Journal of Vasyl Stefanyk Precarpathian National University
http://journals.pnu.edu.ua
Vol. 13, No. 1 (2026), 99-114

doi: 10.15330/jpnu.13.1.99-114

ISSN 2311-0155 (Print)
ISSN 2413-2349 (Online)

INDIVIDUALISATION OF THE EDUCATIONAL PROCESS AND SUPPORTING STUDENTS IN ADAPTING TO A NEW LEARNING ENVIRONMENT: EVALUATION OF CURRENT APPROACHES

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Abstract. The study aimed to analyse the effectiveness of traditional, innovative, and digital approaches to individualising the educational process and student adaptation within the educational systems of Bulgaria, Kyrgyzstan, and Uzbekistan. The research employed comparative, systemic, content, and qualitative analyses to assess individualised learning approaches in these countries, considering regulatory frameworks, digital tools, pedagogical practices, and socio-cultural contexts. The findings revealed three key dimensions of educational individualisation: traditional methods, digital technologies, and innovative approaches. The study identified specific characteristics of implementing differentiated instruction, individual consultations, tutoring, and adaptive curricula in countries with varying levels of technological development. The role of digital tools and factors influencing their effectiveness – including educators' digital literacy and cultural-educational contexts – were examined. Innovative student adaptation methods, such as project-based learning, gamification, peer-to-peer learning, and adaptive blended learning, were analysed. Particular attention was given to fostering an inclusive educational environment as a critical aspect of individualisation. The study established that the most effective strategies are comprehensive, integrating traditional methods with digital and innovative technologies, while the key success factors include a systematic approach, consideration of national contexts, and targeted teacher training. The practical significance of the study lies in the development of tailored models for individualised learning, accounting for the technological and socio-economic specificities of the educational systems in Bulgaria, Kyrgyzstan, and Uzbekistan. The scientific novelty of the study lies in the comprehensive comparative analysis of educational individualisation and student adaptation approaches in Bulgaria, Kyrgyzstan, and Uzbekistan, which for the first time integrates traditional methods, digital technologies, and innovative strategies, considering the technological and socio-cultural specificities of these countries.

Keywords*:* learning environment, pedagogical support, digital technologies in education, personalised learning, psychological adaptation.

1. INTRODUCTION

Amid the rapid transformations in 21st-century education, individualising learning and supporting students in adapting to new educational environments have emerged as critical determinants of academic success. The relevance of this study stems from a growing need to develop and implement effective strategies for personalised learning against the backdrop of accelerating digitalisation in education. Technological advancements, particularly in artificial intelligence and adaptive learning

platforms, present new opportunities for creating flexible educational systems capable of addressing the individual needs of each learner. However, the efficacy and applicability of such innovations require comprehensive analysis within diverse educational contexts. Of particular importance is the pursuit of a balanced integration of traditional pedagogical practices and modern digital tools – a challenge especially pertinent to countries with varying levels of technological infrastructure and access to digital resources. This study seeks to address these challenges and propose practical solutions tailored to the specific conditions of the educational systems in Bulgaria, Kyrgyzstan, and Uzbekistan.

2. LITERATURE REVIEW

The theoretical basis of the study is grounded in the works of authors focused on the individualisation of education, student adaptation, and the integration of traditional and digital pedagogical methods, as well as the development of inclusive educational environments in diverse sociocultural contexts. Arvidsson and Kuhn (2021) explored the potential of learning individualisation across diverse educational contexts, including countries with transitional economies. Their work demonstrated that realising the full potential of personalised learning requires a comprehensive approach that accounts not only for technological capabilities but also for the sociocultural factors influencing the educational process. The authors stressed that countries with varying levels of technological development require tailored strategies for learning individualisation. Dogan et al. (2023) conducted a systematic review of artificial intelligence applications in online learning and distance education. Their analysis revealed significant disparities in the readiness of different educational systems to adopt AI technologies. The authors noted that more technologically advanced countries exhibit higher levels of digital tool integration, whereas regions with limited infrastructure face considerable constraints, particularly in rural areas.

Hofer et al. (2021) examined the challenges and opportunities of online teaching and learning in higher education, including the context of rapid transitions to remote formats during crises. Their study demonstrated that successful learning individualisation in digital environments requires not only appropriate technological solutions but also educators' readiness to adapt their methodologies to new conditions. This is particularly relevant for countries with varying levels of digital literacy among teaching staff. Ingavélez-Guerra et al. (2022) presented an innovative approach to the automatic adaptation of educational resources. The authors developed a multi-level methodology based on learner preferences, special educational needs, artificial intelligence usage, and accessibility metadata. This study is particularly significant in the context of creating an inclusive educational environment that accommodates diverse learner requirements.

