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The influence of Chinese social media platforms on student public communication

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Abstract. The profound reshaping of public communication by Chinese social media platforms necessitates a critical analysis of their distinct impacts on the contemporary public sphere, with particular emphasis on the student population and the educational process. This article aimed to systematically analyse and compare the operational logics of Weibo, WeChat, and Douyin, evaluating their specific influences on the formation and fragmentation of rational public discourse, especially among students. A comparative case study methodology, grounded in a theoretical framework of the public sphere, was employed to examine the three dominant platforms. The analysis traced Weibo's transition from an open square for public agenda-setting to a space dominated by commercialisation and entertainment, which shrinks the arena for substantive debate and models communication norms for young users. WeChat's private, strong-tie ecosystem was shown to foster information encapsulation, creating formidable circle barriers that hinder the cross-cutting flow of public information and can limit students' exposure to diverse perspectives. Douyin's core algorithmic distribution mechanism, while enabling unparalleled content delivery efficiency, simultaneously intensifies cognitive domestication and systematically deconstructs complex public issues into simplified entertainment. These platform dynamics carry significant pedagogical, psychological, and sociological consequences for students, including decreased attention spans, diminished capacity for critical thinking, and impacts on social cohesion through fragmented discourse. The practical value of this research lies in its potential to provide a structured framework for regulators, platform designers, and educators to develop targeted strategies – such as algorithmic transparency, multi-stakeholder governance, and enhanced digital literacy curricula – to mitigate these negative effects and foster a more robust, inclusive, and educative public communication environment

Keywords: public sphere; algorithmic recommendation; information cocoon; closed-loop ecosystem; digital literacy

■ INTRODUCTION

The transformation of China's digital public sphere, driven by the distinct architectures of its major social media platforms, represents a critical area of inquiry for understanding modern societal discourse, particularly as it shapes

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the communicative practices and cognitive development of students. These platforms are not mere conduits of information but active pedagogical agents that structure public participation, shape collective consciousness, and redefine the dynamics of social governance for the younger generation. The shift from a monolithic media environment to a fragmented, algorithmically-mediated communication ecology has profound implications for the formation of public opinion, the legitimacy of civic engagement, and the very fabric of social consensus. For students, who are both primary users and formative subjects within this ecology, these platforms fundamentally influence educational outcomes, social learning, and the development of civic identity. Examining the operational logics of these digital spaces is therefore essential to comprehend the contemporary reconfiguration of public life, its attendant challenges and opportunities, and its direct consequences for the educational process.

Recent scholarly work has extensively documented and analysed the evolution of these platforms and begun to note their intersection with educational contexts. The trajectory of Weibo has been a particular focus. Research by S. Huang & X. Wang (2025) elucidated how capital logic has systematically re-engineered the platform's agenda-setting function, where trending searches have transitioned from reflecting public affairs to being dominated by entertainment marketing. This commercial imperative, as their findings suggest, crowds out serious discourse and disrupts the normative order of online communication, presenting students with a public sphere model that prioritizes sensation over deliberation. Concurrently, the platform's historical role in facilitating social mobilisation has been critically re-examined, with scholars like Y. Liao (2020) warning of a potential "demise of the public sphere" under such pressures, a decline that impoverishes the discursive environment essential for civic education. Parallel research has investigated the enclosed communication model of WeChat. S. Chen *et al.* (2021) demonstrated how the platform's strong-tie networks and "whitelist" mechanisms fundamentally alter information flow, creating a "private network communication" model that protects privacy but simultaneously limits the dissemination of public issues. For students, this often means their primary digital social worlds are circumscribed by homogenous peer and family networks, potentially reinforcing existing viewpoints and limiting exposure to societal diversity. Empirical studies by S. Meng *et al.* (2022) quantitatively confirm this, revealing a significantly slower propagation velocity for public information on WeChat. Further analysis by M. Zhang *et al.* (2024) identifies a spatiotemporal paradox within WeChat's ecosystem: while the initial diffusion of public issues is delayed, the penetration intensity is ultimately greater due to the trust inherent in strong social relationships, a mechanism they term "relational credit transmission", which can powerfully shape student attitudes.

The rise of short-video platforms, particularly Douyin, has introduced a new dimension to this scholarly discourse, centred on the power of algorithmic curation and

its profound impact on youth cognition. K. Cotter (2019) exposed how the platform's core metric of "long-term user value" reduces complex human development needs into quantifiable engagement data, fostering a performative and emotionally-driven form of public participation. The persistent problem of the "information cocoon", despite purported algorithmic interventions, has been a recurring theme, with direct consequences for student attention and critical thinking. Research indicates that both human cognitive instincts for energy conservation and the underlying commercial logic of platforms systematically marginalise in-depth discussion in favour of entertainment-oriented content, directly challenging educational goals of sustained focus and analytical depth. Furthermore, studies on platform governance, such as those by Y. Yang (2023), draw on critical theory to argue that moves toward algorithmic transparency can often function as a rhetorical strategy to re-legitimize power rather than genuinely democratise it. In response to these systemic challenges, scholars like R. Jiang (2025) have proposed normative frameworks for reconstruction, suggesting the incorporation of "information entropy" into regulatory models and the establishment of oversight bodies, termed "algorithmic parliaments", to reintroduce democratic accountability into the algorithmic curation of public discourse.

This body of literature effectively maps the individual pathologies of China's major social platforms – Weibo's commercial alienation, WeChat's structural enclosure, and Douyin's algorithmic domestication. However, a comparative analysis that systematically contrasts their distinct mechanisms for structuring public communication, and their collective impact on the integrity of the digital public sphere – especially with a dedicated focus on the student experience and educational implications – remains underexplored. Therefore, the purpose of this study was to conduct a systematic comparative analysis of the architectural and algorithmic logics of Weibo, WeChat, and Douyin, to elucidate their respective roles in enabling, constraining, and reshaping rational-critical public discourse in China, and to explicitly articulate the pedagogical, psychological, and sociological consequences for the student population.

■ MATERIALS AND METHODS

This research was conducted in 2024. The study employed a qualitative approach, specifically utilising a multiple-case study design integrated with qualitative content analysis. This methodological framework was selected to facilitate an in-depth, contextual examination of the complex interplay between technical architectures, commercial imperatives, and public values on digital platforms. By analysing specific platforms and embedded public communication incidents as cases, this approach allowed for a nuanced understanding of how these forces collectively shape the digital public sphere in China. The empirical data for this analysis consisted of publicly documented communication incidents and platform

features drawn from three major Chinese social media platforms: Weibo, WeChat, and Douyin (the Chinese version of TikTok). These platforms were chosen as they represent three distinct and dominant models of digital communication in China: Weibo embodies an open, broadcast-oriented microblogging model; WeChat represents a closed, relationship-based ecosystem; and Douyin exemplifies a short-video, algorithmically-driven content universe. This selection enabled a comparative analysis across different technical and social logics. Specific cases analysed include the 2011 Wenzhou train accident and the “Free Lunch Project” on Weibo; the diffusion patterns of epidemic science information and the implementation of the “Take a Look” feature on WeChat; and the algorithmic recommendation mechanisms and content governance issues on Douyin. The information base was supplemented by a review of academic literature, including foundational theories from communication studies (e.g., Habermas’s public sphere) and empirical findings from prior research on these platforms, cited within the text and spanning publications from 2007 to 2025. The timeframe for the analysed platform developments and public events primarily covers their key evolutionary phases from their launches (e.g., 2009 for Weibo) up to recent regulatory and algorithmic changes circa 2023–2025.

The method of analysis involved a systematic application of theoretical concepts to interpret the empirical observations. Key theoretical frameworks – such as the structural transformation of the public sphere, the logic of capital, algorithmic governance, and the concept of information cocoons – were used as analytical lenses. For each platform case, the research process followed a consistent sequence: first, describing the core technical architecture and business model; second, identifying pivotal public communication events or features inherent to that platform; and third, interpreting how the observed outcomes resulted from the dynamic interaction between technology, commerce, and user behaviour. This iterative process of moving between empirical data and theoretical concepts allowed for the drawing of robust conclusions about each platform’s unique influence on public discourse and the identification of overarching patterns across the Chinese social media landscape. The final synthesis compared the findings from the three cases to articulate the broader implications for the digital public sphere.

■ RESULTS AND DISCUSSION

Systematic case studies of the selected platforms – Weibo, WeChat, and Douyin – reveal a clear observation of the complex interplay between technological rationality, capital logic, and public values, and the profound impact this interplay has on the construction of the digital public sphere. Each platform represents a distinct paradigm of communication, and their evolutionary trajectories collectively outline the developmental context and inherent tensions within China’s online public space.

The rise of Weibo’s public sphere and the alienation of communication under commercial logic

The birth of Weibo marked a paradigm shift in China’s public communication from a traditional media monopoly to one of universal participation. Upon its initial launch in 2009, its open architecture, modelled after Twitter, quickly unleashed the energy of grassroots expression. However, the real catalyst for growth was its “celebrity strategy” – inviting over 5,000 film and television stars and academics to undergo real-name verification, establishing a vertical communication chain of “big Vs” and “fans”. This design exponentially increased the penetration of information. During the 2011 Wenzhou train accident, netizen @Yuan Xiaoyuan live-streamed the rescue efforts, a single post garnering over a million retweets (Sina.com, 2011), forcing traditional media to follow up and demonstrate for the first time the power of social media to set the public agenda. During its heyday (2013–2018), the platform became the digital hub of social movements. In 2011, the Free Lunch Fund public fundraising initiative was launched. Starting in 2012, the Free Lunch Project encouraged schools offering meals to open Weibo accounts, where they would update student meal plans daily and publicly disclose income and expenditure information, inviting sympathetic netizens to monitor the situation. In addition to public welfare projects, socially sensitive issues such as the “Lei Yang case” and the “Red Yellow Blue incident” have entered the public eye thanks to the voices of lawyers and scholars, forming a unique governance path of “Weibo trial-judicial follow-up”. However, openness is a double-edged sword, and rumours are rampant around popular social events. For example, the fake news story “Shanghai girl flees rural Jiangxi” has garnered over 100 million views, yet debunking it lags for over 48 hours. Algorithmic recommendation mechanisms exacerbate this dilemma. To maximise user time, platforms prioritise content that polarises sentiment, leading to the nationalist rhetoric of the “Xu Kexin incident” dominating the trending search list for a prolonged period. As mentioned by W. Kuang & T. Wang (2025), even if a post is marked “no longer recommended” on Weibo’s homepage, it may be re-recommended over time and due to factors such as the rise of capital logic.

A deeper alienation stems from its commercialisation. Weibo’s commercialisation journey began in 2012, when it experimented with various business models, including advertising, VAS-style user-paid services, and e-commerce. In 2013, Sina Weibo and Alibaba entered into a strategic partnership, acquiring an 18% stake in Sina Weibo for USD 586 million. The two parties engaged in in-depth collaboration in areas such as user account interconnection, data exchange, online payments, and online marketing, furthering Weibo’s commercial development. Following Alibaba’s investment, Weibo’s trending searches shifted from public issues to entertainment marketing – celebrity weddings and variety show topics consistently dominated the charts. Social-related trending

searches continued to decline in popularity and took on an entertainment-focused orientation. Trending searches were originally designed based on data from user searches, following, browsing, likes, and comments. After algorithmic processing, they extracted the most popular terms and topics for push notifications, often serving as a barometer of public opinion. Therefore, trending searches reflect attention, and increasing attention can help set the user agenda, potentially influencing user psychology and behaviour. Under the logic of capital, user attention equals traffic, making celebrity “trending” one of the fastest and most convenient ways to increase visibility and value (Xu & Wang, 2025). This has led to practices like “buying trending searches from platforms” and “hiring online influencers” to manipulate search results, significantly disrupting the order of online communication. Furthermore, the influx of entertainment topics on trending searches naturally crowds out discussion space for serious social issues, limiting users’ – and particularly students’ – opportunities to engage in public discourse and hindering the formation of social consensus and the guidance of correct social values. For students, this environment models a public discourse where visibility is purchased rather than earned through merit, potentially fostering cynicism about civic participation and undermining lessons in critical media literacy.

Weibo’s entertainmentisation is the result of conspiracies among user behaviour, algorithmic mechanisms, and capital logic. The plummeting share of social topics reflects the public sphere’s degeneration from a “supervisory space” to an “emotional market”. However, its rebound in 2021 demonstrates that policies and user awareness can partially correct this imbalance. When the traffic production efficiency of entertainment far exceeds the “production and dissemination” costs of public topics, only through algorithmic weighting and topic packaging can competitiveness be rebuilt. Otherwise, as mentioned by Y. Xie & R. Feng (2012), the “demise of the public sphere” will become an inevitable outcome. Consequently, the future of Weibo as a viable public sphere depends on a fundamental recalibration of its structural priorities, where the pursuit of commercial traffic must be balanced against the necessity of maintaining a transparent and intellectually rigorous space for civic engagement.

The dialectics of WeChat’s stratified communication and attempts to breach the walls

WeChat’s communication mechanism, built on strong social connections, has fostered a unique “private network communication” model. WeChat messages are visible only to the sender and receiver, who are typically well-known friends, creating a stronger sense of privacy. In terms of communication relationships, users can select designated individuals to form group chats and specify visibility within their Moments, thereby, as stated by L. Peng (2020), limiting the reach of information and fundamentally changing the flow of public information. Its core impact lies in breaking public communication into multiple layers. At the level of acquaintances, peer-to-peer communication and Moments form a closed communication chain, with information circulated only among mutually connected friends and not forwarded. This protects privacy but also limits the spread of public issues.

WeChat’s fundamental restructuring of public communication lies in weaving atomised individuals into multi-layered information cocoons. The “whitelist” mechanism of Moments (visible only to friends and without forwarding) creates a “pseudo-private space” but also disrupts the public information dissemination chain. Research by S. Meng *et al.* (2022) shows that the same epidemic science article reached 2 million people on Weibo in 3 hours, but took 72 hours to reach the same number on WeChat Moments, and its reach was far lower than that of open platforms. While the public account system appears to be breaking with the centralisation of traditional media, it actually creates a more insidious monopoly. Its recommendation algorithm relies on a multi-dimensional model combining “user behaviour characteristics, content characteristics, and environmental characteristics”, but the model parameters fluctuate in real time and are opaque, creating an “algorithmic black box”. Its recommendation algorithm, based on the “trust-weighted” social relationship chain, makes it difficult for counterintuitive information to penetrate. Table 1 presents comparative analysis that highlights the fundamental differences in how public information propagates through WeChat’s relationship-centric ecosystem versus Weibo’s open broadcasting platform. WeChat’s enclosed structure fosters deeper engagement within trusted circles but limits information diversity, while Weibo’s radial architecture enables wider reach but with potentially weaker message retention.

Table 1. Comparative analysis of public information dissemination models: WeChat vs. Weibo

Feature	WeChat model	Weibo model
Network structure	Enclosed, multi-layered circles	Open, radial multi-node network
Connection type	Strong social ties (friends/family)	Weak social ties (followers/following)
Diffusion speed	Slower initial propagation	Rapid, exponential spread
Information diversity	Limited by social circles	High diversity across domains
Social pressure	High (maintaining group harmony)	Low (pseudonymous environment)
Cross-group flow	Sparse connections between circles	Frequent cross-group dissemination
Core mechanism	Relationship-based filtering	Algorithmic recommendation
Penetration depth	High within circles	Broad but potentially superficial
Typical content flow	Information → Strong ties → Closed groups	Information → Multiple nodes → Mass audience

Source: compiled by the authors based on platform architecture analysis and empirical studies by S. Chen *et al.* (2021), S. Meng *et al.* (2022)

Recognising the dangers of closed-off content, the WeChat team launched the “Take a Look” feature in 2020 in an attempt to break through this barrier. By implementing a dual-track approach, namely “Friends Watching” (social recommendations) and “Hotspot Square” (algorithmic recommendations), local media accounts gained increased exposure. In 2023, WeChat implemented a hybrid “subscription + recommendation” distribution mechanism, introducing the “Friends ♥” portal to aggregate content liked by friends, attempting to break down closed-off content and provide exposure for niche accounts. However, this mechanism reinforced the filtering of information by social relationships, leaving users exposed to content that was essentially endorsed by their network of acquaintances, creating an “advanced form of information cocoon” – for example, health education information needed to be forwarded by friends before it could reach middle-aged and elderly people. Mini-programs expanded scenario-based communication, embedding information within services like shopping and government affairs (such as the Health Code mini-program). However, the binding of services and content squeezed practical information out of public discussion, fragmenting public attention.

The closed-loop nature of the WeChat ecosystem is also reflected in the evolution of public opinion. Opinions converge faster within WeChat groups than on open platforms, and strong ties suppress dissenting views. This dynamic is acutely present in student peer groups, where the pressure for social conformity can actively discourage critical questioning or the introduction of alternative viewpoints on public matters, directly impacting the development of independent critical thinking skills. This often leads to discussions of major public events on WeChat lagging behind those on Weibo, yet the platform’s penetration is greater. The closed-loop nature of the WeChat ecosystem, through its strong network of relationships, fosters a unique paradigm for public opinion evolution: the communication structure formed by real-world social ties inherently suppresses diversity of opinion. According to N. Wuestenenk *et al.* (2025), users, driven by the need to maintain relational capital (identity bonds with acquaintances, concerns about social evaluation, and shared interests), actively exercise cognitive self-regulation, leading to a weakening willingness to express dissenting opinions. This has clear sociological consequences for students, as it reinforces in-group/out-group mentalities and can impede the development of the skills necessary for navigating a pluralistic society, potentially eroding broader social cohesion. Furthermore, the algorithm’s collaborative filtering mechanism (content push based on weighted group interaction) and group self-regulation (group members voluntarily removing controversial topics) create a dual positive feedback loop, systematically accelerating the convergence of group opinion to a single steady state. This mechanism also triggers a spatiotemporal paradox in the evolution of public opinion: the high trust threshold of strong-relationship networks significantly prolongs the initial diffusion cycle

of public issues, creating a lag relative to open platforms (Bruns, 2023). However, the private communication environment, coupled with the social endorsement effect (the transferability of relational credit), profoundly restructures cognitive acceptance patterns, exponentially increasing the intensity of information penetration. This closed-loop structure essentially reconstructs the core contradiction of Habermas’s theory of the public sphere. It both undermines the foundation of diverse dialogue through the relational entropy reduction mechanism (social pressure → expression suppression → viewpoint purification), and achieves the covert internalisation of values through a deep persuasion chain (trust transmission → cognitive inoculation → belief solidification).

Cognitive domestication within the algorithmic empire of Douyin and the crisis of publicness

In the realm of public communication, Douyin’s algorithms are quietly reshaping the logic of information power. The platform’s professed “technological neutrality” forms a profound paradox with its actual role as a public agenda-setter. When collaborative filtering models transform user behaviour data into mathematical probabilities for content push, the traditional media editorial “gatekeepers” are replaced by a formula designed by algorithm engineers: “user behaviour probability x value weight”. This power shift has a dual effect: while niche cultural content like endangered operas garner millions of views through interest graphs, the visibility of major social issues is reduced to the results of neural networks fitting momentary emotional preferences. As stated by F. Wen & X. Xie (2022), even more alarming is the platform’s touted North Star metric of “long-term user value”, which compresses human development needs into quantifiable interaction data (share rate, follow-up volume), fostering performative public participation. For students, this cultivates a mode of engagement with public issues that is fragmented, emotionally reactive, and devoid of sustained inquiry, directly contradicting pedagogical aims of deep learning and reasoned analysis. Figure 1 illustrates Douyin’s core recommendation algorithm, which prioritises content based on user engagement data and platform value metrics. This process systematically disadvantages public affairs content, as its lower immediate engagement potential and frequent need for entertainment-oriented repackaging often result in reduced visibility within the final content push queue. Faced with criticism of the “information cocoon”, the platform’s technological overhaul has run into a structural dilemma (Chaoub *et al.*, 2022). The diversity exploration mechanism, which claimed to enable algorithmic preselection to surpass random recommendations in diversity, has, in practice, encountered three failures. Human cognitive instincts for energy conservation lead users to actively express their preferences, leading to a sharp drop in information diversity. The algorithm’s attempts to break through its comfort zone have become superficial correlations. The invisible constraints of commercial logic force cross-domain content into a

tool for extending user time (e.g., 50 consecutive entertainment videos with one popular science piece inserted). Public issues must survive through entertainment-oriented translation, and in-depth discussion is systematically marginalised. This creates a significant pedagogical challenge: students' ability to "decode" content may be replaced by concrete symbols like short videos and memes, while their capacity to "understand" complex narratives atrophies due to a lack of in-depth reading training. When both decoding and comprehension are compromised, critical reading ability collapses, representing a profound degradation of the cognitive skills essential for education and informed citizenship. At the governance level, the "human + machine" collaborative model exposes deep contradictions. Manual review focuses on blocking high-risk content while allowing public harm in grey areas (regional discrimination and occupational stigmatisation). Machine review is unable to detect the rhetoric traps employed by marketing accounts, such as those that spread rumours through fake accounts and then delete them. When algorithms become the "unconscious collusion" of rumours, the cornerstone of social trust is crumbling.

