevailing academic viewpoint underscores the imperative for Ukrainian higher education institutions to embrace dynamic shifts in their structures and methodologies, mirroring the progressive changes occurring on the European stage (Prima & Prima, 2020; Sheremet & Suprun, 2022). This adaptation is seen as crucial for fostering synergy with evolving global educational paradigms, enhancing competitiveness, and aligning with the values and practices emblematic of a market-driven educational landscape (Oneshko & Pashchuk, 2021; Shevchenko et al., 2021).

In essence, scholars advocate for a strategic alignment of Ukrainian higher education with prevailing European trends, recognizing the transformative potential of such integration for the advancement and relevance of educational practices within the country (Sushchenko & Skalski, 2019).

In the context of this discussion, it is worth noting that ensuring the humanization of pedagogical activity is a difficult task, which is exacerbated by the rapid devaluation of knowledge acquired by teachers during their professional activities (Stepanenko et al., 2021; Volikova & Bratanych, 2021). It cannot be agreed to Sushchenko and Skalski (2019) single instances of professional development and internships appear to hold less methodological value for teachers, often resembling mere tourist trips to EU countries rather than effective learning experiences. On the contrary, this research shows that a humanistic orientation in



teacher training has proven to be useful for solving various educational tasks. This approach positively influences the establishment of communication among participants in the pedagogical process and contributes to the reduction of social and religious inequality. However it should recognize that the complexity of the issue requires comprehensive consideration from different perspectives, and different researchers offer different solutions to this problem.

Hence, this research contributes to scientific novelty by synthesizing and presenting a holistic view of various innovative approaches in Ukrainian higher education. The research emphasizes the contemporary relevance of innovative approaches in the Ukrainian higher education context. By focusing on recent publications and developments, the study provides insights into how these approaches address current challenges and align with global educational trends.

One limitation is the potential incompleteness of the literature review. Despite efforts to include a diverse range of sources, the scope may not encompass all relevant publications or emerging trends in the rapidly evolving field of innovative education. The research may be subject to language bias, as the review primarily focuses on literature available in English. Although efforts are made to include Ukrainian-language sources, there might be valuable contributions in local publications that are not covered in this study. Recognizing these limitations serves to enhance the transparency and credibility of the research endeavor.

By openly acknowledging the constraints and potential shortcomings of the study, researchers lay a solid foundation for future investigations to expand upon and refine our comprehension of innovative approaches within Ukrainian higher education. This transparency not only fosters trust in the findings but also encourages further inquiry and development in the field. As such, these limitations serve as valuable insights that can inform and guide future research endeavors, ultimately contributing to the advancement of knowledge in the realm of Ukrainian higher education.

5. CONCLUSION

In conclusion, the incorporation of student-centered methodologies, technology integration, cross-disciplinary collaboration, competency-based education, and other progressive strategies underscores the commitment of Ukrainian higher education institutions to provide a dynamic and effective learning environment.

The relevance of these innovative approaches lies in their potential to address the diverse needs of students, align educational practices with emerging global trends, and enhance the competitiveness of Ukrainian graduates on an international scale. By fostering active student engagement, personalized learning experiences, and interdisciplinary collaboration, these approaches pave the way for a more resilient and adaptable generation of learners.

As Ukraine continues to navigate its educational system, the ongoing commitment to innovation signals a forward-looking mindset within higher education institutions. The integration of these innovative approaches not only enriches the academic experience but also positions Ukrainian higher education as a dynamic force capable of producing graduates who are well-equipped to meet the challenges of the 21st century.

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