Joseph and Uzondu (2024) examined the challenges and prospects of integrating artificial intelligence and machine learning into science, technology, engineering, and mathematics (STEM) education. The authors explored the specifics of implementing adaptive learning systems in different national contexts, including countries at varying stages of technological development. The authors paid special attention to preparing educators to work with AI tools and adapting digital solutions to local educational traditions. Mikić et al. (2022) conducted a literature review on personalisation methods for e-learning. The authors developed a classification of content personalisation approaches and assessed their effectiveness across different educational contexts. Particular focus was placed on adaptive systems that account for learners' individual characteristics and the cultural specificities of educational environments. The study emphasised the value of tailoring technological solutions to national educational contexts.Papadopoulos (2023) investigated individualisation processes in adult education through a comprehensive literature review. The author analysed various approaches to learning individualisation across different countries, including Eastern European regions. An examination of educational programmes identified key factors for successful individualisation, including curriculum

flexibility, digital tool utilisation, and regular feedback. The study demonstrated that effective individualisation strategies must consider local educational traditions and infrastructural capabilities.

The literature analysis has demonstrated that, despite a substantial body of research on the individualisation of education, there is insufficient exploration of comparative aspects of implementing personalised approaches across countries with varying levels of technological development. Particularly scarce are studies focusing on a comprehensive analysis of traditional, digital, and innovative methods of individualisation in the educational systems of Bulgaria, Kyrgyzstan, and Uzbekistan. Additionally, the mechanisms of student adaptation in blended learning environments and the potential to integrate diverse approaches to personalising the educational process remain understudied.

The aim of this study was to conduct a comprehensive analysis of contemporary approaches to individualising the educational process and facilitating student adaptation to new learning environments, taking into account the opportunities afforded by digital technologies and educational development trends in Bulgaria, Kyrgyzstan, and Uzbekistan. To achieve this objective, the following interrelated tasks were addressed: analysing the theoretical foundations of educational individualisation and student adaptation, identifying key principles and features of their implementation in the educational systems of the studied countries; examining the current state and developmental trends in adaptive educational technologies, while determining the primary challenges and barriers to their implementation.

3. RESEARCH OBJECTIVE, METHODOLOGY AND DATA

The methodological framework of the study incorporated a combination of complementary theoretical and analytical approaches aimed at comprehensively investigating the processes of educational individualisation in Bulgaria, Kyrgyzstan, and Uzbekistan. The primary method employed was comparative analysis, which facilitated the juxtaposition of key approaches and strategies applied in the three countries' educational systems based on predefined criteria: accessibility, effectiveness, adaptability, and sustainability. For each country, a summary table was compiled, detailing traditional, digital, and innovative methods, examples of their application, as well as their primary advantages and limitations within specific sociocultural contexts. This approach enables the systematic organisation of data and its synthesis in a comparable format.

Systematic analysis was used to examine the internal structure of individualised learning approaches. Educational strategies were deconstructed into constituent elements, including pedagogical methods, forms of student-teacher interaction, organisational models, and digital tools. Particular emphasis was placed on identifying relationships between these components and assessing their compatibility within existing educational frameworks. This allowed for an evaluation of how harmoniously traditional and modern methods are combined and the extent to which they are integrated into national educational policies and practices.

Content analysis was applied to review regulatory and strategic documents governing the development of educational systems in the studied countries. Key sources analysed included: Bulgaria's National Strategy for the Digitalisation of Education (2019-2023),the Strategy of the Kyrgyz Republic (2021-2040), andUzbekistan's Concept for the Development of the Education System of the Republic of Uzbekistan until 2030. Additionally, official educational platforms and digital solutions actively implemented in schools and universities – such as Smart Education, Bilim Bulagy, UzLearn, Moodle, and HEMIS – were examined. The analysis encompassed both state-led initiatives and local practices reflected in educational projects. Qualitative data analysis was conducted with consideration for the cultural, social, and economic conditions in each country. Specific factors examined included disparities between urban and rural regions, the level of digital infrastructure, equipment and internet accessibility, educators' readiness to adopt innovative tools, and governmental involvement in supporting educational reforms. Special attention was given to the transformation of traditional individualisation

methods under the influence of digitalisation, exploring how consultations, differentiated instruction, and adaptive curricula evolved in contemporary settings. This approach not only identified current practices but also assessed their potential for further development within the context of digital transformation in education.

4. RESULTS AND DISCUSSION

The studied approaches to the individualisation of the educational process and student adaptation within the education systems of Bulgaria, Kyrgyzstan, and Uzbekistan have identified and systematised three key dimensions: traditional methods, digital technologies, and innovative adaptation techniques. Traditional methods of educational individualisation remain a crucial component of the learning process in all the examined countries, particularly in regions with limited access to digital technologies. Schwarcz and Farganis (2017) attribute the efficacy of traditional methods to their potential for personalised feedback and direct teacher-student interaction.

The comparative analysis revealed the primary traditional approaches, their characteristics, and implementation examples in the studied countries, as well as their advantages and limitations. Table 1 presents a comparative overview of traditional methods for students' individualisation and adaptation.