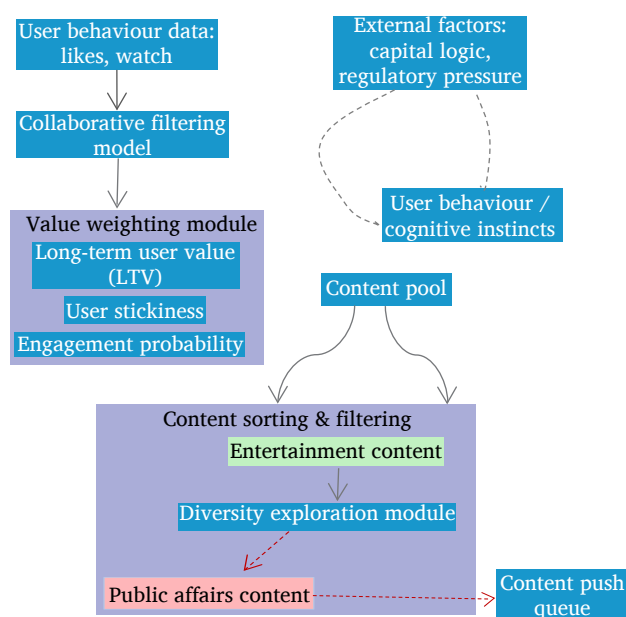


Figure 1. Simplified schematic of Douyin's core recommendation algorithm

Source: compiled by the authors based on the analysis of Douyin's publicly disclosed algorithm principles and governance framework

The platform's push for algorithmic transparency is essentially a new power-obscuring strategy. A schematic diagram released by Douyin's Security and Trust Centre entangles public discussion in a maze of technical jargon, cleverly sidestepping key contradictions. The selective transparency of hot-spot handling allows decisions like Zhang Lan's account suspension to be dismissed as simply violating community norms. The specific weighting of the

North Star metric "long-term user value" (such as the proportion of "long-term consumption of the author") remains undisclosed, leaving the public with little basis for questioning when migrant workers' rights protection videos are under-represented. Policy responses have been even more passive – while the "Clear and Bright Operation" mandates a crackdown on homogenised content push, the platform implemented "duplicate content filtering" without adjusting the core weightings of "diversity exploration" and "user stickiness" in its multi-objective modelling. According to H. Shen & L. Ni (2007), this performative nature of technological disclosure confirms communication scholar Tuchman's assertion that transparency can become a rhetorical tool for re-legitimizing power.

As stated by X. Wang *et al.* (2023), resolving this dilemma necessitates a reconstruction of the triple contract of public communication, drawing inspiration from the EU's Digital Services Directive to incorporate "information entropy" into regulatory frameworks. Platforms should be required to publish interest graph diversity coefficients (such as the proportion of cross-domain content) and develop user-customisable recommendation weight adjusters (such as a "public issue visibility" slider). At the level of consensus generation, traffic allocation should be tied to the public value of content, introducing a multi-faceted review mechanism involving media academia. Hot event interfaces should automatically aggregate reports from multiple sources (including statements from the parties involved, government announcements, and media investigations), and guiding cognitive depth through information architecture design. Reforming governance mechanisms requires upgrading the security centre to an "algorithmic parliament" – an oversight committee composed of user representatives, creators, and ethicists. This committee would advise on rule revisions and regularly publish "Information Diversity Reports" for public inquiry. As algorithms shift from "traffic engines" to "modulators of public discourse", transparency should go beyond the disclosure of technical parameters and move toward the democratisation of the logic of power operation. Turning off recommendation algorithms is not only an awakening of individual cognitive sovereignty, but should also be transformed into a social practice that reconstructs the communication contract. The real breakthrough lies in recognising the public crisis of the algorithmic empire, which is essentially the colonisation of human communicative rationality by technological rationality, according to Z. Zhao (2021). Only by elevating every resistance to the flow of information into a collective action to rebuild the ethics of communication can the digital square transform from an "arena of attention" into the "rational communicative space" envisioned by Habermas. In essence, this multifaceted approach – combining regulatory frameworks, user empowerment, and democratic oversight of algorithmic systems – represents a crucial pathway toward reclaiming agency within our digital ecosystems. The implementation of these measures facilitates the conscious shaping of socio-technical

environments that prioritise democratic discourse over mere engagement, thereby fostering digital spaces where public reason can truly flourish.

■ CONCLUSIONS

The comparative analysis of Weibo, WeChat, and Douyin revealed a fragmented and contested digital public sphere in China, where the ideal of rational-critical debate is persistently challenged by the underlying architectures of power, with profound implications for student development and the educational process. Weibo demonstrates how an initially open “digital square” can be reconfigured into an “emotional market”, modelling a commodified form of public visibility for young users. WeChat illustrates the paradox of the “walled garden”, where trust and penetration are achieved at the cost of discursive diversity, potentially stifling students’ exposure to divergent ideas and reinforcing social homogenisation. Douyin, as the dominant “algorithmic empire”, epitomises a shift where communicative rationality is domesticated by engagement-driven optimisation, directly threatening students’ attention spans and critical thinking capacities. Collectively, these platforms engineer the form and substance of public discourse in ways that can decrease attention, diminish critical analysis, and impact social cohesion – key concerns for educators and psychologists. The future of China’s online public sphere, and the quality of its civic education, therefore hinges on

forging new socio-technical contracts that embed public and educational value into platform design. This necessitates a multi-stakeholder effort involving regulators, platform designers, and educators to recalibrate the balance between technological efficiency, commercial interest, and the foundational requirements of a healthy democratic culture. Specifically, integrating robust digital literacy programs that teach students to critically navigate these algorithmic environments, advocate for algorithmic transparency that serves the public interest, and design educational interventions that counter cognitive fragmentation are essential steps toward mitigating these negative consequences and fostering a more educative and inclusive public communication environment for the next generation. Future research should, therefore, focus on longitudinal empirical studies to evaluate the long-term efficacy of these proposed interventions in enhancing student resilience against algorithmic manipulation and the erosion of critical discourse.

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Аннотация. Кытайдын социалдык медиа платформаларынын коомдук коммуникацияны терең өзгөртүүсү алардын заманбап коомдук чөйрөгө өзгөчө таасирин, өзгөчө студенттер популяциясына жана билим берүү процессине критикалык талдоону талап кылат. Бул макалада Weibo, WeChat жана Douyin платформаларынын иштөө логикасын системалуу талдоо жана салыштыруу, алардын рационалдуу коомдук дискурстун калыптанышына жана фрагментациясына, өзгөчө студенттер арасында тийгизген таасирин баалоо максат коюлган. Үч доминанттуу платформаны изилдөө үчүн коомдук чөйрөнүн теориялык алкагына негизделген салыштырма кейс-изилдөө методологиясы колдонулган. Талдоо Weibonун коомдук күн тартибин аныктоо үчүн ачык аянттан коммерциялаштыруу жана көңүл ачуу басымдуулук кылган мейкиндикке өтүүсүн байкаган, бул олуттуу талкуулар үчүн аянтты кыскартып, жаш колдонуучулар үчүн коммуникация нормаларын моделдейт. WeChatтын жеке, күчтүү байланыштар экосистемасы маалыматтын капсуляциясын өнүктүрөт, коомдук маалыматтын кесилиш потогун тоскоол кылган күчтүү чөйрө барьерлерин жаратып, студенттердин ар түрдүү көз караштарга жеткиликтүүлүгүн чектейт. Douyindin негизги алгоритмдик бөлүштүрүү механизми контенттин жеткирүүсүнүн теңдешсиз натыйжалуулугун камсыз кылганы менен, бир убакта когнитивдик доместикацияны күчөтүп, татаал коомдук маселелерди жөнөкөйлөштүрүлгөн көңүл ачууга системалуу деконструкциялайт. Бул платформа динамикалары студенттер үчүн олуттуу педагогикалык, психологиялык жана социологиялык кесепеттерди алып келет, анын ичинде көңүл буруу узактыгынын кыскарышы, критикалык ой жүгүртүү жөндөмдүүлүгүнүн төмөндөшү жана фрагменттелген дискурс аркылуу социалдык биримдиктин таасири. Изилдөөнүн практикалык баалуулугу регуляторлорго, платформа дизайнерлерине жана педагогдорго негативдүү эффекттерди жумшартуу жана коомдук коммуникациянын чың, инклюзивдүү жана билим берүүчү чөйрөсүн өнүктүрүү үчүн багытталган стратегияларды иштеп чыгууда – мисалы, алгоритмдик ачык-айкындык, көп тараптуу башкаруу жана санариптик сабаттуулук программаларын күчөтүү – структураланган алкакты берүү потенциалында жатат.

Негизги сөздөр: коомдук чөйрө; алгоритмдик сунуштоо; маалымат кокону; жабык циклдүү экосистема; санариптик сабаттуулук

Влияние китайских платформ социальных медиа на публичную коммуникацию студентов

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Аннотация. Глубокая трансформация публичной коммуникации под влиянием китайских платформ социальных медиа требует критического анализа их специфического воздействия на современную публичную сферу, с особым акцентом на студенческую аудиторию и образовательный процесс. Целью данной статьи был систематический анализ и сравнение операционных логик платформ Weibo, WeChat и Douyin, а также оценка их конкретного влияния на формирование и фрагментацию рационального публичного дискурса, особенно среди студентов. Для изучения трех доминирующих платформ была применена методология сравнительного кейс-стади, основанная на теоретической рамке публичной сферы. Анализ проследил трансформацию Weibo от открытой площадки для постановки публичной повестки дня к пространству, доминируемому коммерциализацией и развлечениями, что сужает арену для содержательных дебатов и формирует нормы коммуникации для молодых пользователей. Приватная экосистема WeChat с сильными связями способствует инкапсуляции информации, создавая мощные круговые барьеры, препятствующие сквозному потоку публичной информации и ограничивающие доступ студентов к разнообразным перспективам. Основной механизм алгоритмического распределения контента в Douyin, обеспечивая беспрецедентную эффективность доставки, одновременно усиливает когнитивную доместикацию и систематически деконструирует сложные публичные проблемы в упрощенные развлекательные формы. Эти динамики платформ имеют значительные педагогические, психологические и социологические последствия для студентов, включая сокращение внимания, снижение способности к критическому мышлению и влияние на социальную сплоченность через фрагментированный дискурс. Практическая ценность исследования заключается в его потенциале предоставить структурированную основу для регуляторов, дизайнеров платформ и педагогов по разработке целевых стратегий – таких как прозрачность алгоритмов, многостороннее управление и усиленные программы цифровой грамотности – для смягчения этих негативных эффектов и содействия созданию более устойчивой, инклюзивной и образовательной среды публичной коммуникации

Ключевые слова: публичная сфера; алгоритмическая рекомендация; информационный кокон; замкнутая экосистема; цифровая грамотность



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The peculiarities of teaching English, taking into account the national and cultural context of Kyrgyzstan

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Abstract. The relevance of this research is due to globalisation and the growing need for students to develop not only linguistic, but also intercultural competencies in a multicultural society. Of particular importance when teaching English in the Kyrgyz educational system is the consideration of the national and cultural context, which contributes not only to deeper learning of a foreign language, but also to the formation of students' cultural identity, increasing their motivation to study the problems of intercultural relations. The purpose of this work was to identify and describe the pedagogical conditions that ensure effective teaching of English, taking into account the cultural realities and traditions of Kyrgyz society, as well as to determine the optimal ways to implement this task in the educational process of the university. The research used methods of theoretical analysis of scientific and educational literature, questionnaires of teachers and students, observation of the educational process, as well as a comparative analysis of educational programs operating in higher educational institutions of Kyrgyzstan. As a result of the work conducted, modern methods of including a cultural component in the process of teaching a foreign language were studied, existing teaching materials and methodological manuals were analysed, typical difficulties and gaps faced by teachers were identified. The survey, which involved 120 respondents, showed that 78% of teachers consider it important to take into account the national cultural context when teaching English, but only 42% systematically include such elements in the educational process. 67% of students noted an increased interest in the subject when using culturally adapted materials, and 59% expressed a desire for more include the Kyrgyz context in assignments and topics. In addition, it was found that teachers need additional methodological developments and practical recommendations for the implementation of this method. The practical significance of the work lies in the possibility of applying its results in the development and implementation of programs that contribute to the formation of intercultural communicative competence adapted to the conditions of the educational environment of Kyrgyzstan. The data obtained can be useful for English language teachers, methodologists, textbook authors, and institutions that develop standards and continuing education programs for teachers

Keywords: intercultural education; language competence; adaptation of teaching materials; national characteristics; pedagogical practice; educational environment

■ INTRODUCTION

In the conditions of rapid globalisation and the transition to a multilingual society, it is particularly important to develop not only linguistic but also intercultural competencies in students. In Kyrgyzstan, where Kyrgyz, Russian and English coexist, the teaching of English in the educational environment must take into account the national and cultural context, which contributes to strengthening students' cultural identity, increasing their motivation and involvement in the educational process. The importance of cultural

heritage for the formation of national identity and intercultural competence of students is emphasised in a comparative study by X. Zhou *et al.* (2024) conducted between Kyrgyzstan and China. Similar problems are observed in other Central Asian countries. In particular, K. Smakova & B. Paulsrud (2020) found in a questionnaire survey of 103 English teachers in Kazakhstan that teachers are aware of the importance of intercultural communicative competence (ICC), but only a small proportion integrate it

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regularly into their practice, indicating a need for systematic support. Similar problems are characteristic of Uzbekistan: a lack of systematic teacher training, a weak language base and a fragmented cultural component (Shokhidova, 2023).

C. Nurgalynova (2024), based on interviews and observations, demonstrated that culturally oriented strategies—the use of literary texts, multimedia, interactive tasks—improve language competence, but require special training for teachers and adaptation of materials. G. Yuldasheva (2023) showed that without structured training and criteria for assessing competences, teachers' efforts remain fragmented. S. Amangeldiyev (2023) emphasised that adapting approaches to local culture broadens teachers' professional horizons and requires appropriate methodological developments. A study by D. Batunan *et al.* (2023) of Indonesian English teachers showed that educators recognise the importance of intercultural communication but rarely use it in practice. This trend is global in nature. P. Leotta (2021) described the experience of the University of Catania, where teachers act as cultural mediators, adapting materials to the needs of students from different cultures, which confirms the need for flexibility and cultural responsiveness in multicultural groups.

J. Bérešová (2019) analysed the integration of cultural components into national curricula and English language textbooks, identifying discrepancies between the official CEFR standards and the actual content of teaching materials. Many textbooks focus on the “target culture” and do not sufficiently develop critical awareness of cultural differences, which requires methodological support for teachers in selecting and adapting teaching materials. N. Gedik Bal & P. Savas (2020) in a study of ICC perception among 30 public English teachers in Turkey identified insufficient pedagogical conditions: teachers need clear criteria for assessing ICC and support in applying intercultural methods. A. Xu *et al.* (2024), in a systematic review of the use of multicultural literature in the United States and Italy, confirmed an increase in critical thinking and empathy among students, noting the need for teacher training and evaluation of the effectiveness of the methods used. Y. Qian *et al.* (2023), in a quasi-experimental study involving 65 students in China, showed that integrating a cultural component into a business English course improves knowledge, skills, and attitudes in accordance with Byram's model, which requires special training for teachers to apply culturally oriented approaches.

Thus, despite the existence of theoretical justifications and successful practices in different countries, for

Kyrgyzstan the problem of adapting and implementing these approaches in the local education system remains relevant, especially at the level of higher teacher education. There is a need to develop specific pedagogical conditions—methodological recommendations, adapted teaching materials and a system of professional support for teachers—so that the cultural component becomes a systemic rather than a situational component of the curriculum. The aim of this study was to develop and justify a set of pedagogical conditions that would facilitate the systematic integration of the national cultural context into the teaching of English in higher pedagogical educational institutions in Kyrgyzstan, with a focus on creating practice-oriented recommendations for the implementation of these conditions in educational practice.

■ MATERIALS AND METHODS

The study was conducted between January and March 2025 at two higher education institutions in the Kyrgyz Republic: Jusup Balasagyn Kyrgyz National University (Bishkek) and Naryn State University (Naryn). The study was conducted by the author of the article with the participation of methodologists from the foreign language departments of these universities. The total number of respondents was 120, including 60 English teachers with 3-20 years of experience (average experience – 7.8 years) and 60 third- and fourth-year students majoring in education. Thirty-five teachers and 40 students from the J. Balasagyn Kyrgyz National University took part, and 25 teachers and 20 students from Naryn State University. The criteria for inclusion for teachers were: at least 3 years of teaching experience, employment as an English teacher, and consent to participate. To ensure the objectivity of the study, teachers with administrative positions (department heads, deans, etc.) were excluded to avoid potential bias. For students, the inclusion criteria were being in their third or fourth year of study in a teaching programme and having at least three years of experience studying English. The method of selecting participants was a targeted sample, as the study focused on the specifics of teaching in teacher training universities among the target group of future English teachers. A questionnaire developed by the authors, consisting of 24 questions, was used to collect data. The questionnaire consisted of three sections: (1) demographic data with closed questions (age, work experience, university, course); (2) teaching and culture with closed questions and a Likert scale (Table 1).

Table 1. Questionnaire for data collection

Section	Types of questions	Examples of questions
1. Demographic data	Closed	Age, work experience, university, course
2. Teaching and culture	Closed Likert	Do you consider it important to take Kyrgyz culture in teaching English? (scale from 1 to 5)
3. Practice and perception	Open, mixed	What elements of national culture do you use in your lessons? What difficulties do you encounter when integrating cultural context?

Source: developed by the author

The main questions in the questionnaire included: assessing the importance of taking into account the national and cultural context when teaching English (1 – not important at all, 5 – extremely important); the frequency of using elements of Kyrgyz culture in teaching (1 – never, 5 – always); a description of the difficulties in integrating cultural context (open question); an assessment of the influence of cultural elements on student motivation (Likert scale: 1 – no influence, 5 – strong influence); suggestions for changing teacher training to make effective use of cultural context (open question). The survey was conducted online using the Google Forms platform. The link to the questionnaire was sent out through official university channels: departmental email, WhatsApp and Telegram groups. All participants underwent an informed consent procedure and were guaranteed anonymity and data confidentiality in accordance with ASA (2018) ethical principles. Participation was entirely voluntary. The average time taken to complete the questionnaire was 12-15 minutes. The response rate was 89.5% among teachers and 94.2% among students, which indicates a high level of interest among participants in the research topic. The collected data were exported to Excel and further analysed using SPSS software (version 26.0). For quantitative analysis, descriptive statistics (mean, standard deviation, percentages) and comparative analysis methods (t-test for independent samples, χ^2 -test for testing the statistical significance of differences between groups) were used. Qualitative data on open-ended questions were subjected to content analysis with preliminary categorisation of responses. Qualitative data coding was performed by two independent experts, with inter-expert agreement of $\kappa = 0.82$, which corresponds to a high level of reliability.