Tab. 1

Comparative characteristics of traditional methods for student individualisation and adaptation

Method	Key characteristics	Examples of application	Advantages	Limitations
Differentiated instruction	Grouping students by proficiency level; adapting content and pace to group capabilities	Tiered assignments in Bulgarian schools; accommodating educational needs in Kyrgyzstan; role-distributed group projects in Uzbekistan	Accounts for individual learning pace; enhances student motivation; reduces academic anxiety	Difficult to scale; risk of student stigmatisation; high teacher workload
Individual consultations	Personal teacher-student interaction; targeted assistance in overcoming learning gaps	Tutoring systems in Kyrgyzstani schools; consultation hours in Bulgarian universities; individual academic mentoring in Uzbekistan	Highly effective in addressing knowledge gaps; personalised approach; psychological support	Time-consuming; limited student coverage; high demands on teacher qualifications
Private tutoring	One-on-one instruction outside the standard curriculum	Exam preparation in Uzbekistan; remedial classes in rural Kyrgyzstani schools; subject-specific courses in Bulgaria	Focus on individual needs; flexible scheduling; immediate feedback	Additional financial burden; unequal access; lack of systematic integration
Adaptive curricula	Customisation of the educational programme to meet individual student needs	Individual learning pathways for gifted students in Bulgaria; tailored programmes for students with special needs in Uzbekistan; modular vocational training in Kyrgyzstani colleges	Addresses educational needs; flexible planning; learner-centred approach	Complex administrative oversight; resource-intensive; requires specialised teacher training

Source: developed by the authors Frey (2019)

Table 1 presents a comparative analysis of four key traditional methods of student individualisation and adaptation – differentiated instruction, individual consultations, tutoring, and adaptive curricula. Each method has distinct application features, advantages, and limitations, shaped by the educational contexts of Bulgaria, Kyrgyzstan, and Uzbekistan. Differentiated instruction is actively employed in all three countries, particularly in Bulgaria, where multi-level tasks are implemented. This method accounts for students' individual characteristics, reducing anxiety and enhancing motivation. However, it requires significant effort from educators and carries a risk of social stigmatisation. Individual consultations have demonstrated high efficacy in addressing learning gaps and providing psychological support. In Kyrgyzstan and Uzbekistan, tutoring and consultation practices are becoming integral to educational support systems. A key limitation remains the substantial time investment and the need for highly qualified educators.

Tutoring is the most flexible and rapidly adaptable method, particularly relevant in resource-constrained settings in Kyrgyzstan and Uzbekistan. However, unequal access and a lack of systemic integration limit its widespread applicability within formal education. Adaptive curricula exhibit the highest degree of personalisation, particularly in Bulgaria and Uzbekistan, where the focus is on individual learning pathways. Nevertheless, implementing such programmes demands considerable resources, staff training, and complex administrative support.

The analysis of traditional individualisation methods has identified key trends in their evolution within the educational systems of Bulgaria, Kyrgyzstan, and Uzbekistan. Primarily, there is a discernible shift towards integrating various methodologies into a unified model of personalised learning, fostering a more flexible and comprehensive approach to student needs. Additionally, all three countries are placing a greater emphasis on teacher professional development; training programs are being implemented to enhance competencies in individualisation and student support.Furthermore, traditional methods are undergoing gradual transformation: they are becoming more structured and, through the integration of digital solutions, more technologically advanced and scalable. This expands their potential and enables the adaptation of individualised approaches to mass educational settings.The study also revealed specific challenges associated with applying traditional methods in the examined countries. Resource constraints in rural schools in Kyrgyzstan and Uzbekistan are particularly acute, where a shortage of qualified teachers and material resources hampers the full-scale implementation of individualised approaches. In some cases, rigid regulatory frameworks limit opportunities for flexible curriculum adaptation to students' individual needs.

The application of digital technologies to educational individualisation has emerged as a significant trend in the education systems of the studied countries. Digital technologies offer new opportunities for personalising learning and creating adaptive educational environments. Adaptive learning platforms, learning management systems, and educational applications are becoming powerful tools for individualised learning processes (Alam, 2021). Table 2 outlines the main types of digital educational technologies used for individualised instruction and student adaptation in the examined countries.

An analysis of the table presented demonstrates how various digital technologies influence the individualisation of the educational process, as well as their advantages and limitations within the educational systems of Bulgaria, Kyrgyzstan, and Uzbekistan. Adaptive learning platforms offer automated adjustment of content and learning pathways based on performance analytics and student preferences.

Platforms such as Smart Education in Bulgaria, Bilim Bulagy in Kyrgyzstan, and the National Educational Platform in Uzbekistan demonstrate a high degree of personalised learning, allowing for the customisation of pacing and content according to learners' needs. However, these technologies require substantial financial investment for development and implementation and may encounter challenges related to internet connectivity quality and difficulties in integration with traditional teaching methods.LMSs, such as Moodle in Kyrgyzstan and the National Educational Monitoring System in

Bulgaria, facilitate centralised management of the educational process by automating administrative tasks and providing access to learning materials. While these systems streamline educational organisations, they exhibit limited flexibility in adapting to specific students' needs and require user training.

Tab. 2

Digital technologies in the individualisation of the educational process

Technology	Key characteristics	Examples of application	Advantages	Limitations
Adaptive learning platforms	Automatic adjustment of content and learning pathways based on student performance and preferences	Smart Education Platform (Bulgaria); Bilim Bulagy (Kyrgyzstan); National Educational Platform (Uzbekistan)	Personalisation of learning pace and content; automated progress assessment; extensive analytics	High development and implementation costs; reliance on internet connectivity; challenges in integrating traditional methods
Learning management systems (LMS)	Centralised management of educational content and learning activities; tracking student progress	Moodle (Kyrgyzstani universities); National Educational Monitoring System (Bulgaria); HEMIS (Uzbekistani higher education)	Streamlining the educational process; accessibility of learning materials; automation of administrative tasks	Limited customisation flexibility for specific educational needs; user training requirements
Mobile learning applications	Access to educational content via mobile devices; gamified learning elements	BilimLand (Kyrgyzstan); UzLearn (Uzbekistan); EDUHub (Bulgaria)	Accessibility; student engagement; opportunities for learning beyond the classroom	Fragmented knowledge acquisition; dependence on smartphone ownership; limited content depth
virtual and augmented reality (VR/AR) technologies	Creation of immersive learning environments; visualisation of complex concepts	VR laboratories in Bulgarian technical universities; AR applications for science education in Uzbekistani schools; educational VR simulators in Kyrgyzstan	High engagement; visual clarity; emotional immersion	High equipment costs; limited applicability; technical implementation challenges

Source: developed by the authors based on Daghestani et al. (2020), Grannäs and Stavem (2021), Vanslambrouck et.al. (2019)

Mobile learning applications enable access to educational content via mobile devices and incorporate gamification elements. Applications such as BilimLand in Kyrgyzstan, UzLearn in Uzbekistan, and EDUHub in Bulgaria enhance student engagement and facilitate learning outside the classroom. However, these applications face limitations, including dependence on smartphone ownership among students and the fragmented nature of knowledge acquisition through such platforms.VR/AR technologies represent the most innovative educational tools, creating immersive and graphical learning environments. The application of VR and AR in Bulgaria, Uzbekistan, and Kyrgyzstan fosters high student engagement and aids in the visualisation of complex concepts. Nevertheless, these technologies require costly equipment, have limited applicability across educational domains, and may encounter technical implementation challenges.

The study identified several key factors influencing the effectiveness of digital technologies for individualising the educational process. First, the digital literacy of educators plays a critical role, varying significantly depending on the country and type of educational institution. Second, the quality of technical infrastructure, including access to high-speed internet and modern devices, is essential. Third, the integration of digital technologies into the educational process proves decisive – the most effective approaches involve comprehensive digital transformation strategies based on a systemic implementation framework. Fourth, the alignment of digital tools with cultural and educational contexts is crucial: localised solutions that account for national specificities and educational traditions demonstrate greater efficacy.

Innovative methods of student adaptation to new learning environments emerged as the third significant direction in the individualisation of education across the studied countries. These approaches combine elements of traditional methodologies with modern pedagogical concepts and often integrate digital technologies to maximise effectiveness. Flexible learning pathways in digital environments significantly enhance personalisation and allow the educational process to be tailored to individual student needs (Garcias et al., 2022). Table 3 provides a comparative analysis of innovative adaptation methods employed in the educational systems of Bulgaria, Kyrgyzstan, and Uzbekistan.

Analysis of Table 3 demonstrates how innovative methods of student adaptation to a new educational environment are implemented in Bulgaria, Kyrgyzstan, and Uzbekistan, revealing their potential and application specifics, as well as key advantages and limitations. Project-based learning emerges as an effective adaptation tool due to its focus on practical activities and student engagement in solving real-world tasks. In Bulgaria, interdisciplinary projects are actively introduced; in Uzbekistan, vocationally orientated ones; while Kyrgyzstan emphasises environmental projects. These projects foster critical thinking, the formation of sustainable knowledge, and motivation through the integration of theory and practice. However, challenges such as the complexity of objective assessment, uneven distribution of workload among participants, and the need for adequate material resources remain obstacles to the method's sustainable implementation.

Gamification of the educational process enhances student motivation through the use of game mechanics and achievement systems. In Bulgaria, the "Ucha.se" platform; in Kyrgyzstan, BilimLand; and in Uzbekistan, game-based educational projects in schools illustrate how gamification promotes engagement and reduces anxiety. Nevertheless, it carries certain risks: potential superficial comprehension of learning materials, technical difficulties, and reliance on extrinsic rather than intrinsic motivation. Peer-to-peer learning represents a method of collaborative education where students act not only as knowledge recipients but also as active participants in the learning process.