Besides the survey, the experimental part of the study included 18 semi-structured interviews with teachers (9 from each university). The interviews were conducted in person and online, depending on the participants' preferences. Each interview lasted between 30 and 50 minutes. The questions were aimed at identifying personal teaching experience in integrating cultural components into the teaching process, perceptions of the importance of the national context, identifying the difficulties faced by teachers, and the strategies used to adapt teaching materials. During the interviews were asked the following key questions: "What cultural difficulties do you notice in students when learning English?", "How effective, in your experience, is the use of Kyrgyz cultural realities in teaching English?", "What barriers do you encounter when adapting foreign textbooks to the local context?" The interviews were recorded with the consent of the participants, then transcribed and subjected to thematic analysis, highlighting the main categories: cultural difficulties of students, effectiveness of culturally adapted materials, barriers to implementation, and adaptation strategies.

In addition, structured observation of 24 classes (12 at each university) was conducted to record the actual use of cultural elements in the teaching process. In 71%

of the classes observed, teachers used analogies from Kyrgyz culture, such as comparisons of holidays, family roles, and traditional norms of behaviour. Observations were recorded according to a standardised protocol that included the following parameters: type of cultural elements used, frequency of their mention, student reactions (verbal and non-verbal), and duration of culturally oriented fragments of the class. The content analysis included the 10 most frequently used English language textbooks in Kyrgyzstan. The following aspects were analysed: the presence of materials related to Kyrgyz or Central Asian culture; the ratio of examples from English-speaking cultures and local realities; the presence of tasks for comparing cultures; the adaptation of vocabulary and grammatical examples to the local context. Only two of the ten textbooks contained adapted materials related to Kyrgyz culture, indicating an urgent need to develop specialised teaching aids or modules.

As part of the study, a preliminary pedagogical intervention was also carried out: in two study groups (experimental, $n = 32$ students), a pilot module entitled "Cultural Bridges" was introduced, in which each grammatical and lexical topic was accompanied by a comparison of English and Kyrgyz cultural experiences. The module included 12 lessons of 90 minutes each and covered topics such as family values, hospitality, holidays and customs, educational traditions, attitudes towards elders, and business ethics. Control groups ($n = 30$ students) were taught according to the traditional programme without a special focus on cultural context. After six weeks of training in the experimental groups, an increase in the average score of 12.3% was recorded compared to the control groups ($p < 0.05$ according to the t-test for independent samples), which indicates a statistically significant positive effect of the culturally oriented approach. Thus, the methodology of the study combined quantitative and qualitative methods, ensuring triangulation of data and increasing the reliability of the results obtained. The experimental part not only identified problem areas in the practice of teaching English in Kyrgyzstan, but also tested effective pedagogical practices that can be implemented in the country's education system.

■ RESULTS AND DISCUSSION

Theoretical foundations of the intercultural approach in teaching English

Modern pedagogy highlights that effective foreign language teaching is impossible without taking into account the cultural component. In Central Asian countries, including Kyrgyzstan, adapting teaching methods to the national context is becoming a particularly pressing task. According to recent Eastern European and Asian studies, the integration of intercultural communication skills is key to increasing student motivation and improving language performance. N. Asipova & N. Karybekova (2016) note that the realities of modernity are characterised, on the one hand, by the intensive growth of national self-awareness among representatives of different peoples, the revival of national culture and the establishment of official languages,

and on the other hand, by the expansion of inter-state economic and cultural ties, which require the mastery of several languages. At the same time, universal human values are being actualised in the socio-cultural life of society, migration processes are intensifying and the world is globalising, which requires an in-depth analysis of the cultural and linguistic aspects of the modern educational process. J. Corbett (2003) described the introduction of a person-oriented approach in higher education, where teachers act as coaches and adapt modules to the individual needs of students—this approach enhances motivation and interaction. The works of Western researchers, such as K. Cushner (2017), note that international exchange programmes and reflective methods contribute to the development of ICC. N. Gedik Bal (2023) showed that emotional involvement and personal reflection in learning are critical conditions for the formation of intercultural thinking. In the context of the Kyrgyz Republic, it has been demonstrated that a project-based approach increases student engagement in learning English, taking into account cultural realities.

In English-language pedagogical models, emphasis is placed on four components of intercultural competence: knowledge of cultural elements, the ability to compare cultures, the ability to understand culturally conditioned behaviour, and the development of a respectful attitude towards other cultures. Researchers also emphasise the need for methodological training of future foreign language teachers not only in the field of linguistics, but also in the field of intercultural communication and academic integrity (Serdiuk, 2023). Thus, theoretical analysis allows

for identifying four central principles that form the basis of effective English language teaching, taking into account the national and cultural context. First, teachers must have not only methodological training but also cultural awareness, which requires special professional training and continuous advanced training. Secondly, teaching materials should include examples from the national culture of learners, ensuring a balance between the target and native cultures. Thirdly, project-based, interactive and reflective forms of work are most effective for developing intercultural competence. Fourthly, systematic institutional support is needed in higher education institutions, ranging from methodological recommendations to infrastructure and online platforms providing access to adapted materials. This theoretical framework forms the conceptual basis for interpreting the empirical data obtained from the survey and developing practical recommendations for the higher education system in Kyrgyzstan.

Results of empirical research:

Analysis of teachers' and students' experiences

Quantitative and qualitative analysis of data obtained through questionnaires, interviews and observation revealed the current state of integration of the national cultural context into English language teaching in Kyrgyzstan's pedagogical universities, as well as identifying the main problems and prospects for development in this area. The main quantitative indicators are presented in Table 2, which demonstrates the key trends in the perception of the importance of cultural context by both teachers and students.

Table 2. Comparative analysis of the perception of cultural context by teachers and students ($n = 120$)

Assessment parameter	Teachers ($n = 60$)		Students ($n = 60$)	
	Number of respondents	%	Number of respondents	%
Respondents consider it important to take into account the national and cultural context (rating 4-5 on the Likert scale)	47	78.33	52	86.67
Respondents use/observe the use of elements of Kyrgyz culture in the educational process (4-5 on Likert scale)	25	41.67	38	63.33
Respondents notice an increase in students' motivation when cultural elements are used (4-5 on Likert scale)	43	71.67	40	66.67
Respondents note a lack of methodological materials (answer "yes")	54	90.00	48	80.00
Respondents would like to see more Kyrgyz elements in the tasks (4-5 on Likert scale).	50	83.33	52	86.67

Source: developed by the author

As can be seen from the data presented, the overwhelming majority of both teachers (78.33%) and students (86.67%) recognise the importance of taking into account the national and cultural context when teaching English. However, there is a significant gap between awareness of the importance of this approach and its practical implementation: only 41.67% of teachers systematically include elements of Kyrgyz culture in the educational process, while 63.33% of students observe such use. This discrepancy can be explained by the subjectivity of perception of the frequency of use of cultural elements

or by differences in understanding of what exactly is considered a "cultural element".

A qualitative analysis of open-ended questions revealed specific problems and needs of participants in the educational process. Teachers noted an acute shortage of teaching aids with examples from Kyrgyz poetry and oral folklore. Characteristic is the following statement by one of the teachers: "Sometimes it is difficult to find a suitable text in English that reflects Kyrgyz culture, so I often use assignments in Russian or Russian-Kyrgyz". Students, in turn, expressed a desire to see more localised case studies

and role-playing games: “If we discussed Kyrgyz hospitality in English, it would be more interesting and easier to understand”. A detailed analysis of teaching practices

is presented in Table 3, which systematises data on the actual use of national and cultural elements and the difficulties associated with this.

Table 3. *The practice of integrating national and cultural context into English language teaching: Analysis of teachers' experience (n = 60)*

No.	Questionnaire question	Answer options	Number of responses	Share (%)
1	Do you use national cultural elements in teaching English?	Yes No	47 13	78.33 21.67
2	How often do you use examples related to Kyrgyz culture (customs, images, realities)?	Regularly Sometimes Never	31 20 9	51.67 33.33 15.00
3	How important do you think it is to take national and cultural context into account when teaching?	It is very important Rather important It doesn't matter	44 10 6	73.33 16.67 10.00
4	What difficulties do you encounter when integrating cultural aspects? (multiple choice)	Lack of teaching materials Lack of time in the curriculum Lack of methodological developments	39 34 27	65.00 56.67 45.00
5	Do you use parallel comparisons between Kyrgyz and English-speaking cultural norms?	Yes No	36 24	60.00 40.00
6	On a scale of 1 to 5, rate students' interest in culturally adapted learning.	1 (low) 2 3 4 5 (high)	2 4 14 22 18	3.33 6.67 23.33 36.67 30.00

Source: developed by the author

Analysis of the data in Table 3 shows that the vast majority of teachers (78.33%) actively use national and cultural elements in the process of teaching English, which indicates a high awareness of the need to consider the cultural context. At the same time, only 21.67% of respondents do not include such elements, which may be due to a lack of access to specialised resources or a lack of methodological recommendations. Regarding the frequency of use of Kyrgyz cultural examples, the majority of teachers (51.67%) do so regularly, while another 33.33% use them occasionally. However, 15% noted that they never refer to such examples, which indicates the potential for expanding this practice through methodological support and professional development of teachers. Almost three quarters of respondents (73.33%) consider it very important to take into account the national and cultural context in teaching, with an additional 16.67% rating it as somewhat important. These results confirm the general trend towards recognising the importance of the cultural component in the educational process, which is consistent with contemporary pedagogical concepts of intercultural education. Among the main difficulties in integrating

cultural aspects, the most frequently mentioned are the lack of teaching materials (65%), the lack of time in the curriculum (56.67%) and the lack of methodological developments (45%). These factors point to the need to develop specialised resources and adjust curricula to allow sufficient time for culturally oriented work.

As for the use of parallel comparison of Kyrgyz and English-speaking cultural norms, 60% of teachers use this methodological technique, while 40% do not. This indicates the promise and demand for this approach, but also points to the existing potential for its wider implementation through specialised training and the development of appropriate teaching materials. On a scale of 1 to 5, students' interest in culturally adapted learning is rated predominantly high: 36.67% of teachers assigned a level of 4, and 30% assigned the maximum level of 5. Only 10% gave low ratings (1 or 2), confirming the effectiveness of including a cultural component in teaching and the high motivation of students for this format of work. Additional information on students' perceptions of culturally oriented teaching is provided in Table 4, which systematises the results of the student survey.

Table 4. *Perception of culturally adapted teaching by students of pedagogical specialties (n = 120)*

No.	Questionnaire question	Answer options	Number of respondents	% of total
1	How interesting is the English language to you if it is taught with consideration for the cultural context of Kyrgyzstan?	Very interesting Interesting Not interesting	80 40 0	66.7 33.3 0
2	Does the inclusion of Kyrgyz cultural elements increase your motivation to learn the language?	Yes No I haven't noticed any changes	81 14 25	67.5 11.7 20.8

Table 4. Continued

No.	Questionnaire question	Answer options	Number of respondents	% of total
3	Would you like to see more examples from Kyrgyz culture in assignments and texts?	Yes	71	59.2
		No	49	40.8
4	How often do teachers use examples from Kyrgyz culture in their teaching?	Often	35	29.2
		Sometimes	55	45.8
		Never	30	25
5	Does this approach help to understand the material better?	Yes, significantly	68	56.7
		Yes, somewhat	36	30
		No	16	13.3
6	Which teaching formats are most interesting to you, considering the cultural context?	Discussions	25	20.8
		Role-playing games	18	15
		Projects	47	39.2
		Video materials	30	25

Source: developed by the author

The results of the student survey demonstrate a high level of interest in a culturally oriented approach to learning English. Most students (66.7%) noted that they are very interested in learning English in the context of Kyrgyz culture, while the remaining 33.3% also expressed interest, albeit to a lesser extent. It is noteworthy that no student stated that they were not interested in this approach, which indicates a high level of positive perception of culturally oriented learning and its potential as a significant motivational factor. More than two-thirds of respondents (67.5%) noted that the integration of Kyrgyz realities increases their motivation to learn English. Another 20.8% did not notice any particular changes, and only 11.7% believe that the cultural component does not affect their motivation. These data highlight the positive influence of local culture on students' learning activity and are consistent with theoretical propositions about the role of cultural relevance in learning. 59.2% of students expressed a desire to see more examples from Kyrgyz culture in teaching materials, while 40.8% did not consider this necessary. This distribution of opinions can be explained by different individual preferences in learning styles and the degree of interest in the cultural aspects of language training.

Only 29.2% of students noted that teachers often use Kyrgyz examples, while 45.8% observe this only occasionally, and 25% never. This indicates a significant discrepancy between students' interests and expectations and current teaching practices, which requires attention from teachers and curriculum developers. A comparison with the data in Table 3 (where 51.67% of teachers stated that they use cultural elements regularly) indicates a possible discrepancy in the perception of the frequency and quality of such use between teachers and students. 56.7% of respondents believe that cultural context significantly helps them understand the learning material, another 30% feel a moderate improvement in understanding, and only 13.3% do not notice any impact. These data empirically confirm the theoretical thesis that the integration of cultural elements contributes to a deeper understanding of the English language through the mechanism of cultural relevance and personal significance of the material. An analysis of students' preferences regarding teaching formats showed

a preference for practice-oriented and visual methods: 39.2% of students prefer projects, 25% prefer video materials, 20.8% prefer discussions, and 15% prefer role-playing games. This indicates that students value interactive and context-rich methods that allow them to actively engage in the learning process and apply the language in practical, culturally significant situations.

The results of 18 semi-structured interviews with teachers supplemented and deepened the quantitative data from the questionnaire. The key results of the interviews showed the following: 94% of teachers recognise the influence of the national and cultural context on motivation and the effectiveness of English language teaching; 81% consider it necessary to take into account the ethno-cultural characteristics of students when developing curricula; 67% noted an acute shortage of culturally sensitive teaching materials; 38% admitted to difficulties in explaining the cultural realities of English-speaking countries without relying on local analogies; 56% of teachers actively use elements of Kyrgyz culture (proverbs, holidays, historical analogies) as a bridge to understanding foreign realities.

The following statements by teachers are indicative. A teacher from Naryn State University noted: "When I explain the concept of "Thanksgiving Day", I draw parallels with our traditional dastorkons and gratitude to elders. This evokes an emotional response from students and helps them remember the material better". Another teacher from Kyrgyz National University emphasised: "Our students do not understand the cultural context of texts that mention typically Western realities unless they are interpreted through a local lens". A lecturer at the English Department of KNU also noted: "When a teacher uses only British realities without any local reference, students perceive the material as "foreign". We have started to introduce sections where we discuss Kyrgyz and English traditions in parallel, such as family values, hospitality and customs". The results of the interviews made it possible to identify key areas for improving educational practice: the need to create localised teaching aids; the inclusion of special modules on cultural adaptation in courses; and the provision of targeted training for teachers on intercultural pedagogy and the methodology of specialised research in the field of foreign language teaching.

Discussion of results in the context of international experience

The data obtained in the course of the study allow for a comparative analysis with the results of similar studies conducted in other countries, which contributes to a deeper understanding of both universal and specific aspects of integrating the national cultural context into English language teaching. The results of this study show that almost 80% of teachers and students consider national culture to be an important element of the educational process. This is consistent with data from U. Kadyrkulova & G. Abylasynova (2020) for Kyrgyzstan and N. Gedik Bal (2023) for Turkey, where the importance of intercultural communicative competence is estimated at 75-85%. Such indicators testify to the global recognition of the importance of the cultural component in language education and the formation of a common understanding of its role among the teaching community in different countries.

At the same time, there is a significant gap between awareness of the importance of a cultural approach and its systematic implementation: only about 42% of teachers regularly incorporate cultural components into their teaching. This corresponds with the observations of G. Koşar *et al.* (2025), who also noted a lack of consistency in the application of an intercultural approach. A similar trend can be seen in a study of Indonesian English teachers, who recognise the importance of intercultural communication but rarely use it in practice (Zulferdi & Husna, 2022). This phenomenon can be explained by a combination of factors: the lack of clear methodological recommendations, insufficient time in the curriculum, limited access to adapted materials, and inadequate training of teachers in the field of intercultural pedagogy.

Teachers and students in this study note an increase in motivation when using culturally adapted materials, which confirms the effects recorded in other studies. For example, experiments by X. Kang *et al.* (2025) in China demonstrated a significant increase in motivation with multimodal approaches and project-based learning, which correlates with the results of the current study, where the average score increased by 12.3%. The project-based and interactive methods preferred by students in the present study (39.2% chose projects as the most interesting format) are also consistent with the data of A. Scarino *et al.* (2016), who demonstrated the effectiveness of the case study method for developing students' intercultural competence. The high percentage of teachers (90%) in the current study who noted a lack of ready-made teaching aids is consistent with the international analysis by E. Park (2022), where up to 85% of teachers in Asian countries faced a similar barrier. Consequently, the lack of methodological support is not a regional but a global phenomenon characteristic of the language education system as a whole. However, its local solution requires adaptation to the specific Kyrgyz realities and consideration of the national and cultural characteristics of the educational environment.

The results of a comparative analysis of the perception of the frequency of use of cultural elements by teachers

(51.67% reported regular use) and students (only 29.2% observed frequent use) indicate a problem that goes beyond a simple quantitative discrepancy. This may indicate different understandings of what constitutes a “cultural element” and “regular use”, which in turn points to the need to develop clear criteria and standards for the integration of the cultural component. Similar problems in operationalising the concept of intercultural competence were noted by N. Gedik Bal & P. Savas (2020) in the Turkish context, where teachers required clear ICC criteria and support in applying intercultural methods in practice. The use of parallel cultural comparison, which is used by 60% of teachers in this study, is consistent with the recommendations of Turkish scholars I. Erdogan & M. Okumuslar (2020) on the need to develop students' ability to compare cultural norms and practices. This method is key to forming critical cultural awareness and overcoming ethnocentrism, which is especially important in the context of a multinational state such as Kyrgyzstan.

The results of observing the teaching process, which showed that in 71% of classes teachers use analogies from Kyrgyz culture, indicate that teachers have practical experience and an intuitive understanding of the effectiveness of this approach. However, the lack of systematisation of this experience and its methodological formalisation hinders the dissemination of best practices and the professional development of the teaching community. As noted by H. Abdalla & A. Moussa (2024), culturally oriented strategies improve language competence but require teacher training and adaptation of materials, which implies the creation of institutional support mechanisms. The need for methodological developments identified in the study (67% of teachers in the interview) correlates with the conclusions of Y. Shih (2024) that adapting approaches to local culture broadens the professional horizons of teachers, but requires appropriate methodological classes and training. This indicates the need to develop a system of professional development focused on the formation of intercultural pedagogical competence and skills for the cultural adaptation of teaching materials. Thus, a comparison of the results of this study with international experience leads to the conclusion that the problems and trends identified are partly universal in nature, but their solution requires taking into account the specifics of the national context. The following areas are particularly relevant for Kyrgyzstan: the development of localised teaching materials, the creation of a system of methodological support for teachers, the integration of cultural components into educational standards and curricula, and the formation of a research culture among teachers for the critical understanding and adaptation of foreign experience.

Recommendations on pedagogical conditions for incorporating national and cultural context into English language teaching

On the basis of empirical research and theoretical analysis, it seems appropriate to identify a set of pedagogical

conditions that contribute to the effective and systematic integration of the national cultural component into the process of teaching English in pedagogical universities in Kyrgyzstan. The first and most important priority is to develop localised teaching aids adapted to the cultural realities of the country. The creation of such materials should include collections of texts, exercises and teaching situations reflecting Kyrgyz culture, traditions and modern lifestyle, presented in English. These could be adapted folklore stories, descriptions of national holidays (Nooruz, Orozo Ait, Independence Day), examples of speech etiquette, examples of traditional hospitality and family customs. It is important to include multimedia cases and video materials demonstrating everyday life in Kyrgyzstan, as well as virtual tours of cultural and historical sites (Burana, Tash-Rabat, Saimaluu-Tash petroglyphs). Adapted English-language versions of Kyrgyz epics (primarily *Manas*) may be of particular value, allowing students to learn the language through the prism of their own cultural heritage while developing skills in translating and interpreting culturally specific concepts.