In Bulgaria, mentoring programs have been successfully implemented; in Uzbekistan, educational communities; and in Kyrgyzstan, peer-to-peer tutoring practices. This approach facilitates the development of communication skills, soft skills, and accelerated adaptation. However, inconsistent interaction quality and limited depth of knowledge among students themselves, particularly in complex subjects, may diminish its effectiveness. Adaptive blended learning combines online and offline formats, offering flexibility and opportunities for personalised instruction. Examples include the "flipped classroom" model in Bulgaria, hybrid courses in Uzbek universities, and blended learning approaches in Kyrgyzstan. This method eases adaptation, allows students to progress at their pace, and leverages digital tools for deeper learning. However, it demands high self-discipline, may exacerbate digital inequality, and requires meticulous coordination by educators.

Tab. 3

Innovative methods for student adaptation to a new educational environment

Method	Key characteristics	Application examples	Advantages	Limitations
Project-based learning	Organisation of the learning process around practical problem-solving and project implementation; consideration of students' interests and abilities.	Interdisciplinary projects in Bulgarian gymnasiums; vocationally oriented projects in Uzbek colleges; environmental projects in Kyrgyz schools.	High engagement; development of critical thinking; theory-practice integration; seamless assimilation into the learning environment.	Assessment challenges; uneven workload distribution; demand for adequate technical and material resources.
Gamification of education	Incorporation of game mechanics and elements into educational contexts; development of achievement-based motivation systems with rewards.	Bulgaria's Ucha.se platform; game-based elements in Kyrgyzstan's BilimLand; competitive educational projects in Uzbek schools.	Enhanced motivation; increased engagement; adaptability to learner levels; reduced anxiety.	Risk of superficial knowledge acquisition; technical implementation barriers; reliance on extrinsic motivation.
Peer-to-peer learning	Facilitation of reciprocal learning among students; creation of a collaborative educational environment; development of communication and teamwork skills.	Mentorship programmes in Bulgarian universities; learning communities in Uzbekistan; peer-to-peer tutoring in Kyrgyzstan.	Horizontal communication model; soft skills development; accelerated socialisation; accessibility.	Inconsistent interaction quality; limited expertise in complex topics; need for coordination.
Adaptive blended learning	Integration of face-to-face and online learning; flexible combination of synchronous and asynchronous formats; personalised learning pathways.	Flipped classroom model in Bulgarian schools; hybrid learning in Uzbek universities; blended courses in Kyrgyzstan.	Format flexibility; individualised pacing; technological support; gradual adaptation.	Digital divide; coordination challenges; heightened demands on students' self-regulation.

Source: developed by the authors based on Emerson et al. (2020)

State programmes and initiatives often integrate innovative student adaptation methods to enhance education quality and individualise instruction. Table 4 presents key government programmes facilitating the implementation of innovative approaches to education individualisation in the studied countries.

Analysis of Table 4 reveals the specific features and priorities of state programmes aimed at supporting the individualisation of education in Bulgaria, Kyrgyzstan, and Uzbekistan. Despite differences in socioeconomic contexts and educational systems, all three countries demonstrate a strategic commitment to developing personalised learning approaches.

Tab. 4

State programmes supporting the individualisation of education

Country	**Programme**	**Key focus areas**	**Implementation mechanisms**	**Outcomes**
Bulgaria	National Programme "Digital Bulgaria 2025"	Modernisation of digital infrastructure; integration of digital technologies in education; enhancement of digital literacy	Funding for educational projects; upgrading IT infrastructure; teacher training; development of digital content	Increased accessibility of digital educational resources; modernisation of educational infrastructure; growth in teachers' digital competence
Kyrgyzstan	Education Development Strategy for 2021-2040 "Education for All"	Accessibility of quality education; individualisation of the educational process; development of inclusive education	Development of flexible educational programmes; establishment of resource centres; support for educational initiatives; teacher professional development	Expansion of access to education in rural regions; advancement of inclusive practices; implementation of individual learning pathways
Uzbekistan	Concept for the Development of the Public Education System until 2030	Digitalisation of education; personalisation of learning; development of teachers' professional competencies	Creation of national educational platforms; development of adaptive learning materials; modernisation of assessment systems; integration of international best practices	Adoption of adaptive educational technologies; advancement of blended learning; increased efficiency of the educational process

Source: developed by the authors based on Rak-Młynarska (2022)

In Bulgaria, the key instrument for individualisation has been the national program, Digital Bulgaria 2025, which focuses on modernising educational infrastructure and implementing digital technologies. Targeted funding, school IT environment upgrades, and teacher training are implementing the program, expanding students' access to modern educational resources. The outcomes include a marked improvement in teachers' digital literacy and the accessibility of educational content, fostering conditions conducive to an individualised learning approach. In Kyrgyzstan, the Education for All (2021-2040) strategy emphasises educational accessibility, inclusivity, and curriculum flexibility. Through the establishment of resource centers, individual learning pathways, and teacher professional development, measures are being implemented to align education with the actual needs of each learner, particularly in rural areas. The program contributes to widening participation and the gradual introduction of individualised approaches even under resource constraints. The Concept for the Development of Public Education until 2030 in Uzbekistan focuses on deep digitalisation, personalising learning, and improving teacher qualifications. The country is actively investing in the creation of national platforms, adaptive learning materials, and the implementation of new assessment systems. The country pays particular attention to integrating international best practices, accelerating modernisation, and adopting flexible, personalised learning models. Among the results are the introduction of blended and adaptive learning formats, as well as increased efficiency in the educational process.Thus, all three countries demonstrate a comprehensive approach to individualised education at the state level. The implemented programs contribute not only to technical modernisation but also to the

cultural transformation of educational practices, making the learning process more flexible, inclusive, and student-centered.