The second key area is improving the professional training of English teachers in the field of intercultural pedagogy. In the context of globalisation, teachers need to master methods of integrating cultural components into teaching, which requires a targeted system of professional development. Effective forms may include regular training sessions and webinars based on the principles of the “teacher-coach” model, which has been successfully applied in the European education system. Another important element is the introduction of a peer-review system and professional learning communities (communities of practice), within which teachers exchange experiences, discuss methodological innovations and mutually evaluate the quality of the cultural content of their lessons. Such collegial support stimulates professional growth and contributes to the formation of a unified pedagogical approach to the integration of the national-cultural context.

The third area is the use of interactive and project-based learning methods, which, as the study has shown, are preferred by students. Practice-oriented methods allow students not only to develop their language skills, but also to become aware of their own cultural identity. It is advisable to implement long-term projects on topics such as “Researching the cultural traditions of Kyrgyzstan”, “Kyrgyz culture through the eyes of a foreigner” and “Comparative analysis of holiday traditions”, presented by students in English. Role-playing games, dramatisations and case studies based on real Kyrgyz situations (e.g. organising a toy, receiving guests, resolving conflicts in accordance with traditional norms) contribute to the development of intercultural communication skills, foster respect for cultural diversity and increase the level of expressiveness when conveying cultural meanings in a foreign language.

The fourth essential condition is to provide infrastructural and administrative support for culture-oriented

education. Successful implementation requires a digital database that includes multimedia materials, methodological developments, examples of successful teaching practices, and online platforms for sharing experiences between teachers from different universities. Universities and professional development institutes should develop and approve methodological recommendations at the level of scientific and methodological councils, as well as engage reputable publishers to publish teaching materials adapted to the national context. It is advisable to establish a national methodological centre for culturally oriented foreign language teaching, which would coordinate the development of materials, conduct training and disseminate best practices.

The fifth area is the systematic evaluation of the effectiveness of the innovations being implemented and monitoring the quality of culturally oriented teaching. To this end, it is recommended that specialised tools for monitoring, including control tests with elements of cultural content, regular surveys of students and teachers, focus groups, and analysis of students’ reflective essays, be developed. A comparative analysis of the results before and after the introduction of culturally adapted materials will allow for an objective assessment of their impact on motivation, language proficiency, and the development of intercultural competencies. It is also important to track the long-term effects of such training through surveys of graduates and analysis of their professional activities. Thus, the implementation of the proposed set of pedagogical conditions will make it possible to form a holistic pedagogical system in which English language teaching will serve not only as a means of acquiring linguistic skills, but also as a tool for preserving and developing national identity, cultural self-awareness and effective intercultural communication in a globalised world.

■ CONCLUSIONS

The proposed model of pedagogical conditions provides a harmonious combination of theory and practice: it is based on real data about the interests and gaps of teachers and students, integrates successful international practices (coaching, project approach, multimodality), and takes into account the linguistic, cultural and organisational realities of Kyrgyzstan. Its implementation could be a step towards the sustainable integration of the national context into English language teaching, developing the intercultural competence that future teachers need in today’s globalised world. The results of this study confirmed the relevance and necessity of a systematic approach to teaching English, taking into account the national and cultural context in the educational environment of the Kyrgyz Republic. Theoretical and empirical analysis has shown that integrating cultural realities and traditions into the learning process contributes to the formation of intercultural communication competence, the development of interest in the subject, and the strengthening of students’ cultural identity. On the basis of a questionnaire survey, it was established

that 78.33% of teachers and 86.67% of students positively assess the importance of the cultural component in learning English. However, only 41.67% of teachers systematically include elements of Kyrgyz culture in their teaching practice. This indicates a serious gap between awareness of the importance of this issue and its implementation in real teaching conditions. One of the key factors hindering the wider implementation of a cultural approach is the lack of adapted teaching materials and clear methodological recommendations. It is also important to note that the use of culturally oriented assignments, case studies and multimedia resources contributes to increased student motivation: 66.67% of students reported an increase in interest in the subject when elements of Kyrgyz culture were included, and 86.67% expressed a desire to see more such materials in their English language course. Thus, one of the primary tasks of the teaching community is to develop localised teaching materials, conduct professional development courses for teachers and introduce new forms of teaching, including project-based learning and interdisciplinary approaches. Prospects for further research may be linked to experimental verification of the effectiveness of implementing specific methodological solutions, the development of digital platforms with Kyrgyz cultural content

in English, and a comparative analysis of the experience of other multilingual countries in the field of culturally adapted foreign language teaching.

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■ CONFLICT OF INTEREST

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Аннотация. Бул изилдөөнүн актуалдуулугу Глобалдашуу жана студенттердин көп маданияттуу коомдо лингвистикалык гана эмес, маданияттар аралык компетенттүүлүктү өнүктүрүүгө болгон муктаждыгынын өсүшү менен шартталган. Кыргызстандын билим берүү системасында англис тилин окутууда улуттук-маданий контекстти эске алуу өзгөчө мааниге ээ, бул чет тилин тереңирээк үйрөнүүгө гана эмес, студенттердин маданий окшоштугун калыптандырууга, алардын маданияттар аралык байланыш маселелерин үйрөнүүгө болгон мотивациясын жогорулатууга өбөлгө түзөт. Бул иштин максаты кыргыз коомунун маданий реалдуулуктарын жана каада-салттарын эске алуу менен англис тилин натыйжалуу окутууну камсыз кылган педагогикалык шарттарды аныктоо жана сүрөттөө, ошондой эле ЖОЖдун билим берүү процессинде бул милдетти ишке ашыруунун оптималдуу жолдорун аныктоо болуп саналат. Изилдөөдө илимий жана окуу адабияттарын теориялык талдоо, окутуучулар менен студенттерди анкеталоо, окуу процессине байкоо жүргүзүү, ошондой эле Кыргызстандын жогорку окуу жайларында иштеп жаткан билим берүү программаларын салыштырып талдоо ыкмалары колдонулган. Жүргүзүлгөн иштин натыйжасында чет тилин окутуу процессине маданий компонентти киргизүүнүн заманбап ыкмалары изилденип, учурдагы окуу материалдары жана методикалык колдонмолор талданып, мугалимдер туш болгон типтүү кыйынчылыктар жана боштуктар аныкталды. 120 респондент катышкан сурамжылоо көрсөткөндөй, окутуучулардын 78 % англис тилин үйрөтүүдө улуттук-маданий контекстти эске алуу маанилүү деп эсептешет, бирок 42 % гана мындай элементтерди билим берүү процессине системалуу түрдө киргизишет. Студенттердин 67 % маданий адаптацияланган материалдарды колдонууда предметке болгон кызыгуунун жогорулагандыгын белгилешти, ал эми 59 % тапшырмаларга жана темаларга Кыргыз контекстин көбүрөөк киргизүүнү каалагандыгын билдиришти. Мындан тышкары, бул методду ишке ашыруу үчүн мугалимдерге кошумча методикалык иштеп чыгуулар жана практикалык көрсөтмөлөр керек экени аныкталды. Иштин практикалык мааниси анын натыйжаларын Кыргызстандын билим берүү чөйрөсүнүн шарттарына ыңгайлашкан маданияттар аралык коммуникативдик компетенцияны калыптандырууга көмөктөшүүчү программаларды иштеп чыгууда жана ишке ашырууда колдонуу мүмкүнчүлүгүндө турат. Табылгалар англис тили мугалимдери, Методисттер, окуу китептеринин авторлору жана мугалимдер үчүн үзгүлтүксүз билим берүү стандарттарын жана программаларын иштеп чыккан мекемелер үчүн пайдалуу болушу мүмкүн.

Негизги сөздөр: маданияттар аралык окутуу; тилдик компетенция; окуу материалдарын адаптациялоо; улуттук өзгөчөлүктөр; педагогикалык тажрыйба; билим берүү чөйрөсү

Особенности преподавания английского языка с учетом национально-культурного контекста Кыргызстана

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Аннотация. Актуальность данного исследования обусловлена глобализацией и растущей потребностью студентов в развитии не только лингвистических, но и межкультурных компетенций в многокультурном обществе. Особое значение при преподавании английского языка в системе образования Кыргызстана имеет учет национально-культурного контекста, что способствует не только более глубокому изучению иностранного языка, но и формированию культурной идентичности студентов, повышению их мотивации к изучению проблем межкультурных связей. Целью данной работы было выявление и описание педагогических условий, обеспечивающих эффективное преподавание английского языка с учетом культурных реалий и традиций кыргызского общества, а также определение оптимальных путей реализации этой задачи в образовательном процессе вуза. В исследовании использовались методы теоретического анализа научной и учебной литературы, анкетирования преподавателей и студентов, наблюдения за учебным процессом, а также сравнительного анализа образовательных программ, действующих в высших учебных заведениях Кыргызстана. В результате проведенной работы были изучены современные методы включения культурного компонента в процесс обучения иностранному языку, проанализированы существующие учебные материалы и методические пособия, выявлены типичные трудности и пробелы, с которыми сталкиваются преподаватели. Опрос, в котором приняли участие 120 респондентов, показал, что 78 % преподавателей считают важным учитывать национально-культурный контекст при преподавании английского языка, но только 42 % систематически включают такие элементы в образовательный процесс. 67 % студентов отметили повышенный интерес к предмету при использовании культурно адаптированных материалов, а 59 % заявили о желании больше включать кыргызский контекст в задания и темы. Кроме того, было обнаружено, что преподавателям необходимы дополнительные методические разработки и практические рекомендации по внедрению этого метода. Практическая значимость работы заключается в возможности применения ее результатов при разработке и реализации программ, способствующих формированию межкультурной коммуникативной компетенции, адаптированной к условиям образовательной среды Кыргызстана. Полученные данные могут быть полезны преподавателям английского языка, методистам, авторам учебников и учреждениям, которые разрабатывают стандарты и программы непрерывного образования для учителей

Ключевые слова: межкультурное обучение; языковая компетенция; адаптация учебных материалов; национальные особенности; педагогическая практика; образовательная среда



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Opportunities for developing students' personal qualities through mathematics lessons

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Abstract. Contemporary education increasingly emphasises not only the acquisition of knowledge but also the formation of students' personal and social competencies, highlighting the developmental and educational potential of subject lessons. This study aimed to identify pedagogical conditions and methodological strategies that effectively foster responsibility, accuracy, perseverance, creativity, logical reasoning, and collaborative skills among schoolchildren within the context of mathematics instruction. The research employed pedagogical observation, analysis of educational situations, problem-based learning elements, interactive technologies, and structured group work to achieve these objectives. Empirical findings indicated that integrating problem-oriented tasks, collaborative learning formats, and digital educational resources significantly enhances students' cognitive engagement and supports the development of personal and social competencies. During the study, students demonstrated a more responsible approach to task completion, exhibited greater persistence in solving complex problems, explored unconventional solution strategies, and actively participated in discussions. Additionally, notable improvements in collaborative skills were observed: students more frequently assisted peers, considered diverse perspectives, and participated in collective decision-making processes. These outcomes confirmed that mathematics lessons possess substantial educational and formative potential, contributing to the cultivation of ethical, social, and cognitive capacities in students. The practical implications of this research lie in the applicability

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of the proposed methodological approaches within contemporary mathematics teaching. Implementing these strategies can enhance the educational impact of lessons, foster the holistic development of students' personalities, and support the cultivation of key competencies necessary for their academic and social success

Keywords: mathematics education; personal development; problem-based learning; collaborative learning; cognitive engagement; pedagogical strategies

■ INTRODUCTION

In the context of transforming educational paradigms and increasing demands for learners' personal development, the necessity of examining the educational potential of academic disciplines, particularly mathematics, as a means of fostering students' personal qualities has become increasingly urgent. As mentioned by D. Ramamonjisoa (2024), the primary objective of contemporary educational systems is to equip students not only with knowledge, skills, and competencies but also to foster their personal qualities, thereby preparing well-rounded individuals who contribute positively to society. In the 21st century, one of the foremost demands placed on the education sector is the balanced intellectual and spiritual upbringing of individuals (Dzulfikar & Herman, 2023). In this regard, the distinctive role of mathematics lessons must be emphasised, as mathematics, being an exact science, demands systematicity, discipline, and responsibility – qualities that manifest as personal attributes in students' daily lives (Rakes *et al.*, 2023).

Recent studies, like the one by S. Nurhayati *et al.* (2024), have demonstrated that mathematics lessons not only develop intellectual skills but also hold potential for cultivating creativity, logical thinking, perseverance, optimism, and personal values. Through processes such as solving problematic tasks, creative exploration, and logical reasoning in mathematics, students learn patience, persistence, accuracy, and collaboration. Such processes enhance not only their intellectual capabilities but also their personal values. Therefore, scientifically substantiating the educational potential of mathematics lessons and effectively utilising it in pedagogical practice remains highly relevant.

The issue of forming students' personal qualities through mathematics lessons has been explored in pedagogy and psychology for many years. Research on this topic can be divided into three main groups. 1st group: scientific perspectives on the educational potential of mathematics. In pedagogy, mathematics is viewed not merely as a subject for imparting computational knowledge but as a powerful educational tool that teaches accuracy, responsibility, and patience. K. Ushinsky (1948) noted that mathematics fosters students' abilities in discipline, systematicity, and precise thinking. J. Piaget (2001) demonstrated that the staged development of logical thinking in mathematics lessons is closely linked to the formation of a child's intellect. S. Duma *et al.* (2024) emphasised the educational function of mathematics, particularly its role in developing logical thinking and perseverance. 2nd group: studies on the formation of personal qualities. The formation of personal qualities is a complex process achieved through education, upbringing, and social adaptation. The

process of overcoming difficulties in mathematics aligns with the child's zone of proximal development, indicating that personal qualities are shaped through various learning activities, including mathematical tasks. E. Mambetakov (2023) highlighted the necessity of integrating national values with subject-specific teaching to form personal qualities. 3rd group: contemporary pedagogical methods in mathematics lessons. In recent years, innovative teaching technologies in mathematics have been widely adopted, promoting the development of students' personal qualities (Uygun *et al.*, 2024). Problem-based learning encourages independent thinking and persistence in seeking solutions. Interactive methods (dialogic teaching, group work) foster collaboration, mutual respect, and responsibility. According to Sh. Altynbekov *et al.* (2023), digital educational resources enhance students' exploratory abilities and creative qualities. Moreover, the digitalisation of mathematics education necessitates the formation of teachers' readiness to effectively integrate digital technologies into the pedagogical process, which directly influences the development of students' personal and professional competencies (Solopko & Shevchuk, 2022).

As evidenced by the aforementioned studies, mathematics lessons possess immense potential for forming students' personal qualities. However, comprehensive research on this issue within the Kyrgyz education system remains insufficient. Therefore, a deeper theoretical and practical investigation into the educational potential of mathematics is highly pertinent. The aim of this study was to identify the theoretical foundations and practical approaches for forming students' personal qualities through mathematics lessons. To achieve this aim, the following objectives were set: analysing scientific literature and recent studies related to the issue; determining the pedagogical conditions for forming personal qualities in mathematics lessons; and verifying their effectiveness through experimental work.

■ MATERIALS AND METHODS

This study employed a multifaceted methodological approach to investigate the role of mathematics lessons in fostering students' personal qualities. The research design integrated theoretical analysis, empirical investigation, and pedagogical experimentation to identify effective conditions and strategies for developing personal attributes through mathematics education. The theoretical foundation was established by reviewing scholarly literature, pedagogical practices, and empirical studies, which informed the identification of key approaches to realising the educational potential of mathematics lessons. The research

focused on secondary school students, with the subject of investigation being their personal qualities and the pedagogical methods employed to cultivate these attributes during mathematics lessons. The study was conducted at Secondary Schools No. 49 and No. 15 in Bishkek, Kyrgyz Republic, involving a total of 80 students from grades 7-8. These students were divided equally into an experimental group (40 students) and a control group (40 students), with group formation accounting for students' academic performance, age characteristics, and classroom learning conditions to ensure comparability. The empirical phase of the study spanned three months (February-April 2024) and involved weekly mathematics lessons. Data collection methods included pedagogical observation, surveys, testing, and documentation of student activities. Observation protocols were specifically designed to assess students' responsibility, perseverance, creativity, and collaboration skills. Group activities were recorded on video, and behavioural analysis was conducted using a coding methodology to evaluate interactions and outcomes.

The control group followed traditional explanatory-demonstrative and reproductive teaching methods, while the experimental group was exposed to innovative pedagogical approaches, including problem-based learning, pair and group work, interactive technologies, and mathematical

games. These methods were selected to target the development of logical thinking, creativity, perseverance, accuracy, and responsibility. For instance, problem-based tasks rooted in real-life scenarios, argumentative discussions, and interactive assignments via online platforms were implemented to foster students' responsibility, creativity, perseverance, and logical reasoning. To ensure methodological rigour, the study incorporated a mixed-methods approach, combining qualitative and quantitative data analysis. Qualitative data were processed through content analysis and behavioural coding, while quantitative data were evaluated using statistical methods to compare outcomes between the experimental and control groups. Results were presented in tables and diagrams to facilitate comparative analysis. Ethical considerations were strictly adhered to throughout the study. Written consent was obtained from the parents of all participating students, and data were anonymised to ensure confidentiality. Personal information was securely stored and processed in accordance with ethical research standards (ASA, 2018). The study utilised a range of instruments to assess students' personal qualities and the effectiveness of pedagogical methods, as outlined in Table 1. The criteria for evaluating students' personal qualities were developed to ensure consistency and objectivity, as presented in Table 2.

Table 1. Data collection instruments

Instrument	Purpose	Sample questions
Student surveys	To assess students' responsibility, creativity, and teamwork skills	1. Do you strive to complete tasks on time? (Yes/No/Sometimes) 2. Do you propose ideas during group work? (Yes/No/Always) 3. Do you find it interesting to devise new solutions? (Yes/No/Sometimes)
Teacher surveys	To evaluate students' behaviour and personal qualities from the teacher's perspective	1. This student completes tasks responsibly. (Agree/Disagree/Difficult to assess) 2. This student shows initiative in group work. 3. This student applies creative approaches to challenging tasks.
Test tasks	To measure creativity, logical thinking, and ability to find alternative solutions	1. Create as many new figures as possible from a given shape. 2. Propose alternative methods to solve the given example. 3. Suggest three possible solutions to a problematic situation.
Self-assessment questionnaire	To evaluate students' self-perception of their qualities and engagement in the learning process	1. I always complete tasks on time. (Yes/No/Sometimes) 2. Proposing new ideas is easy for me. 3. I feel comfortable working with others.

Source: authors' development

Table 2. Criteria for assessing personal qualities

Personal quality	Assessment criteria
Responsibility	Level of timely and accurate task completion
Creativity	Ability to propose non-standard solutions and demonstrate originality
Perseverance and collaboration	Ability to constructively resolve disagreements, listen to and support peers in group work
Accuracy and logical thinking	Consistency and reasoning in solving mathematical problems

Source: authors' development

An illustrative task used in the experimental group involved the following problem: "Given a triangle with two known sides, $AB = 5$ cm and $AC = 7$ cm, what additional information is needed to determine the third side? If the goal is to maximise the perimeter, what strategy could be applied?" This task encouraged students to move beyond standard formulas, engaging their logical reasoning,

creativity, and perseverance. Through group discussions, students proposed diverse solutions, evaluated each other's ideas, and developed teamwork, respect, and responsibility. The use of interactive technologies, such as digital presentations and online platforms, further enhanced students' engagement by allowing them to visualise and discuss solutions collaboratively (Table 3).

Table 3. Students' dialogues and solutions

No.	Problem/strategy	Student	Dialogue/solution
1	Determining the third side	A	We need one angle to find the third side, right?
		B	Yes, or we could calculate the longest possible third side to maximise the perimeter.
		C	If we know the largest angle, the third side would correspond to it.
2	Defining the strategy	D	The longest side would maximise the perimeter.
		E	So, we need the angle formed by sides AB and AC, then we can find the third side.
		F	I could use the cosine theorem to calculate the third side.
3	Creative ideas	G	If we change the shape of the triangle, would the perimeter increase?

Source: authors' development

The combination of these methods and instruments enabled a comprehensive evaluation of the pedagogical conditions and strategies that effectively foster students' personal qualities through mathematics lessons. The findings from this methodological framework provide a robust basis for practical recommendations in modern mathematics education.

■ RESULTS AND DISCUSSION

The findings of this study underscore the significant role of mathematics lessons in fostering students' personal qualities, extending beyond intellectual development to encompass ethical, emotional, and social competencies. The research, conducted with 80 students, compared the outcomes of traditional teaching methods (control group) with innovative pedagogical approaches (experimental group), including problem-based learning, group work, and interactive technologies. Mathematics lessons were found to cultivate a range of personal qualities, including logical thinking, creativity, accuracy, responsibility, perseverance, and collaboration skills. The process of solving mathematical problems and applying formulas systematically enhances students' abilities to analyse, compare, and generalise, which are transferable to other academic disciplines and real-life decision-making (Ihsan *et al.*, 2024). For instance, tasks requiring arithmetic or algebraic solutions compel students to approach each step methodically, fostering perseverance and patience as they strive for accurate

outcomes. Moreover, mathematics lessons promote accuracy and responsibility. The precise application of formulas, meticulous calculations, and verification of results instill a sense of accountability in students. In geometry lessons, for example, constructing figures or measuring dimensions demands precision, as a single error can compromise the entire task. This process reinforces students' attention to detail and responsibility for their work (Pogosyan, 2019).

The study also highlighted the role of mathematics in nurturing creativity. Non-standard tasks in algebra and geometry encourage students to explore alternative solutions, develop innovative approaches, and independently devise logical strategies (Altynbekov *et al.*, 2023). This creative engagement not only enhances problem-solving skills but also fosters a mindset open to experimentation and innovation. From a social perspective, group-based activities and interactive methods in mathematics lessons cultivate collaboration, mutual respect, and social responsibility. Collaborative problem-solving, idea-sharing, and peer evaluation during group discussions promote humanistic values and teamwork skills. These interactions, facilitated by dialogic teaching and digital tools, create an environment conducive to developing social competencies essential for academic and societal success (Lukashova & Kadyr, 2023). The empirical results, summarised in Table 4, demonstrate the comparative effectiveness of the pedagogical approaches used in the experimental and control groups.

Table 4. Results summary (% of students exhibiting personal qualities)

Personal quality	Control group (%)	Experimental group (%)	Difference (%)
Responsibility (timely and accurate task completion)	65	88	+ 23
Creativity (non-standard solutions)	52	81	+ 29
Perseverance and collaboration (active participation in group work)	60	85	+ 25
Accuracy and logical thinking	58	83	+ 25

Source: authors' development

The analysis of Table 4 reveals significant improvements in the experimental group across all assessed personal qualities:

■ **Responsibility:** the experimental group exhibited a 23% higher rate of timely and accurate task completion compared to the control group, indicating that interactive and problem-based methods effectively foster responsibility.

■ **Creativity:** a 29% increase in non-standard solutions in the experimental group highlights the efficacy

of problem-based tasks in developing creative thinking and originality.

■ **Perseverance and collaboration:** the experimental group showed a 25% improvement in active participation in group work, demonstrating that collaborative methods enhance teamwork and constructive conflict resolution.

■ **Accuracy and logical thinking:** a 25% higher performance in the experimental group reflects improved systematic and reasoned approaches to problem-solving, driven by innovative pedagogical strategies.

These findings confirm that the experimental methods – problem-based learning, interactive technologies, and group activities – yielded 23-29% higher effectiveness in fostering personal qualities compared to traditional methods. The structured integration of real-life problem scenarios, as exemplified in the triangle perimeter task, encouraged students to engage critically and collaboratively, further reinforcing these outcomes. The results align with prior research indicat-

ing that problem-based learning cultivates perseverance and emotional resilience by challenging students to overcome difficulties and pursue goals (Popova, 2019). Furthermore, group work and interactive technologies foster social competencies, such as mutual respect and collective decision-making, which are critical for holistic personal development (Slovák & Fitzpatrick, 2015). The directions for forming personal qualities in mathematics lessons are presented in Table 5.

Table 5. Key directions for forming personal qualities in mathematics lessons

Intellectual development	Emotional and ethical upbringing	Social competencies
Develops logical thinking, analytical skills, and creativity	Fosters perseverance, patience, and accuracy	Enhances collaboration, mutual respect, and social responsibility

Source: developed by the authors based on E. Pogosyan (2019)

The incorporation of digital educational resources, such as interactive platforms and pedagogical games, further amplifies these effects by motivating students to engage actively and think creatively, as mentioned by Y. Li *et al.* (2024). These tools not only enhance cognitive engagement but also encourage independent exploration and collaborative problem-solving. To maximise the development of personal qualities in mathematics lessons, teachers are encouraged to adopt a multifaceted approach. This includes actively incorporating problem-based learning, where tasks require independent analysis and creative problem-solving to foster perseverance, creativity, and responsibility. Furthermore, as noted by A. Piyakun & S. Phusee-Orn (2025), facilitating group discussions and interactive dialogues enhances collaboration, mutual respect, and social responsibility. Individualised tasks should be used to promote independent thinking and accountability, reinforcing students' sense of ownership over their learning. According to A. Kaldybaeva *et al.* (2021),

integrating digital tools and games, such as interactive presentations, online platforms, and mathematical games, boosts motivation and develops creativity and logical thinking. Finally, allocating time for reflective practice allows students to analyse their actions and achievements, fostering self-awareness, analytical skills, and emotional regulation. These recommendations, grounded in the study's findings, provide a practical framework for enhancing the educational and formative impact of mathematics lessons.

Table 6 outlines the relationship between specific teaching methods and their impact on students' personal qualities in mathematics lessons. It highlights how problem-based learning enhances emotional intelligence, interactive dialogues improve mathematical reasoning, video-based instruction fosters responsibility, assessment practices reflect the influence of personal qualities on achievement, and the content and methods of mathematics lessons realise their educational potential.

Table 6. Teaching methods and students' personal qualities

No.	Methods	Outcomes
1	Problem-based learning (emotional intelligence)	Problem-based learning fosters students' mathematical problem-solving abilities and emotional intelligence (Karjanto & Acelajado, 2022)
2	Interactive dialogue (mathematical reasoning)	Interactive dialogues enhance mathematical reasoning and deepen conceptual understanding (Dalinger, 2016)
3	Video-based instruction (students' responsibility)	The use of video materials in mathematics lessons directly influences students' responsibility in the learning process (Golysheva, 2016)
4	Assessment of mathematical achievements (students' personal qualities)	Students' personal qualities, including intelligence, creativity, and prior knowledge, strongly influence their mathematical achievements (Kolpakova, 2018)
5	Implementation of educational functions in mathematics lessons	The educational potential of mathematics lessons is realised through their content and teaching methods (Balde, 2019)

Source: authors' development

Previous research has shown that problem-based learning significantly improves student engagement in mathematics by encouraging active participation and critical thinking (Moldybaeva, 2016). Interactive methods have been found to enhance collaboration among students, promoting a supportive learning environment. Additionally, as mentioned by H. Serin (2023), the use of digital tools in math lessons boosts student motivation, making abstract concepts more accessible and enjoyable. These approaches contribute to a more dynamic classroom atmosphere,

where students develop not only mathematical proficiency but also essential life skills. Overall, these insights highlight the transformative potential of innovative pedagogical strategies in mathematics education.

CONCLUSIONS

This study investigated the efficacy of mathematics lessons in fostering students' personal qualities. The research compared traditional teaching methods (control group) with innovative pedagogical strategies (experimental group),

including problem-based learning, group and pair work, and interactive technologies. The findings confirmed that mathematics lessons serve as a robust platform for both educational and formative development, cultivating intellectual, ethical, and social competencies. Comparative analysis revealed the superior effectiveness of innovative methods in developing personal qualities. Specifically, the experimental group demonstrated a 23% increase in responsibility, as evidenced by timely and accurate task completion. Creativity improved by 29%, with students proposing more non-standard solutions and original ideas. Perseverance and collaboration rose by 25%, with students actively engaging in group discussions and constructively resolving disagreements. Additionally, accuracy and logical thinking improved by 25%, reflecting enhanced systematic and reasoned problem-solving skills. These results, supported by quantitative and qualitative data, underscore the significant formative potential of mathematics lessons when innovative pedagogical approaches are employed.

The study highlighted that problem-based tasks, interactive resources, and collaborative activities significantly enhance students' cognitive engagement and contribute to the development of moral and social competencies. By integrating real-life problem scenarios and digital tools, mathematics lessons foster not only academic proficiency but also qualities such as responsibility, perseverance, creativity, and teamwork, preparing students for both academic and societal success. The practical implications of these findings lie in their applicability to modern mathematics education,

offering teachers actionable strategies to enhance the formative impact of lessons. The proposed methods – problem-based learning, group work, interactive technologies, and reflective practices – provide a comprehensive framework for nurturing well-rounded individuals equipped with essential life skills. In conclusion, this study provides robust evidence that mathematics lessons, when designed with innovative pedagogical strategies, are a powerful tool for fostering students' intellectual, moral, and social development, equipping them for success in diverse contexts. Future investigations could explore several avenues to build on these findings. First, a deeper examination of the impact of digital platforms and online resources on students' personal qualities in mathematics lessons is warranted. Second, longitudinal studies tracking the development of personal qualities across different age groups could provide insights into their dynamic progression. Finally, further research into the role of mathematics lessons in developing emotional intelligence and creative thinking could enhance understanding of their broader formative potential.

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Математика сабагы аркылуу окуучулардын инсандык сапаттарын калыптандыруу мүмкүнчүлүктөрү

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Аннотация. Азыркы билим берүү системасы билимди гана өздөштүрүүгө эмес, ошондой эле окуучулардын жеке жана социалдык компетенцияларын калыптандырууга басым жасайт, бул предметтик сабактардын тарбиялоо жана өнүктүрүү потенциалын баса белгилейт. Бул изилдөөнүн максаты – мектеп окуучуларынын математиканы үйрөнүү процессинде жоопкерчилик, тактык, чыдамкайлык, чыгармачылык, логикалык ой жүгүртүү жана кызматташтык көндүмдөрүн өнүктүрүүгө эффективдүү шарттарды жана методикалык стратегияларды аныктоо болду. Максатка жетүү үчүн педагогикалык байкоо, окуу ситуацияларын талдоо, проблемалык окуунун элементтери, интерактивдүү технологиялар жана топтук ишти уюштуруу колдонулду. Эмпирикалык жыйынтыктар көрсөткөндөй, проблемалык тапшырмаларды, кызматташтык формаларын жана санариптик окуу ресурстарын киргизүү окуучулардын билими жана көндүмдөрүн активдештирип, жеке жана социалдык компетенцияларын өнүктүрүүгө салым кошот. Изилдөө учурунда окуучулар тапшырмаларды жоопкерчилик менен аткарып, татаал маселелерди чечүүдө чыдамкайлык көрсөтүп, өзгөчө чечимдерди табуу жана талкууларга активдүү катышуу көндүмдөрүн өнүктүрүштү. Ошондой эле кызматташтык көндүмдөрү жакшырганы байкалган: окуучулар бири-бирине көбүрөөк жардам көрсөтүп, ар кандай көз караштарды эске алып, биргелешип чечим кабыл алышты. Бул жыйынтыктар математикалык сабактардын чоң тарбиялык жана өнүктүрүүчү потенциалы бар экенин, окуучулардын этикалык, социалдык жана когнитивдик компетенцияларын өнүктүрүүгө салым кошо аларын тастыктайт. Изилдөөнүн практикалык мааниси – сунушталган методикалык ыкмаларды заманбап математика окутуу тажрыйбасында колдонууга мүмкүнчүлүк берет. Аны ишке киргизүү сабактардын тарбиялык таасирин күчөтүп, окуучулардын инсандык өнүгүүсүнө жана алардын академиялык жана социалдык ийгилигине керектүү негизги компетенцияларды калыптандырууга шарт түзөт.

Негизги сөздөр: математикалык билим берүү; жеке өнүгүү; проблемалык окуу; кызматташтыкта окуу; билимин активдештирүү; педагогикалык стратегиялар

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Аннотация. Современное образование все больше акцентирует внимание не только на усвоении знаний, но и на формировании личностных и социальных компетенций учащихся, что подчеркивает воспитательный и развивающий потенциал уроков отдельных предметов. Цель данного исследования заключалась в выявлении педагогических условий и методических стратегий, способствующих развитию ответственности, точности, настойчивости, креативности, логического мышления и навыков сотрудничества у школьников в процессе обучения математике. Для достижения этих целей использовались методы педагогического наблюдения, анализа учебных ситуаций, элементы проблемного обучения, интерактивные технологии и организация групповой работы. Эмпирические результаты показали, что включение проблемных заданий, коллективных форм обучения и цифровых образовательных ресурсов значительно повышает познавательную активность учащихся и способствует развитию личностных и социальных компетенций. В ходе исследования учащиеся проявляли более ответственное отношение к выполнению заданий, демонстрировали настойчивость при решении сложных задач, находили нестандартные способы решения и активно участвовали в обсуждениях. Кроме того, наблюдалось заметное улучшение навыков сотрудничества: учащиеся чаще помогали друг другу, учитывали разные точки зрения и участвовали в совместном принятии решений. Эти результаты подтверждают, что уроки математики обладают значительным воспитательным и развивающим потенциалом, способствуя формированию этических, социальных и когнитивных компетенций школьников. Практическая ценность исследования заключается в возможности применения предложенных методических подходов в современной практике преподавания математики. Их внедрение может усилить воспитательное воздействие уроков, способствовать гармоничному развитию личности учащихся и формированию ключевых компетенций, необходимых для их академического и социального успеха.

Ключевые слова: образование по математике; личностное развитие; проблемное обучение; совместное обучение; познавательная активность; педагогические стратегии



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Pedagogy of inclusive education and gender aspects of preventing aggressive behaviour among adolescents through physical activity: An integrative review

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Abstract. The rise in aggressive behaviour among adolescents remains one of the significant challenges facing contemporary educational systems and calls for the development of effective preventive strategies. Despite accumulating evidence of the positive impact of physical activity on behavioural regulation, inclusive and gender-sensitive approaches to preventing aggression through physical education remain insufficiently developed. The aim of this work was to conduct an integrative review of the literature from 2020-2025, synthesising data from systematic reviews and meta-analyses. The findings demonstrated that regular structured physical activity, embedded in a pedagogically organised environment incorporating elements of cooperative interaction, reflection, and sustained teacher support, contributes to a moderate reduction in levels of hostility, impulsivity, and interpersonal conflicts. The most pronounced preventive effect was observed in programmes focused on teamwork and emotional regulation, compared with unstructured or purely competitive forms. The review highlighted gender differences: boys more frequently exhibit overt physical aggression and participate more actively in organised activities, whereas girls tend towards relational or internalised aggression and face additional barriers to participation (sociocultural norms, declining interest during adolescence). Adolescents with disabilities, particularly girls, experience intersecting restrictions that limit their access to the protective potential of physical activity. The conclusions indicated the need to develop adapted forms of physical education and implement gender-sensitive strategies that include the cultivation of empathy, self-awareness, and social partnership. Such approaches strengthen psychosocial well-being and reduce the risks of deviant behaviour among adolescents with diverse educational needs. The practical significance lies in the potential for educators and inclusive

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education specialists to use these findings to create evidence-based preventive models aimed at fostering sustainable social interaction skills

Keywords: social inclusion; prevention of deviant behaviour; emotional regulation; gender vulnerability; adaptive physical activity; psychosocial development; adolescent well-being

■ INTRODUCTION

Adolescent aggression remains a persistent challenge for educational systems worldwide and has far-reaching consequences for mental health, academic achievement, and social integration. International monitoring data by WHO & HBSC (2024) indicated that peer violence and aggressive behaviour continue to affect a substantial proportion of adolescents, particularly within school environments. Contemporary research increasingly conceptualises adolescent aggression not merely as individual deviance, but as a behavioural response shaped by deficits in emotional regulation, limited social connectedness, and restricted opportunities for constructive social interaction (Darmadi & Badayai, 2021). Within this context, physical activity (PA) has gained growing recognition as a pedagogical resource for the prevention of aggressive behaviour. A substantial body of empirical evidence in the work by Y. Zhu *et al.* (2022) demonstrated that structured physical activity and school-based sports programmes are associated with reductions in aggressive and antisocial behaviour, while simultaneously supporting the development of prosocial skills and emotional self-regulation. Meta-analytic findings consistently confirm moderate and stable effects of PA on aggression-related outcomes across diverse adolescent populations. Nevertheless, despite this accumulating evidence, the translation of research findings into effective and equitable educational practice remains inconsistent.

One of the central challenges concerns the insufficient attention paid to the pedagogical conditions under which physical activity produces preventive effects. While systematic reviews and meta-analyses establish the overall efficacy of PA, they frequently offer limited insight into the specific pedagogical mechanisms involved, such as co-operative learning structures, guided reflection, or the role of teacher facilitation in shaping social behaviour (Shen *et al.*, 2024). As a result, physical activity is often implemented in educational settings primarily as a technical, fitness-oriented, or competitive component, rather than as a deliberately structured pedagogical intervention aimed at social-emotional development and behavioural regulation. A second major challenge relates to the principles of inclusive education. Preventive interventions targeting aggressive behaviour must be accessible and effective for all adolescents, including those with disabilities or special educational needs. Research by E. Saure *et al.* (2022), A. Rusillo-Magdaleno *et al.* (2024) demonstrated that adolescents with disabilities frequently encounter structural, social, and attitudinal barriers to participation in physical activity, which may intensify social exclusion and vulnerability to bullying and peer victimisation. Despite these findings, inclusive perspectives remain insufficiently integrated into

many studies examining the relationship between physical activity and aggression, and adolescents with disabilities are often underrepresented in intervention research.

Gender differences further complicate the implementation of preventive physical activity programmes. Empirical studies consistently show that boys and girls differ both in the expression of aggressive behaviour and in their patterns of participation in physical activity. Boys are more likely to display overt and physical forms of aggression, whereas girls more often experience relational or internalised forms of aggressive behaviour. At the same time, according to K. Duffey *et al.* (2021), I. Arumi-Prat *et al.* (2025), girls' participation in organised physical activity tends to decline during adolescence due to sociocultural norms, safety concerns, and limited access to gender-sensitive programmes. When these differences are not explicitly addressed, physical activity-based interventions risk reproducing existing inequalities rather than mitigating them. Taken together, these findings indicate a critical gap at the intersection of pedagogy, inclusion, and gender. Although previous studies have examined physical activity and aggression, inclusive practices in physical education, or gender differences in adolescent behaviour, these dimensions are most often addressed in isolation (Luo & Li, 2024; Yang *et al.*, 2024). There remains a lack of integrative analyses that examine how physical activity can be pedagogically designed to prevent aggression while simultaneously responding to inclusive and gender-related challenges.

The aim of this review was to identify the specific pedagogical conditions under which structured physical activity, delivered within inclusive educational settings, most effectively reduces aggressive behaviour in adolescents. Particular attention was given to the interplay between pedagogical design, gender differences in participation and outcomes, and the compounded barriers arising at the intersection of gender and disability. By adopting this integrative lens, the review sought to offer theoretically grounded recommendations for the development of gender-responsive and inclusive physical education programmes.

■ MATERIALS AND METHODS

This study was designed as an integrative review of the literature, synthesising existing empirical evidence and policy documents on the relationship between physical activity, aggressive behaviour, and inclusive education among adolescents. An integrative review approach was chosen to bring together findings from diverse sources, including systematic reviews, meta-analyses, and selected primary studies, while contextualising them within inclusive and gender-responsive educational frameworks. A structured

literature search was conducted mostly in the Scopus and Web of Science databases in 2024-2025. Search terms included combinations of “physical activity”, “sport”, “physical education”, “aggression”, “bullying”, “emotional regulation”, “adolescent”, “inclusion”, “disability”, and “gender”. Articles published between 2020 and 2025 were considered. The search initially yielded 487 records; after screening titles, abstracts, and full texts for relevance, a final set of key sources was selected for narrative synthesis (37 sources, including official documents).