A comparative analysis of the interaction between traditional and innovative methods of individualising education in the studied countries has revealed several key patterns. The integration of diverse educational approaches can significantly enhance the adaptability of the learning environment and create conditions for the natural development of students.In Bulgaria, there is a trend towards an organic combination of traditional pedagogical practices with digital innovations, ensuring continuity in the educational process while modernising it. In Kyrgyzstan, a crucial role is played by adapting innovative approaches to local conditions and cultural specificities, accounting for resource limitations in certain regions. In Uzbekistan, a strategy of gradual integration of modern methods into the traditional educational paradigm is being implemented, with an emphasis on preserving national educational traditions (Saha & Adhikari, 2023).

The analysis of the effectiveness of various approaches to individualising education in the context of student adaptation to new learning environments has shown that the most productive strategies combine traditional methods of pedagogical support with innovative approaches and digital tools. A comparison of the educational systems in the studied countries has also revealed significant differences in the willingness of the teaching community to adopt individualised learning approaches. As evidenced by the results of the content analysis of educational programs and strategic documents in Bulgaria, the development of teachers' adaptive competencies is integrated into the system of continuous professional development, creating a sustainable foundation for implementing personalised approaches. In Kyrgyzstan and Uzbekistan, a more fragmented approach to developing teachers' relevant competencies is observed, though increasing attention is being paid to this area at the state level in the 21st century.

The creation of an inclusive educational environment is of particular importance in the context of individualising education. The study's findings indicate that all three countries implement programmes to ensure educational accessibility for learners with special educational needs, though the level of development varies. Bulgaria has introduced comprehensive inclusive education strategies, including the adaptation of learning materials, teacher training, and modifications to the educational environment. In Kyrgyzstan and Uzbekistan, inclusive education is at an early stage of development, with a focus on establishing basic infrastructure and raising awareness among the teaching community.

The geographical context also significantly influences the processes of educational individualisation. In regions with limited technological infrastructure (rural areas of Kyrgyzstan and some regions of Uzbekistan), the emphasis is placed on traditional methods of individualisation and socio-pedagogical support for learners. In urbanised areas and centres with developed digital infrastructure (major cities in Bulgaria and capital regions of Kyrgyzstan and Uzbekistan), digital tools for personalising education and innovative pedagogical practices are being actively implemented.

The study revealed that the individualisation of education and student adaptation are priorities for the education systems of Bulgaria, Kyrgyzstan, and Uzbekistan. Three key directions were identified: traditional methods (consultations, differentiated instruction), digital technologies (adaptive platforms, mobile applications, learning management systems), and innovative approaches (project-based learning, gamification, peer-to-peer learning, and blended learning). The most effective strategies were found to be comprehensive ones, combining different methods and supported by state programmes. The development of individualisation depends on teacher training, technical infrastructure, and consideration of local contexts, particularly in rural regions.

The analysis of approaches to individualising the educational process and student adaptation in the education systems of Bulgaria, Kyrgyzstan, and Uzbekistan allows for a comparison of the obtained results with contemporary research in this field. Assessing the effectiveness of various individualisation methods requires a multidimensional analysis, accounting for both technological and pedagogical aspects of the educational process.

The study's findings support the conclusions of Cook et al. (2018) that precise adaptation of the educational process to learners' individual needs is crucial for achieving optimal educational outcomes. The authors noted that individualised learning should be based on a systematic analysis of students' needs and include continuous monitoring of the effectiveness of the approaches employed. This is particularly relevant for the education systems of the studied countries, where significant diversity exists in socio-cultural contexts and levels of access to digital technologies. The identified effectiveness of a combined approach that integrates traditional methods with digital tools aligns with the findings of Moltudal et al. (2020), who examined the implementation of adaptive learning technologies in the context of personalised education. The authors emphasised that the successful integration of adaptive technologies requires not only appropriate technical infrastructure but also a transformation of pedagogical approaches. The results of this study further reinforce this understanding, demonstrating that in countries with varying levels of technological development, such transformation occurs at different paces and intensities.

An analysis of traditional methods of individualised education in the studied countries revealed their sustained effectiveness, particularly in regions with limited access to digital technologies. This aligns with the historical analysis of modular learning conducted by Goldschmid and Goldschmid (1973), who highlighted the potential of a modular structure in the educational process for personalising instruction. Its core principles – dividing material into manageable modules, adapting the pace of learning, and providing timely feedback – remain relevant in contemporary educational settings, as corroborated by the findings of this study.