Sources were included if they: (a) focused on adolescents (approximately 10-19 years); (b) examined physical activity or sport in relation to aggressive, antisocial, or bullying-related behaviours; and (c) addressed inclusion (disability/special educational needs) and/or gender dimensions. Systematic reviews, meta-analyses, primary empirical studies, and selected international policy reports (e.g., UNICEF, WHO) were prioritised. Key findings were extracted and organised thematically around three main dimensions: (1) pedagogical mechanisms linking physical activity to aggression prevention; (2) inclusive conditions and barriers to participation; (3) gender-related differences in outcomes and access. The synthesis was narrative, with emphasis on convergent findings across sources and contextual interpretation, including reference to the Kyrgyz educational context. To situate the international evidence, the review refers to the Law of the Kyrgyz Republic No. 179 “On Education” (2023) and the Concept for the Development of Inclusive Education in the Kyrgyz Republic for 2019-2023 (2019). These documents provide the normative framework for interpreting structural and implementation challenges in inclusive physical education. This review was based solely on publicly available published sources and required no ethical approval.

■ RESULTS AND DISCUSSION

Quantitative evidence from meta-analyses on physical activity and aggression reduction

The integrative review of the selected sources reveals a consistent and convergent body of evidence supporting the role of physical activity in the prevention of aggressive behaviour among adolescents. Beyond demonstrating overall effectiveness, the findings underscore that the preventive impact of physical activity is not uniform but depends on pedagogical design, contextual conditions, and individual characteristics of participants. The results are therefore presented as a narrative synthesis that integrates quantitative evidence from meta-analyses with findings from empirical studies and international policy documents. A substantial proportion of the reviewed literature provides quantitative evidence indicating that participation in physical activity is associated with a reduction in aggressive behaviour among adolescents. Systematic reviews and meta-analyses consistently report small to moderate effect sizes, suggesting that physical activity-based interventions can make a meaningful contribution to behavioural regulation when implemented within educational or community settings.

One of the most comprehensive meta-analyses, conducted by N. Ouyang & J. Liu (2023), demonstrates a moderate overall reduction in aggressive behaviour following structured physical activity interventions. Importantly, the strongest effects were observed for hostility-related outcomes, indicating that physical activity may be particularly effective in addressing the emotional and attitudinal dimensions of aggression. The authors further report that interventions lasting between eight and sixteen weeks yield more pronounced effects, highlighting the importance of sustained and systematically organised programmes rather than short-term or sporadic activities. Comparable conclusions are reported by Y. Zhu *et al.* (2022), whose meta-analysis focuses specifically on physical aggression. Their findings indicate that participation in physical activity is associated with a significant reduction in physically aggressive behaviours, with team-based activities producing stronger effects than individual forms of exercise. This pattern suggests that cooperative and socially interactive forms of physical activity may enhance preventive outcomes by fostering peer interaction, mutual responsibility, and shared goal attainment. Evidence from Y. Yang *et al.* (2023) further supports the effectiveness of sports-based interventions as a specific subtype of physical activity. Their meta-analysis shows that sports participation is associated with reduced aggression across adolescent populations, with larger effects observed in early adolescence. This age-related variation suggests that preventive physical activity interventions may be particularly effective when introduced before aggressive behaviour patterns become stable and habitual.

Beyond direct measures of aggression, several reviews identify emotional regulation as a central mediating mechanism. J. Li *et al.* (2022) report consistent improvements in emotional regulation across randomised controlled trials, indicating that physical activity supports the development of self-regulatory capacities that are closely linked to aggressive behaviour. These findings are consistent with broader evidence summarised by J. Wu *et al.* (2025), who demonstrate that physical activity interventions contribute to reductions in externalising problems within the wider context of adolescent mental health. Recent meta-analytic evidence further supports these findings. For instance, M. Carcelén-Fraile *et al.* (2025) reported a large significant effect of structured physical activity on emotional regulation in children and adolescents with neurodevelopmental disorders (Hedges' $g = -1.204$, $p < 0.001$), including reductions in aggression, anxiety, and behavioural problems. Similarly, Q. Fu *et al.* (2025) found moderate improvements in overall mental health (standardised mean difference (SMD) = 0.37), stress reduction (SMD = 0.86), and social competence (SMD = 0.56) among typically developing youth, highlighting PA's role in fostering psychosocial well-being.

Taken together, the quantitative evidence indicates that physical activity exerts a measurable and meaningful influence on aggressive behaviour among adolescents. At the

same time, variability in effect sizes across studies points to the decisive role of intervention characteristics, pedagogical structure, and contextual factors. These findings provide a clear rationale for examining how physical activity must be deliberately designed and pedagogically structured in order to maximise its preventive potential. The findings of

the reviewed meta-analyses indicate that physical activity is consistently associated with a moderate reduction in aggressive behaviour among adolescents. Across the analysed studies, effect sizes generally fall within the range of g /SMD -0.38 to -0.55, suggesting a stable and meaningful impact on both aggression and emotional regulation (Table 1).

Table 1. Quantitative effects of physical activity on aggression-related outcomes

Source (type)	Primary outcome	Overall effect size (95% CI)	Subgroup/moderator analysis	Key quantitative insight
N. Ouyang & J. Liu (2023) (SR/MA)	Total aggression	$g = -0.49$ [-0.61, -0.37]	Hostility: $g = -0.83$ [-1.12, -0.54]	Interventions of 8-16 weeks show moderate-to-large effects
Y. Zhu et al. (2022) (SR/MA)	Physical aggression	SMD = -0.53 [-0.79, -0.27]	Team vs. individual sports: $p < 0.05$	Cooperative PA contexts yield stronger effects
Y. Yang et al. (2023) (SR/MA)	Aggression (sports interventions)	SMD = -0.41 [-0.56, -0.26]	Larger effects in early adolescence	Sports are an effective PA subtype
L. Shen et al. (2024) (SR/MA)	School-based aggression	$g = -0.38$ [-0.50, -0.26]	Cognitive components: + 22% effect	Pedagogical design enhances outcomes
J. Li et al. (2022) (MA)	Emotional dysregulation	$g = -0.55$ [-0.70, -0.40]	RCTs only	Emotional regulation is a key mediator

Note: SR/MA – systematic review and meta-analysis; g – Hedges' g ; SMD – standardised mean difference; CI – confidence interval; RCT – randomised controlled trial

Source: compiled by the authors

The synthesis presented in Table 1 reinforces the argument that physical activity serves not only physiological but also psychosocial and moral functions within educational contexts. Across the reviewed meta-analyses, structured interventions consistently demonstrate moderate to large reductions in aggression-related outcomes, particularly when team-based or cooperative formats are employed over prolonged periods. These quantitative patterns align with broader evidence that physical activity promotes emotional regulation, self-control, and interpersonal tolerance, thereby acting as a preventive mechanism against aggressive behaviour in adolescents. However, effect sizes vary depending on programme design, duration, and participant characteristics, underscoring the need for pedagogically intentional implementation to maximise benefits in inclusive settings.

Pedagogical mechanisms shaping inclusive physical activity interventions

The analysis of empirical studies indicates that the preventive effects of physical activity on adolescent aggression depend not merely on participation itself, but largely on how physical activity is pedagogically structured within educational settings. Across the reviewed sources, physical activity emerges as an effective preventive tool primarily when it is embedded in a deliberately organised learning environment that supports social interaction, emotional regulation, and inclusive participation. One of the most consistently identified mechanisms is the use of cooperative learning formats in physical education and school-based sports. According to A. Lane (2025), activities built around shared goals, collective responsibility, and joint problem-solving create conditions that reduce interpersonal tension and aggressive responses. School sports

programmes that emphasise cooperation rather than competition are associated with lower levels of aggressive behaviour and fewer peer conflicts (Wang et al., 2025). This effect appears to be linked to the presence of social feedback loops, in which adolescents receive immediate responses from peers and teachers regarding acceptable behaviour. Such environments encourage negotiation, perspective-taking, and mutual accountability, which are central to the development of prosocial behaviour. T. Kaloudis et al. (2022) identify cooperative games and non-elimination activities as core elements of inclusive physical education, particularly for students who are vulnerable to exclusion or marginalisation. A second key pedagogical mechanism concerns the integration of social-emotional learning components into physical activity programmes. Multiple studies demonstrate that physical activity is more effective in reducing aggressive behaviour when it is combined with explicit opportunities to develop emotional awareness and self-regulation skills (Yue et al., 2025). Programmes that include structured reflection on emotional experiences during activities, guided discussions of conflict situations, or role-playing exercises focused on cooperation and fairness show stronger preventive effects than physical activity implemented in isolation. From a pedagogical perspective, this indicates that physical activity functions not simply as a means of energy expenditure, but as a context for experiential learning in which adolescents practice managing emotions and responding to social challenges in real time.

Complementary evidence from X. Wang et al. (2022) indicates that physical exercise yields a moderate reduction in depressive symptoms among adolescents (SMD = -0.64, $p < 0.01$), which often co-occurs with internalised forms of aggression. Moreover, H. Yu et al. (2024) demonstrated in a chain-mediated model that physical activity reduces

aggressive behaviour in young adults primarily through enhanced self-control (indirect effect 28.63%) and self-efficacy, underscoring the importance of reflective and supportive pedagogical practices in translating physiological benefits into behavioural regulation. Moreover, improvements in self-control and related psychological resources mediate the relationship between physical activity and reductions in aggression, underscoring the importance of intentional pedagogical design. Teacher competence and adaptive instructional practices represent a third central mechanism identified in the review. According to Á. Abós *et al.* (2021), the benefits of physical activity are closely linked to teachers' capacity to adapt tasks, manage group dynamics, and establish a supportive climate for all learners. Educators trained in inclusive pedagogical approaches are better equipped to modify activities according to students' abilities and to prevent situations in which exclusion, frustration, or misunderstanding may provoke aggressive responses. Importantly, teacher support extends beyond technical adaptation to include fostering respectful communication, modelling non-aggressive conflict resolution, and ensuring that all students experience a sense of belonging within the group. As noted by N. Pinchak (2024), a positive school climate – often shaped by teacher practices – is associated with lower levels of bullying and peer violence, highlighting the broader institutional relevance of pedagogical competence.

Taken together, these findings indicate that physical activity functions as an effective preventive intervention only when supported by coherent pedagogical strategies that prioritise cooperation, social-emotional learning, and inclusion. The reviewed evidence demonstrates that inclusive design is not an auxiliary component of physical activity programmes, but a foundational condition for their effectiveness. When pedagogical mechanisms are aligned with inclusive principles, physical activity contributes not only to the reduction of aggressive behaviour, but also to the strengthening of social relationships and the creation of a more supportive educational environment.

Gender-related differences in aggression and participation in physical activity

The reviewed literature consistently demonstrates that gender is a significant factor shaping both patterns of aggressive behaviour among adolescents and their engagement in physical activity. These differences manifest not only in the prevalence and forms of aggression, but also in how boys and girls access, experience, and benefit from physical activity-based interventions. Recognising these gender-related patterns is therefore essential for the development of preventive strategies that are both effective and equitable. Studies show that boys are more likely to exhibit overt and physically expressed forms of aggression, including direct confrontation, physical altercations, and rule-breaking behaviour (Roy & Jha, 2022). At the same time, boys generally participate in physical activity more frequently and with greater intensity, particularly within organised and

competitive sports contexts. This combination creates both preventive opportunities and potential risks. Structured physical activity can provide boys with a socially acceptable setting for channelling energy and developing behavioural self-regulation. However, when physical activity is organised predominantly around competition, dominance, and performance outcomes, it may inadvertently reinforce aggressive norms rather than reduce them. Evidence indicates that boys derive the greatest preventive benefit from programmes that deliberately emphasise cooperation, clearly defined rules, and guided reflection, rather than unregulated competitive interaction. Under these pedagogical conditions, participation in physical activity is associated with a measurable reduction in externalised aggressive behaviour. In contrast, girls tend to display different patterns of aggression, which are more often relational or internalised in nature. These may include social exclusion, indirect hostility, withdrawal, or emotional distress rather than physical confrontation. At the same time, studies consistently report a decline in girls' participation in physical activity during adolescence (WHO, 2022). This trend is commonly linked to socio-cultural barriers such as gender stereotypes, body image concerns, limited access to safe and appropriate spaces, and a lack of activity formats that correspond to girls' interests and social expectations. As a consequence, many girls are excluded from the potential protective effects of physical activity at a developmental stage characterised by heightened emotional vulnerability and social pressure.

The psychosocial benefits of physical activity for girls appear to differ in emphasis from those observed among boys. Rather than primarily reducing overt aggressive behaviour, participation in physical activity among girls is more strongly associated with improvements in emotional regulation, self-esteem, and overall psychological well-being. Systematic reviews indicate that engagement in physical activity contributes to lower levels of internalised symptoms, including anxiety and emotional dysregulation, which themselves constitute risk factors for indirect aggression and interpersonal conflict (Wu *et al.*, 2025). These findings suggest that physical activity serves a preventive function for girls by strengthening emotional resources and resilience, even when immediate behavioural changes are less visible. While sports participation is associated with reduced odds of aggressive behaviour among both boys and girls, the strength of this association tends to be greater for boys. This pattern does not imply that physical activity is less valuable for girls, but rather that its preventive effects operate through different mechanisms and are more sensitive to contextual and pedagogical conditions. Without intentional gender-responsive design, physical activity programmes may fail to address the specific barriers experienced by girls, thereby limiting their effectiveness.

J. Chapin & V. Warne (2020) reinforce the importance of gender-sensitive approaches within educational settings. They emphasise that equal access is not achieved simply by offering identical programmes to all students.

Instead, gender responsiveness involves diversifying activity formats, providing non-competitive or single-sex options where appropriate, ensuring the visibility of female role models, and actively challenging stereotypes that discourage girls' participation. When such measures are implemented, physical activity becomes a more inclusive and supportive space capable of addressing gender-specific patterns of aggression and vulnerability. Overall, the reviewed evidence indicates that gender functions as a critical moderating factor in both participation in physical activity and its preventive effects on aggressive behaviour. Programmes that fail to account for these differences risk reproducing existing inequalities, whereas gender-responsive designs enhance the capacity of physical activity to serve as a meaningful tool for aggression prevention and psychosocial development among adolescents.

Intersectional vulnerability of girls and adolescents with disabilities in physical activity contexts

The analysis of the reviewed literature indicates that the most pronounced forms of exclusion and vulnerability in the context of aggression prevention through physical activity emerge at the intersection of gender and disability. Adolescents who simultaneously belong to these social categories encounter overlapping structural, cultural, and pedagogical barriers that substantially limit their access to physical activity and, consequently, to its preventive benefits. Despite its significance, this intersectional dimension remains insufficiently addressed in many educational interventions. Girls with disabilities are consistently identified as one of the most marginalised groups within educational systems. International evidence points to cumulative disadvantages, including lower school attendance, limited participation in extracurricular activities, and heightened exposure to social exclusion (Mezzanotte, 2022). These factors significantly restrict opportunities for engagement in structured physical activity, which is increasingly recognised as a protective context for social development and aggression prevention. Reduced access to physical activity not only limits physical health outcomes but also constrains opportunities for peer interaction, emotional learning, and the development of self-regulation skills that are critical for mitigating aggressive behaviour.

This situation is often conceptualised as a form of "double invisibility". Gender norms often render girls' needs less visible within sports and physical education, while disability-related barriers further marginalise them within both mainstream and inclusive settings (Avraam & Anagnostou, 2025). This dual exclusion is particularly evident in the context of neurodevelopmental conditions. Research suggests that intellectual disability may attenuate typical gender differences in behavioural expression, including aggression, yet institutional practices and social expectations often continue to operate along gendered lines. As a result, assumptions about participation and behaviour may remain poorly aligned with the actual needs and capacities of these adolescents, reinforcing exclusion

rather than addressing it. Importantly, the barriers faced by adolescents with disabilities – especially girls – extend beyond issues of physical accessibility. Attitudinal factors play a substantial role, including low expectations regarding participation, overprotective practices driven by safety concerns, and persistent stigma related to both disability and female engagement in physical activity. These attitudes frequently result in limited or symbolic participation, where students are formally included in physical education settings but excluded from meaningful engagement. Such forms of passive inclusion may intensify feelings of frustration, social isolation, and vulnerability to peer aggression.

Pedagogical constraints further exacerbate these challenges. O. Ben Rakaa *et al.* (2025) highlighted insufficient teacher preparation in adaptive physical education and inclusive instructional strategies. In the absence of targeted training, educators may struggle to balance task adaptation with group cohesion, or to prevent situations in which frustration and disengagement increase the risk of aggressive responses. This gap between inclusive policy frameworks and everyday classroom practice significantly weakens the preventive potential of physical activity for adolescents whose needs require deliberate pedagogical adjustment. Findings by O. Jesina *et al.* (2022) also demonstrate that exclusion from sports and structured physical activity is associated with elevated risks of bullying and peer victimisation among adolescents with disabilities. This risk is particularly pronounced for girls, who are more likely to experience relational forms of aggression, such as social exclusion, verbal harassment, or indirect hostility. Limited access to supportive physical activity environments may therefore contribute to self-reinforcing cycles of marginalisation, in which exclusion increases vulnerability to aggression, further discouraging participation.

At the same time, as noted by M. Carcelén-Fraile *et al.* (2025), structured physical activity programmes designed to support executive functioning, emotional regulation, and social competence show positive effects among adolescents with neurodevelopmental disorders. Such programmes typically emphasise predictability, clear behavioural expectations, and consistent supportive feedback, creating conditions under which participation becomes both accessible and meaningful. In addition, the integration of adaptive physical activity components into mainstream curricula is increasingly highlighted as a necessary step toward aligning inclusive policy commitments with everyday educational practice. Overall, the findings indicate that effective aggression prevention through physical activity requires more than generalised inclusion strategies. Intersectional vulnerability necessitates targeted, context-sensitive interventions that explicitly account for the combined effects of gender and disability. When these dimensions are systematically addressed through adaptive pedagogy, supportive school climates, and inclusive institutional frameworks, physical activity can function as a powerful resource for reducing aggression and promoting psychosocial well-being among some of the most vulnerable adolescent populations.

Pedagogical and structural conditions for effective prevention

of aggressive behaviour through physical activity

The findings of this integrative review demonstrate that the preventive impact of physical activity-based interventions on aggressive behaviour among adolescents is significantly shaped by pedagogical specificity and broader contextual and structural conditions. Meta-analytic evidence consistently confirms a moderate but stable association between structured physical activity and reductions in aggressive behaviour (Zhu *et al.*, 2022; Ouyang & Liu, 2023; Yang *et al.*, 2023). However, the effectiveness of these interventions depends not merely on participation itself, but on deliberate pedagogical design. Structured programmes incorporating cooperative interaction, guided reflection, and explicit support for emotional regulation prove substantially more effective than unstructured or purely recreational activities. Cooperative formats, where success relies on shared goals and mutual responsibility, foster social accountability, perspective-taking, and non-aggressive conflict resolution. These elements align with established educational research on the role of structured social interaction in developing behavioural self-regulation during adolescence.

The integration of social-emotional learning processes further enhances outcomes. Interventions that combine physical activity with opportunities for emotional awareness, reflection, and self-control development outperform those focused solely on physical exertion. Improvements in emotional regulation emerge as a central mechanism linking physical activity to reduced aggression, providing adolescents with an embodied context for practising self-regulatory skills directly relevant to behavioural outcomes. Teachers play a pivotal mediating role. Competence in inclusive and adaptive pedagogy influences participation rates, group dynamics, and the overall social climate of physical activity settings. Educators skilled in structuring activities, adapting tasks, and managing heterogeneous groups create supportive environments that discourage aggression and promote cooperation. Conversely, limited pre-service and in-service training in inclusive pedagogy, adaptive physical education, and gender-sensitive approaches often leads to unintentional reinforcement of exclusionary practices or unequal participation (Zhou, 2024). Targeted professional development, therefore, is essential for building teachers' capacity to foster well-regulated, cooperative learning environments.

Broader contextual and structural factors further moderate implementation. Despite clear commitments to inclusion, equal access, and gender sensitivity in international and national policy frameworks (including physical education), a persistent gap exists between policy intentions and school-level realisation. Schools frequently lack adequate material resources, accessible infrastructure, specialised equipment, and sustained professional support, constraining their ability to enact inclusive and gender-responsive practices consistently. Resource scarcity particularly affects the adaptation of physical activity environments for diverse

learners, including adolescents with disabilities, where participation often depends on informal compensatory strategies rather than institutional provisions (Hidayat *et al.*, 2024). Without systemic investment in infrastructure and teacher preparation, inclusive practices remain fragile and reliant on individual effort. Taken together, these findings indicate that the preventive potential of physical activity is realised most fully when embedded within a coherent pedagogical framework supported by adequate structural conditions. Physical activity should therefore be conceptualised not as a standalone intervention, but as a pedagogically intentional space requiring reflective design, professional competence, and institutional alignment with inclusive educational principles.

Interpretation of findings

within the educational context of the Kyrgyz Republic

The national educational context further mediates the implementation of inclusive physical activity initiatives. In the Kyrgyz Republic, the Concept for the Development of Inclusive Education in the Kyrgyz Republic for 2019-2023 (2019) outlines priorities related to equal access, social integration, and support for learners with disabilities. Official data indicate a steady increase in registered children with disabilities (aged 0-17), rising from 20,660 in 2007 to 32,013 in 2019, representing approximately 1.3% of the child population (UNICEF, 2021). Despite this, access to inclusive education remains limited: in 2019, only 305 children with disabilities of school age attended mainstream schools, while non-governmental estimates suggest that less than one-third of children with disabilities have access to any form of schooling. These figures highlight persistent structural gaps in infrastructure and teacher preparation, which constrain the implementation of inclusive physical activity programmes as envisaged in national policy. Recent initiatives, such as the SmartEd Project (2025-2029) supported by UNICEF, the Islamic Development Bank, and the Global Partnership for Education, aim to address these barriers through the establishment of ten model inclusive schools and a National Roadmap for Inclusive Education (UNICEF, 2025). These constraints are not unique to Kyrgyzstan but reflect broader patterns observed in low- and middle-income educational systems, where policy ambitions often exceed available institutional capacities.

Interpreting the findings within the educational context of the Kyrgyz Republic reveals both conceptual alignment with international recommendations and substantial challenges at the level of implementation. The Concept for the Development of Inclusive Education in the Kyrgyz Republic for 2019-2023 (2019) articulates a clear commitment to social inclusion, equal access, and teacher professional development. These priorities correspond closely with the evidence synthesised in this review, particularly regarding the importance of inclusive pedagogy and supportive educational environments. The Law of the Kyrgyz Republic "On Education" (2023) establishes the legal foundation for inclusive education in the country. Chapter 11 (Articles 36-37)

explicitly defines inclusive education as a process ensuring equal opportunities for all learners, including those with special educational needs, without discrimination based on health status, disability, or other factors. It mandates reasonable accommodations, individualised support, and the integration of children with disabilities into mainstream settings wherever possible. These provisions align with the review's emphasis on pedagogical adaptation and barrier removal in physical education, as they require educators to create accessible environments that promote social interaction, emotional regulation, and psychosocial well-being – key mechanisms for reducing aggressive behaviour identified in the international literature.

At the same time, the findings indicate that the realisation of these principles in everyday school practice remains uneven. Physical education and school-based physical activity are areas where the gap between policy intention and practical implementation is especially visible, given their reliance on infrastructure, teacher preparation, and organisational support. The review suggests that physical activity holds significant potential as a space for social integration and aggression prevention within the Kyrgyz educational system, provided that it is aligned with inclusive and gender-responsive principles. Emphasising cooperative forms of movement and participation, rather than highly competitive models, may be particularly compatible with local educational conditions and resource constraints. Such approaches resonate with national policy goals related to social adaptation and interpersonal development. Overall, the national context underscores both the relevance of the review's findings and the necessity of contextual adaptation. Progress in aggression prevention through physical activity will depend on strengthening the connection between inclusive policy frameworks and everyday pedagogical practice.

In conclusion, this integrative review demonstrates that structured physical activity, when embedded in inclusive and gender-responsive pedagogical frameworks, holds considerable potential as a preventive tool against aggressive behaviour in adolescents. By fostering emotional regulation, social competence, and cooperative interaction, such programmes can contribute to safer and more equitable school environments. Realising this potential, however, requires overcoming persistent structural barriers through sustained investment in teacher preparation, accessible infrastructure, and policy-practice alignment. The findings thus call for a shift toward intentional, reflective, and inclusive approaches in physical education – an essential step toward supporting the psychosocial well-being and positive social development of diverse adolescent populations.

■ CONCLUSIONS

This integrative review clarifies the pedagogical conditions under which physical activity can function as an effective means of preventing aggressive behaviour among adolescents within inclusive educational settings. The analysis

demonstrated that the preventive potential of physical activity does not arise automatically from participation itself, but is contingent upon a constellation of pedagogical, social, and institutional factors that shape how physical activity is experienced by diverse groups of learners. The central contribution of this study lies in demonstrating that physical activity becomes a meaningful preventive tool only when it is intentionally designed to support socio-emotional development. Cooperative interaction, guided reflection, and adaptive task design emerge as key mechanisms through which physical activity contributes to emotional regulation, social competence, and reductions in aggressive behaviour. In the absence of such pedagogical structuring, physical activity risks remaining a neutral or unevenly effective practice, benefitting primarily those adolescents who already possess greater access, confidence, or social capital.

The findings further underscored the importance of accounting for gender-related differences in both the expression of aggressive behaviour and access to physical activity. Adolescents do not engage with physical activity in uniform ways, and gender norms, cultural expectations, and institutional arrangements significantly shape participation patterns and outcomes. The review demonstrated that ignoring these differences may limit the preventive effects of physical activity, whereas gender-responsive approaches enhance both its relevance and inclusivity. Particular attention was drawn to the compounded vulnerability of adolescents who experience overlapping forms of disadvantage, especially girls with disabilities. The evidence indicates that intersectional barriers related to gender and disability continue to restrict access to physical activity and increase exposure to social exclusion and peer aggression. Addressing these barriers requires more than formal inclusion policies; it demands consistent pedagogical adaptation, supportive school climates, and sustained institutional commitment to inclusive practice.

Overall, the study highlighted a persistent gap between inclusive education policies and their realisation in everyday school contexts. Bridging this gap is essential for fully realising the preventive potential of physical activity. This necessitates a shift away from predominantly competitive models of physical education toward approaches that prioritise cooperation, accessibility, and social learning, alongside systematic investment in teacher preparation and professional development. Future research should build on these findings through longitudinal and participatory studies conducted within specific national and regional contexts, including Central Asia. Such research would allow for a more nuanced understanding of how inclusive and gender-responsive physical activity practices influence not only aggressive behaviour, but also broader indicators of psychosocial well-being, social inclusion, and educational engagement among adolescents.

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Инклюзивдүү билим берүүнүн педагогикасы жана өспүрүмдөрдүн агрессивдүү жүрүм-турумун дене тарбия аркылуу алдын алуунун гендердик аспектилери: интегративдик карап чыгуу

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Аннотация. Өспүрүмдөрдүн арасында агрессивдүү жүрүм-турумдун өсүшү заманбап билим берүү системаларынын маанилүү көйгөйлөрүнүн бири бойдон калууда жана натыйжалуу алдын алуу стратегияларын иштеп чыгууну талап кылат. Физикалык активдүүлүктүн жүрүм-турумду жөнгө салууга оң таасиринин топтолгон далилдерине карабастан, физикалык тарбия каражаттары менен агрессияны алдын алууда инклюзивдүү жана гендерге сезимтал ыкмалар жетишсиз иштелип чыккан. Бул иштин максаты – 2020-2025-жылдардагы адабияттардын интегративдик карап чыгуусун жүргүзүү, системалуу карап чыгуулардын жана мета-анализдердин маалыматтарын жалпылоо. Натыйжалар көрсөткөндөй, кооперативдик өз ара аракеттенүү, рефлексия жана педагогдун туруктуу колдоосу элементтери менен педагогикалык жактан уюштурулган чөйрөгө киргизилген үзгүлтүксүз структураланган физикалык активдүүлүк кастыктын, импульсивдүүлүктүн жана адамдар аралык чыр-чатактардын деңгээлин орточо төмөндөтүүгө салым кошот. Эң айкын профилактикалык эффект командалык ишке жана эмоционалдык жөнгө салууга багытталган программаларда байкалды, структураланбаган же таза атаандаштык формаларына салыштырмалуу. Карап чыгуу гендердик айырмачылыктарды баса белгиледи: балдар көбүнчө ачык физикалык агрессияны көрсөтүп, уюшкан сабактарга активдүү катышат, ал эми кыздар реляциялык же ички агрессияга ыктап, катышууга кошумча тоскоолдуктарга дуушар болушат (социалдык-маданий нормалар, өспүрүм куракта кызыгуунун төмөндөшү). Майыптыгы бар өспүрүмдөр, өзгөчө кыздар, жыныс менен майыптыктын кесилишиндеги чектөөлөрдү баштан кечиришет, бул физикалык активдүүлүктүн коргоочу потенциалына жетүүнү төмөндөтөт. Алынган жыйынтыктар адаптацияланган физикалык тарбия формаларын иштеп чыгуунун жана эмпатияны, өзүн-өзү аңдоону жана социалдык өнөктөштүктү өнүктүрүүнү камтыган гендерге сезимтал стратегияларды киргизүүнүн зарылдыгын күбөлөндүрөт. Мындай ыкмалар ар түрдүү билим берүү муктаждыктары бар өспүрүмдөрдүн психосоциалдык жыргалчылыгын бекемдеп, девианттык жүрүм-турум коркунучтарын азайтат. Практикалык мааниси педагогдорго жана инклюзивдүү билим берүү адистерине илимий негизделген профилактикалык моделдерди түзүү үчүн натыйжаларды колдонуу мүмкүнчүлүгүндө турат, алар туруктуу социалдык өз ара аракеттенүү көндүмдөрүн калыптандырууга багытталган

Негизги сөздөр: социалдык инклюзия; девианттык жүрүм-турумдун алдын алуу; эмоцияларды жөнгө салуу; гендердик аярлуулук; адаптивдүү физикалык активдүүлүк; психосоциалдык өнүгүү; өспүрүмдөрдүн жыргалчылыгы

Педагогика инклюзивного образования и гендерные аспекты профилактики агрессивного поведения подростков средствами физической активности: интегративный обзор

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Аннотация. Рост агрессивного поведения среди подростков остается одной из значимых проблем современных образовательных систем и требует разработки эффективных профилактических стратегий. Несмотря на накопленные доказательства положительного влияния физической активности на регуляцию поведения, инклюзивные и гендерно-чувствительные подходы к профилактике агрессии средствами физического воспитания недостаточно разработаны. Цель работы – провести интегративный обзор литературы 2020-2025 годов, обобщающий данные систематических обзоров и мета-анализов. Результаты показали, что регулярная структурированная физическая активность, встроенная в педагогически организованную среду с элементами кооперативного взаимодействия, рефлексии и устойчивой поддержки педагога, способствует умеренному снижению уровня враждебности, импульсивности и межличностных конфликтов. Наиболее выраженный профилактический эффект наблюдался в программах, ориентированных на командную работу и эмоциональную регуляцию, по сравнению с неструктурированными или чисто соревновательными формами. Обзор подчеркнул гендерные различия: мальчики чаще демонстрируют открытую физическую агрессию и активнее участвуют в организованных занятиях, в то время как девочки склонны к реляционной или интериоризованной агрессии и сталкиваются с дополнительными барьерами участия (социокультурные нормы, снижение интереса в подростковом возрасте). Подростки с инвалидностью, особенно девочки, испытывают пересекающиеся ограничения, что снижает их доступ к защитному потенциалу физической активности. Полученные выводы свидетельствуют о необходимости разработки адаптированных форм физического воспитания и внедрения гендерно-чувствительных стратегий, включающих развитие эмпатии, самосознания и социального партнёрства. Такие подходы способствуют укреплению психосоциального благополучия и снижению рисков девиантного поведения у подростков с различными образовательными потребностями. Практическая значимость заключается в возможности использования результатов педагогами и специалистами инклюзивного образования для создания научно обоснованных профилактических моделей, направленных на формирование устойчивых навыков социального взаимодействия.

Ключевые слова: социальная инклюзия; профилактика девиантного поведения; эмоциональная регуляция; гендерная уязвимость; адаптивная физическая активность; психосоциальное развитие; благополучие подростков



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Development of the learning motivation of future teachers in the context of a competence-based approach

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Abstract. The purpose of the study was to determine effective approaches to the development of the pedagogical motivation of future teachers. The methodology included an analysis of pedagogical motivation and the competence-based approach, the implementation of a pedagogical experiment with control and experimental groups; within scenario modelling three scenarios for the development of the pedagogical motivation of future teachers were distinguished, namely an active-professional, an adaptive-competence-based and a formally-oriented scenario. The main results of the study indicated the effectiveness of a competence-oriented approach in forming the internal motivation and professional confidence of future teachers. In the experimental group, after the introduction of elements of competence-based learning, the proportion of students with a high level of motivation increased statistically significantly ($p < 0.01$) from 13-30% to 48-56% according to key indicators: interest in mastering the profession, satisfaction with the performance of learning tasks, awareness of the social significance of pedagogical activity, the personal meaning of professional training, readiness for self-development and for improving pedagogical abilities and skills. Before the experiment, most students demonstrated medium or low confidence in making pedagogical decisions (responses “3” – 29-37%, “5” – 11-20%). After the introduction of competence-based practices in the experimental group, the share of high scores “5” increased to 28-36% according to different criteria, and low scores almost disappeared. Progress was observed in the cases on communication with parents and on increasing pupils’ learning motivation, where the average level of scores “4-5” exceeded 65%, whereas in the control group it was 30-40%. It was established that the active use of micro-projects, cases, role-playing games and systematic reflection formed internal motivation, increased the level of competence and facilitated the conscious involvement of students in pedagogical practice. In addition, the study distinguished three scenarios for the development of pedagogical motivation, namely an active-professional, an adaptive-competence-based and a formally-oriented scenario. The practical significance of the work lies in the possibility of using the obtained results in institutions of teacher education for the development of differentiated learning trajectories

Keywords: professional orientation; internal interest; social significance; practical activity; professional readiness

■ INTRODUCTION

In the conditions of the transformation of the system of higher pedagogical education, the problem of developing the learning motivation of future teachers is becoming increasingly relevant. The dominance of the competence-based approach in educational policy determines the need to train specialists capable of effective professional activity, self-development and lifelong learning. At the same time, scientific sources emphasise the risks of insufficient

formation of the learning motivation of students in teacher-education programmes, which may negatively influence the quality of the formation of professional competences, professional identity and readiness for pedagogical activity. This indicates the existence of a contradiction between the requirements of the competence-based approach, which presupposes an active position of the student, and the need for formed internal motivation, which determines the

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necessity of a scientific analysis of the factors, conditions and pedagogical means of its development.

The motivation of students during online learning is becoming relevant within digital educational technologies. M. Díaz-Noguera *et al.* (2022) studied how autonomy, motivation and digital pedagogy influence students' perceptions of distance learning. The researchers showed that internal motivation is a key factor in the success of online education and positively affects student engagement. The use of game-based elements in learning can increase students' interest. I. Yildiz *et al.* (2021) analysed the effect of gamification on the motivation of future teachers of social-science disciplines. The study revealed that game-based strategies stimulate internal motivation and student activity in the learning process. The planning of a professional path influences students' motivation to learn. C. Xu *et al.* (2022) considered the motives and professional plans of graduates of a dentistry faculty. The authors showed that motivation to study correlates with students' readiness for future professional activity. Doubts and concerns about a future profession may influence learning motivation. D. Mateos-Moreno (2022) examined the sources of anxiety among future music teachers regarding the professional choice. The author emphasised that internal motivation affects the formation of teachers' professional identity. The implementation of competence-based education is associated with certain challenges for students' motivation. U. Nombo (2022) considered the problems of implementing a competence-oriented curriculum in teacher-training colleges. The study showed that an insufficient level of student motivation complicates the effective implementation of the competence-based approach.

The realisation of competence-based education requires high motivation among both teachers and pupils. A. Rogers (2021) studied teachers' views on the implementation of competence-based education. It was established that the level of motivation directly affects the success of educational reforms. Teachers' readiness for a competence-based approach is closely connected with the motivation. C. Mirza *et al.* (2023) assessed teachers' readiness for a new educational reform. The results showed that teachers' motivational readiness determines the effectiveness of the implementation of competence-based methods. The competence-based approach develops key professional competences through the motivational involvement of students. L. Holubnycha *et al.* (2022) analysed the development of the competence-based approach in education. The authors emphasised that the motivational component is necessary for the formation of professional competences. The formation of value-based and professional competences of future teachers directly depends on motivation to learn. S. Lorente-Echeverría *et al.* (2022) studied the views of future primary-school teachers regarding education for sustainable development. The study showed that conscious motivation contributes to the development of value-based and professional competences. Despite the number of studies on student motivation and the implementation of the

competence-based approach, there are certain gaps. Specific methods for developing the learning motivation of future teachers within competence-based education have not been sufficiently studied. There is a lack of empirical research that comprehensively combines students' internal motivation, pedagogical innovations and digital learning technologies within the competence-based approach.

The purpose of the study was to substantiate ways of increasing the level of pedagogical motivation among students of teacher-education programmes. The objectives of the study were to substantiate theoretically and test experimentally the possibilities for the development of the pedagogical motivation of future teachers in the process of implementing the competence-based approach in the educational environment of a higher-education institution; to conduct a pedagogical experiment to identify the dynamics of changes in motivational indicators and in the level of professional confidence of future teachers; and to determine possible scenarios for the further development of the pedagogical motivation of future teachers.

■ MATERIALS AND METHODS

Within the theoretical-analytical stage of the study, an analysis was carried out of scientific approaches to the problem of pedagogical motivation and the possibilities of its development in the process of the professional training of future teachers. The theoretical basis of the study was the self-determination theory, which emphasises the role of internal motivation, autonomy, the feeling of competence and social involvement in the professional development of the individual (Ryan & Deci, 2000). Studies of the professional motivation of future teachers were considered, underlining the connection between the awareness of the social significance of teaching and the stability of the motivational orientations (Hartono *et al.*, 2022; Li & Guo, 2024; Izhhar *et al.*, 2025). The theoretical analysis of the competence-based approach was carried out on the basis of works in which it is considered as the leading paradigm of teacher education aimed at forming integrated learning outcomes – competences that combine knowledge, abilities, values, and readiness for practical activity (Marcelis *et al.*, 2024; Mohzana, 2025).