A crucial aspect of individualising education is the establishment of an inclusive learning environment. As this study demonstrates, all three countries implement programmes to ensure educational accessibility for learners with special educational needs (SEN), albeit with varying degrees of success. These observations resonate with the conclusions of Imaniah and Fitria (2018), who emphasised the necessity of a systemic approach to inclusive education, encompassing the adaptation of learning materials, teacher training, and modifications to the educational environment. At the same time, this study expands upon their findings by identifying specific barriers to creating an inclusive learning environment within the contexts of the examined countries.

The question of the impact of state policies on educational individualisation also warrants attention. Hardman and Dawson (2008) observe that legislative frameworks can either facilitate or hinder the implementation of customised learning approaches. The results of this study support this conclusion, demonstrating that in countries with more flexible educational policies (e.g., Bulgaria), the individualisation of instruction progresses more dynamically than in nations with more rigidly regulated educational systems.

Digital technologies play a pivotal role in individualising the educational process. The study's findings indicate that adaptive learning platforms, learning management systems (LMS), and mobile applications are becoming key tools for personalising instruction. This is consistent with research by Kem (2022), who asserted that personalised and adaptive learning is a central direction in the evolution of educational platforms in the era of digital and smart learning. However, this study reveals that the efficacy of digital technologies significantly depends on educators' digital literacy levels and the quality of technical infrastructure – a particularly salient issue in countries with varying economic development levels.

Machine learning technologies present new opportunities for individualising education. Luan and Tsai (2021) conducted a systematic review of machine learning applications in education and underscored its potential for developing adaptive learning systems. The present study corroborates these findings, demonstrating that educational platforms incorporating artificial intelligence (AI) elements can more precisely tailor content to learners' individual needs. Nevertheless, in countries with limited technological access (such as certain regions of Kyrgyzstan and Uzbekistan), the implementation of such systems faces substantial barriers.

The transition to personalised education necessitates not only technological innovation but also a change in the educator's role. MacLeod et al. (2017) highlighted the need to redefine individualised educational planning, stressing the importance of involving all stakeholders in the process. This study builds upon this perspective by identifying the necessity of developing educators' specific competencies to effectively individualise the learning process across diverse cultural and technological contexts.

An important aspect of educational individualisation is supporting learners during transitions to new educational conditions. Cummings et al. (2000) emphasised the significance of personalised transition planning for students with special educational needs. The findings of the present study corroborate the relevance of this approach in general education, demonstrating that adaptive educational systems facilitate smoother transitions for students into new learning environments.

The evaluation of different e-learning approaches is also of interest in the context of educational individualisation. Moreno-Guerrero et al. (2020) examined the efficacy of e-learning in teaching mathematics to adult learners and identified its positive impact on educational outcomes. This study builds upon these findings, showing that e-learning can serve as an effective tool for individualising education, provided it is adapted to learners' specific needs and cultural contexts.

The development of teachers' adaptive competencies is a key factor in successful educational individualisation. Schipper et al. (2017) demonstrated that collaborative lesson study practices can achieve professional growth in adaptive teaching competencies. The results of this study align with this conclusion, underscoring the necessity of targeted development of teachers' adaptive competencies across all three examined countries.

The study's findings support Kaput's (2018) argument that transitioning to student-centred, personalised education requires systematic changes at all levels of the educational system. These changes encompass the transformation of pedagogical practices, the integration of new technologies, the adaptation of educational policies, and the development of relevant competencies among all stakeholders in the educational process.

The study confirmed the critical importance of an inclusive educational environment as a fundamental element of effective learning individualisation. The identified differences in approaches to inclusive education development in Bulgaria, Kyrgyzstan, and Uzbekistan reflect broader trends in these countries' educational systems. In Bulgaria, comprehensive strategies based on European standards provide a robust framework for personalising learning for all student categories. In Kyrgyzstan and Uzbekistan, despite being at an early stage of systematic inclusive practice development, positive progress is evident in establishing legal frameworks and raising awareness among educators – consistent with Lindner and Schwab's (2020) findings on the phased advancement of inclusive education.

The integration of traditional and innovative approaches to individualised learning holds particular value in countries with varying levels of technological development. This study reveals that a balanced approach – incorporating both digital technologies and the merits of traditional pedagogical methods – ensures the most effective student adaptation to new learning environments.

It is also important to note that this cross-cultural examination of educational practices across three countries has identified universal principles of effective learning individualisation that are applicable across diverse educational contexts, irrespective of technological advancement or socio-economic conditions. The experiences of Bulgaria, Kyrgyzstan, and Uzbekistan demonstrate that the key factor in successful individualisation is not merely technological capacity but rather a systematic approach to educational transformation.

The study reaffirms the relevance and validity of contemporary research on educational individualisation. It establishes that combining traditional pedagogical methods with digital and innovative technologies yields the highest efficacy in adapting students to new learning environments. The results align with existing scholarly approaches to personalised learning and highlight the importance of a systemic, multi-component strategy for reforming educational practice. This confirms

that successful learning individualisation requires not only technological integration but also pedagogical flexibility tailored to a country's cultural and infrastructural context.

4. CONCLUSIONS

A comprehensive study of approaches to the individualisation of the educational process and student adaptation to new learning environments in Bulgaria, Kyrgyzstan, and Uzbekistan has revealed significant characteristics and patterns in the development of personalised learning within different educational systems.

Firstly, it has been established that traditional methods of educational individualisation (differentiated instruction, individual consultations, tutoring, and adaptive curricula) retain their effectiveness and relevance in all studied countries, particularly in regions with limited access to digital technologies. The two most effective approaches were found to be differentiated instruction, which accounts for individual learning paces, and individual consultations, which provide a personalised approach to overcoming academic difficulties. However, several systemic limitations were identified, among which the most substantial are high teacher workloads, challenges in scaling personalised approaches, and unequal access to educational services.

Secondly, digital technologies demonstrate considerable potential for individualising the educational process, yet their effectiveness directly depends on several key factors: teachers' digital literacy, the quality of technical infrastructure, the integration of technology into the educational process, and the alignment of digital tools with the cultural and educational context. An analysis of educational practices in the studied countries revealed that the most effective strategies are those involving comprehensive digital transformation, which considers not only technological aspects but also the need for teacher training and the adaptation of educational content to national specificities.

Thirdly, the study found that innovative methods of student adaptation (project-based learning, gamification, peer-to-peer learning, and adaptive blended learning) foster high levels of student engagement and promote the development of critical thinking, communication skills, and self-directed learning. The most effective method in the context of adapting to a new educational environment was project-based learning, which has been successfully implemented in all three countries while accounting for national specificities: in Bulgaria, the focus is on interdisciplinary projects; in Uzbekistan, on vocationally orientated projects; and in Kyrgyzstan, on environmental projects.

The study identified promising directions for the development of educational individualisation, including the integration of artificial intelligence into adaptive learning systems, advancements in virtual and augmented reality technologies for creating personalised learning environments, and the refinement of educational data analytics tools for more accurate assessment of individual student progress. A key limitation of this study is its predominantly theoretical nature, necessitating further empirical validation of the identified patterns across diverse educational contexts.

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Acknowledgment: This research did not receive any outside support, including financial support.

Conflict of interest: The authors declare no conflict of interest.

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Received: October 18, 2025; **revised**: December 12, 2025; **accepted**: March 2, 2026; **published**: March 30, 2026.

Іренчієва Гульнура, Карабаєва Еліза, Каримшаков Сейтбек, Дамянов Калоян, Абдусамадов Зафарбек. Індивідуалізація освітнього процесу та підтримка студентів в адаптації до нового середовища навчання: Оцінка сучасних підходів.*Журнал Прикарпатського університету імені Василя Стефаника*, **13** (1) (2026), 99-114.

Дослідження мало на меті проаналізувати ефективність традиційних, інноваційних і цифрових підходів до індивідуалізації навчального процесу та адаптації студентів в освітніх системах Болгарії, Киргизстану та Узбекистану. У статті використано порівняльний, системний, змістовий і якісний аналізи для оцінки індивідуальних підходів до навчання в зазначених країнах, ураховуючи нормативну базу, цифрові інструменти, педагогічну практику та соціокультурний контекст. Результати виявили три ключові виміри освітньої індивідуалізації: традиційні методи, цифрові технології та інноваційні підходи. Окреслено значення цифрових інструментів і фактори, що впливають на їх ефективність, зокрема цифрову грамотність освітян, якість технічної інфраструктури та культурно-освітній контекст. Проаналізовано інноваційні методи адаптації студентів, такі як: проєктне навчання, гейміфікація, навчання «рівний-рівному» та адаптивне змішане навчання. Дослідження показало, що найбільш ефективними є комплексні стратегії, які поєднують традиційні методи з цифровими та інноваційними технологіями, а ключовими факторами успіху слугує системний підхід, а також урахування національного контексту та цілеспрямована підготовка вчителів. Порівняльний аналіз виявив значні розбіжності в готовності освітніх систем до впровадження персоналізованого навчання: Болгарія демонструє найбільш системний підхід, інтеґруючи цифрові інновації в традиційні практики, тоді як Киргизстан і Узбекистан знаходяться в процесі розвитку інфраструктури для індивідуалізації освіти з акцентом на адаптації методологій до місцевих умов і наявних ресурсів. Практичне значення дослідження полягає в розробці індивідуальних моделей індивідуалізованого навчання з урахуванням соціально-економічних особливостей освітніх систем Болгарії, Киргизстану та Узбекистану. Наукова новизна дослідження – у всебічному порівняльному аналізі підходів до індивідуалізації освіти та адаптації студентів у Болгарії, Киргизстані та Узбекистані, який вперше інтеґрує традиційні методи, цифрові технології та інноваційні стратегії з урахуванням технологічних та соціально-культурних особливостей цих країн.

Ключові слова: навчальне середовище, педагогічний супровід, цифрові технології в освіті, персоналізоване навчання, психологічна адаптація.