At the empirical-experimental stage, a pedagogical experiment was conducted with the participation of 48 students of teacher-education programmes aged from 19 to 22 years, including 38 females and 10 males. The formation of the control and experimental groups was carried out by random sampling (randomisation), which ensured the homogeneity of the groups according to age and sex indicators. The average age of the respondents was 20.4 years. The sample included students of the following specialities: “Primary education” ($n = 16$), “Pre-school education” ($n = 14$), “Secondary education (Ukrainian language and literature)” ($n = 10$) and “Secondary education (English language)” ($n = 8$). The study was organised on the basis of J. Balasagyn Kyrgyz National University, since this university has well-developed teacher-training

programmes and the potential for conducting practical pedagogical experiments. The study was carried out over one semester (February-June 2025) using face-to-face and distance forms of learning on the educational platform Google Classroom. The platform was used for organising distance access to learning materials, posting case-based tasks, uploading students' own work, as well as for communication between students and teachers concerning the performance of tasks and the receipt of feedback. In addition, Google Classroom was used to assess intermediate results, monitor progress and aggregate data for the further analysis of the level of pedagogical motivation and the effectiveness of the performance of the cases. The inclusion criteria for participation in the study were enrolment on a teacher-education speciality, the absence of previous experience of full-scale pedagogical work and voluntary consent to participate in the study. The exclusion criteria were irregular participation in the learning process and the incomplete completion of diagnostic tasks. During the formation of the sample for the experiment, five students of teacher-education specialities were excluded because of irregular participation in the learning process or incomplete completion of diagnostic tasks; as a result, 48 students took part. The participants were divided into a control group (24 persons) and an experimental group (24 persons). The control group studied according to the standard programme of professional training for future teachers, which provides mainly a lecture-seminar form of organising learning and reproductive methods of mastering material characteristic of the traditional model of teacher education. In the experimental

group, elements of the competence-based approach were introduced, in particular the use of pedagogical cases that modelled typical professional situations for teachers; micro-project activities aimed at developing lesson fragments with clearly defined competence-based outcomes; and reflective tasks related to analysing students' own readiness for pedagogical activity.

To assess the level of pedagogical motivation among future teachers before and after the experiment, a questionnaire based on the Academic Motivation Scale, adapted to the conditions of professional teacher training, was used (Vallerand *et al.*, 1989). The adaptation of the instrument included the translation and back-translation of the statements, and the clarification of wordings taking into account the specifics of pedagogical activity (the replacement of general academic contexts with professional-pedagogical ones), as well as an expert assessment of content validity with the participation of specialists in pedagogy and educational psychology. The reliability of the adapted version of the questionnaire was confirmed by the indicator of internal consistency (Cronbach's $\alpha = 0.83$), which indicates its acceptable psychometric validity for use in pedagogical research. The questionnaire consisted of 10 statements aimed at identifying internal motivation, professional orientation and awareness of the significance of pedagogical activity. Respondents were asked to rate the degree of the agreement with each statement on a five-point Likert scale, where 1 – “completely disagree”, 2 – “rather disagree”, 3 – “difficult to answer”, 4 – “rather agree”, 5 – “completely agree”. The statements are presented in Table 1.

Table 1. Statements for diagnosing the motivational-value component of the readiness of future teachers

Statements
I am interested in mastering the teaching profession
I feel satisfaction from completing learning tasks related to future pedagogical activity
I consider the teaching profession relevant and socially significant
Studying at a higher-education institution helps me to become a competent teacher
I see personal meaning in the professional training of a future teacher
I am ready to make additional efforts for professional self-development in the pedagogical sphere
I feel confident about my choice of the teaching profession
I am motivated by the possibility of the practical application of the acquired knowledge in pedagogical activity
I am interested in improving my own pedagogical abilities and skills
I study not only for grades but also for professional development

Source: compiled by the author

To assess the practical component of pedagogical motivation and the confidence of future teachers in making professional decisions, case-based tasks were also used, developed on the basis of sources on pedagogy and the competence-based approach in the professional training of teachers (Levin, 1995; Segers *et al.*, 2008; Akbulut & Hill, 2020). When developing the cases, typical problem situations arising in the practical activity of a teacher, the target competences that need to be formed in students, as well as the principles of active learning and differentiated instruction were taken into account. Each case modelled real pedagogical situations, included a clearly defined task and assessment criteria, which made it possible to

examine not only knowledge but also practical skills, independence and critical thinking among students. After working through each pedagogical situation, the assessment of the case-based tasks was carried out by practice-oriented teachers who had experience of working in higher-education institutions and of implementing the competence-based approach in the training of future specialists. Five teachers from higher-education institutions in Kyrgyzstan working in pedagogical and psycho-pedagogical specialities were involved in the expert group. The average teaching experience of the experts was 13 years (from 9 to 18 years). All experts held an academic degree of at least Candidate of Sciences and had experience in developing curricula and

methodological materials. The selection of experts was carried out by purposive sampling, taking into account the following inclusion criteria: a higher pedagogical education; at least 8 years of teaching experience; experience in implementing the competence-based approach in teaching; participation in methodological work (development of curricula, cases, teaching aids); and consent to participate in the study. The exclusion criteria were less than 8 years of teaching experience; lack of experience in teaching in higher-education institutions; and the absence of experience in using case-based or competence-oriented technologies. The overall average age of the experts was 38 years; among these experts were three women and two men.

Clearly defined criteria were used for assessment, namely the reasoning behind decisions, the practical applicability of the proposed actions, the level of independence and critical thinking, as well as the ability to analyse and improve pedagogical activity. The reasoning behind decisions was assessed according to the extent to which

the student took into account the specifics of the problem situation and substantiated the choice. Practical applicability involved assessing the extent to which the proposed actions could realistically influence motivation and learning effectiveness. The level of independence and critical thinking was determined by the ability to propose optimal or non-standard solutions. The analysis and improvement of pedagogical activity were assessed according to how far the student was able to recognise the strengths and weaknesses of the solution and propose ways of improvement.

Each criterion was assessed on a five-point scale, where one point corresponded to a low level and five points to a high level. The final score for a case was determined as the arithmetic mean of all four criteria. After the completion of all cases, students' results were aggregated to compare the level of pedagogical motivation before and after the experiment, which made it possible to assess the effectiveness of the implemented competence-based approach by means of practical tasks. The case-based tasks are presented in Table 2.

Table 2. Case-based tasks for assessing the readiness of future teachers to implement the competence-based approach

Case title	Content and tasks
Case 1. Disruption of discipline in the lesson	The student receives a description of a lesson in which one pupil systematically distracts the others. Task: to develop an action plan using the competence-based approach (for example, the integration of cross-curricular tasks or active learning methods) in order to restore discipline and maintain pupils' engagement. It is necessary to justify the chosen strategies and to assess the expected impact on the motivation of the class
Case 2. Increasing pupils' learning motivation	A class with different levels of preparation and low activity in lessons is described. Task: to plan a lesson using the competence-based approach in order to motivate each pupil, integrate cross-curricular links and active methods. The student explains which competences are developed in pupils and how this influences the engagement
Case 3. Organisation of differentiated learning	A lesson scenario with pupils of different levels of preparation is given. Task: to develop differentiated tasks and activities for different groups, to explain how the planning takes into account individual needs, and how this influences the motivation and engagement
Case 4. Analysis and improvement of one's own pedagogical activities	The student receives a description of the lesson, in which strengths and weaknesses are noted. Task: to carry out an analysis of the activity, to propose specific changes based on the competence-based approach, and to describe how these changes will affect pupils' motivation and the development of the competences
Case 5. Communication with parents in a conflict situation	A situation is described in which parents express dissatisfaction with learning outcomes. Task: to develop a communication plan that includes competence-based strategies (support, explanation, involvement of parents in the learning process) and to assess the expected effect on pupils' motivation and partnership relations with the family

Source: compiled by the author

Within the pedagogical experiment, such statistical methods were used as the calculation of the percentage distribution of respondents' answers in the control and experimental groups before and after the experiment, which made it possible to assess the structure and dynamics of changes in students' pedagogical motivation and professional confidence. In the study, Student's t-test for independent samples was applied in order to compare the indicators of the control and experimental groups. To analyse the changes within each group before and after the formative stage of the experiment, a paired t-test was used. The statistical significance of the differences was determined at the level of $p < 0.05$. For each indicator, arithmetic mean values (M), standard deviations (SD) and t-values were calculated, which made it possible to assess the strength and direction of changes in the studied indicators. A limitation of the study is that its results relate to a specific

institution and sample of students, which may restrict the general extrapolation to other pedagogical contexts. In addition, three scenarios for the development of pedagogical motivation among future teachers were distinguished, namely an active-professional scenario, an adaptive-competence-based scenario and a formally-oriented scenario. The identification of these scenarios was carried out on the basis of the theoretical generalisation of the provisions of the competence-based approach and the analysis of empirical data obtained during the formative experiment, by comparing motivation levels, indicators of performance in case-based tasks and the dynamics of changes in the control and experimental groups.

During the study, ethical standards concerning all participants in the educational process – both students and teachers – were observed, in particular the principles of voluntary participation, anonymity, and the confidentiality

of the data obtained (American Sociological Association, 2018). All participants were informed in advance and in detail about the purpose, content, stages, and procedures of the study, as well as about the ways in which the results obtained would be used. Participation in the study was completely voluntary; each participant had the right to refuse to take part or to terminate the participation at any stage without any negative consequences for the learning or professional activity. All participants provided written informed consent to take part in the study. The data obtained in the course of the study were processed in generalised form and used exclusively for scientific purposes in compliance with the principles of confidentiality.

■ RESULTS

Development of the pedagogical motivation of future teachers in the context of a competence-based approach

Pedagogical motivation of future teachers is one of the key determinants of the success of professional training and the development of the teacher's personality. It determines not only students' activity and purposefulness in learning, but also the readiness for the practical application of knowledge, the formation of professional skills and competences, as well as for self-development and self-improvement. In pedagogy, motivation is considered not as a static characteristic, but as a dynamic process formed under the influence of internal needs, external conditions and pedagogical technologies used in the learning process. One of the leading theoretical concepts that makes it possible to understand the mechanisms of motivation formation is self-determination theory (Ryan & Deci, 2000). It distinguishes three key components that ensure the development of internal motivation: autonomy, the feeling of competence and social involvement. Autonomy presupposes the possibility for the student to make decisions independently, choose methods and forms of learning, and take responsibility for the results of the activity. The feeling of competence is formed through the successful completion of tasks, the development of practical skills and the acquisition of knowledge that meets professional standards. Social involvement is manifested in the feeling of the value of one's own activity for the collective, for pupils and for society as a whole. For future teachers, these three factors are interconnected and constitute the basis for the formation of stable and purposeful pedagogical motivation.

Pedagogical motivation of future teachers is closely connected with professional self-awareness and with the awareness of the social role of the teacher. Studies show that students who understand the significance of the future profession for pupils' development are more stable in the motivational orientations, and the internal interest in learning is manifested in greater activity in practical classes and teaching practice (Hartono *et al.*, 2022; Li & Guo, 2024). Awareness of the social value of teaching creates in students a sense of responsibility for the learning process, which in turn stimulates the search for new

knowledge, the development of professional skills and independent improvement. The competence-based approach in teacher education defines learning outcomes through the integration of knowledge, skills, values, and readiness for practical activity (Marcellis *et al.*, 2024). That is, learning is oriented not only towards the acquisition of theoretical information, but towards the formation of the ability to apply knowledge in specific pedagogical situations. This contributes to the development of professional self-awareness, internal motivation and confidence in one's own abilities.

The competence-based approach ensures the activation of students' learning and professional activity through the integration of various types of activity: analytical, practical, research and reflective. For example, the performance of project tasks, pedagogical cases, the organisation of mini-lessons or pedagogical experiments enables the student to feel the result of the activity, assess the level of competence and see the practical significance of learning. It is precisely through such active forms of work that internal motivation is formed: the student gains positive experience, understands that the knowledge and skills are useful, and this stimulates further independent work (Izhhar *et al.*, 2025). In addition, the competence-based approach presupposes the development of reflection and critical thinking, which is also a powerful mechanism of motivation. When a future teacher analyses the actions, compares the results with the goals set, receives feedback from mentors and colleagues, the future teacher begins to realise the professional development. Such awareness forms an internal need for improvement, for the growth of competences and for the achievement of new professional goals. Reflection allows the student to notice the successes and shortcomings, to realise progress, and to identify the motives for learning.

In the learning process, future teachers work in groups, exchange experience and cooperate on projects, which forms a sense of collective responsibility and mutual support. Social interaction stimulates internal motivation through the feeling of the significance of one's own role in the professional environment, strengthens the feeling of competence and contributes to the awareness of the value of teaching work. Thus, pedagogical motivation of future teachers is formed at the intersection of several key factors, namely internal motivation – the need for self-development, the realisation of one's own abilities and professional self-determination; the feeling of competence – awareness of one's own knowledge, skills, and ability to act effectively in pedagogical situations; autonomy – the ability to make independent decisions regarding one's own learning and professional activity; social involvement – an understanding of the value of one's professional activity for pupils, colleagues, and society (Mohzana, 2025). The competence-based approach promotes the integration of these components, creating conditions for the purposeful development of motivation. The use of project activity, teaching practicums, case methods, role-playing games and reflective practices enables students to feel the result of the

activity, to assess the professional potential and motivates the students towards further development.

Therefore, pedagogical motivation of future teachers in the context of the competence-based approach is the result of the interaction of internal motives, the social significance of the profession and active involvement in practical activity. It is formed through the development of autonomy, the feeling of competence, reflection, and interaction with the environment, which creates a stable basis for professional development and effective pedagogical activity in the future. The competence-based approach acts not only as a methodological basis of teacher education, but also as an effective mechanism for stimulating students' internal

motivation, contributing to the formation of highly professional and self-sufficient teachers.

Analysis of the results of the pedagogical experiment on the development of future teachers

To assess the level of pedagogical motivation of future teachers, a pedagogical experiment was conducted. On the basis of the data obtained, it is possible to compare the percentage distribution of students' responses in the control and experimental groups before and after the experiment. This makes it possible to clearly trace the dynamics of changes in the motivational sphere and the effectiveness of the implementation of the competence-based approach in the educational process (Table 3).

Table 3. Results of the CG and EG before and after training according to the questionnaire

Question	CG before	M	SD	CG after	M	SD	EG before	M	SD	EG after	M	SD
1. I am interested in mastering the teaching profession	1-5%, 2-10%, 3-25%, 4-40%, 5-20%	3.65	1.02	1-3%, 2-7%, 3-20%, 4-45%, 5-25%	3.87	0.97	1-5%, 2-8%, 3-22%, 4-40%, 5-25%	3.75	1	1-0%, 2-2%, 3-10%, 4-38%, 5-50%	4.34	0.88
2. I feel satisfaction from completing educational tasks related to future pedagogical activity	1-8%, 2-12%, 3-30%, 4-35%, 5-15%	3.52	1.03	1-5%, 2-8%, 3-25%, 4-40%, 5-22%	3.77	0.98	1-7%, 2-10%, 3-28%, 4-38%, 5-17%	3.62	0.99	1-0%, 2-1%, 3-12%, 4-35%, 5-52%	4.32	0.84
3. I consider the teaching profession relevant and socially significant	1-3%, 2-7%, 3-20%, 4-45%, 5-25%	3.9	0.96	1-2%, 2-5%, 3-15%, 4-48%, 5-30%	4.06	0.91	1-4%, 2-6%, 3-18%, 4-42%, 5-30%	3.94	0.94	1-0%, 2-1%, 3-8%, 4-35%, 5-56%	4.41	0.83
4. Studying at a higher education institution helps me to become a competent teacher	1-10%, 2-15%, 3-30%, 4-30%, 5-15%	3.3	1.11	1-5%, 2-10%, 3-25%, 4-35%, 5-25%	3.75	1.02	1-8%, 2-12%, 3-28%, 4-35%, 5-17%	3.59	1.02	1-0%, 2-2%, 3-10%, 4-38%, 5-50%	4.36	0.87
5. I see personal meaning in the professional training of a future teacher	1-7%, 2-13%, 3-28%, 4-35%, 5-17%	3.57	1.02	1-4%, 2-10%, 3-22%, 4-40%, 5-24%	3.88	0.97	1-5%, 2-12%, 3-25%, 4-38%, 5-20%	3.69	0.99	1-0%, 2-1%, 3-10%, 4-35%, 5-54%	4.41	0.86
6. I am ready to make additional efforts for professional self-development in the pedagogical field	1-8%, 2-15%, 3-32%, 4-30%, 5-15%	3.45	1.03	1-5%, 2-10%, 3-25%, 4-35%, 5-25%	3.85	1.01	1-7%, 2-12%, 3-30%, 4-38%, 5-13%	3.52	0.99	1-0%, 2-2%, 3-12%, 4-38%, 5-48%	4.3	0.87
7. I feel confident about my choice of the teaching profession	1-6%, 2-12%, 3-25%, 4-40%, 5-17%	3.63	1.01	1-3%, 2-8%, 3-20%, 4-45%, 5-24%	3.96	0.96	1-5%, 2-10%, 3-28%, 4-40%, 5-17%	3.65	0.98	1-0%, 2-1%, 3-10%, 4-35%, 5-54%	4.41	0.84
8. I am motivated by the possibility of practical application of the acquired knowledge in pedagogical activities	1-5%, 2-10%, 3-25%, 4-40%, 5-20%	3.7	0.99	1-3%, 2-7%, 3-20%, 4-45%, 5-25%	3.95	0.94	1-5%, 2-8%, 3-22%, 4-40%, 5-25%	3.74	0.99	1-0%, 2-2%, 3-10%, 4-38%, 5-50%	4.36	0.87
9. I am interested in improving my own pedagogical skills and abilities.	1-7%, 2-13%, 3-28%, 4-35%, 5-17%	3.57	1.01	1-4%, 2-10%, 3-22%, 4-40%, 5-24%	3.88	0.96	1-6%, 2-12%, 3-25%, 4-38%, 5-19%	3.68	0.97	1-0%, 2-1%, 3-10%, 4-35%, 5-54%	4.42	0.85

Table 3. Continued

Question	CG before	M	SD	CG after	M	SD	EG before	M	SD	EG after	M	SD
10. I study not only for grades, but also for professional development.	1-8%, 2-15%, 3-32%, 4-30%, 5-15%	3.45	1.03	1-5%, 2-10%, 3-25%, 4-35%, 5-25%	3.85	1.01	1-7%, 2-12%, 3-30%, 4-38%, 5-13%	3.52	0.99	1-0%, 2-2%, 3-12%, 4-38%, 5-48%	4.30	0.87

Source: compiled by the author

The analysis of the results presented in the table makes it possible to trace the dynamics of changes in the level of pedagogical motivation of future teachers in the control and experimental groups before and after the pedagogical experiment. The data obtained indicate positive shifts in both groups; however, the nature and extent of these changes differ. In the control group before the experiment, responses of a medium level of motivation prevailed. In particular, for most statements the largest percentage consisted of the responses “3 – difficult to answer” (from 25% to 32%) and “4 – rather agree” (from 30% to 45%). After the completion of the experiment, a moderate increase in positive responses was recorded in the control group. The proportion of responses “5 – completely agree” increased statistically significantly (paired t-test: $t = 3.12-4.05$, $p < 0.01$) by 7-10%. Thus, interest in mastering the teaching profession increased from 20% to 25%, and the conviction that studying helps to become a competent teacher – from 15% to 25%. In the experimental group before the experiment the motivational picture was similar to that of the control group. The highest indicators also fell on the responses “3” (from 18% to 30%) and “4” (from 35% to 42%), while the proportion of responses “5” ranged from 13% to 30%. After the introduction of elements of the competence-based approach in the experimental group, qualitative changes took place. In all statements, the proportion of responses “5 – completely agree” sharply increased and became dominant (paired t-test: $t = 6.18-8.42$, $p < 0.001$). In particular, interest in the teaching profession grew from 25% to 50%, satisfaction with the performance of learning tasks – from 17%

to 52%, and awareness of the social significance of the profession – from 30% to 56%. High indicators were also recorded in relation to the personal meaning of professional training (54%), confidence in the choice of profession (54%) and interest in improving pedagogical abilities and skills (54%).

Comparative analysis of the results after the experiment demonstrates the advantage of the experimental group over the control group (independent t-test: $t = 4.87-6.23$, $p < 0.001$). Whereas in the control group the proportion of responses “5” mostly does not exceed 25%, in the experimental group it ranges from 48% to 56%. Thus, the implementation of competence-oriented educational practices ensured not only a quantitative increase in motivational indicators, but also a qualitative change in the structure – a shift from externally and situationally determined motivation to internally conscious professional orientation. Overall, the results of the experiment confirm the effectiveness of the competence-based approach as a means of developing pedagogical motivation among future teachers. The changes obtained indicate an increase in interest in teaching activity, awareness of its personal and social significance, as well as students’ readiness for active professional self-development, which is a precondition for the successful professional formation. To assess the formation of pedagogical motivation and readiness for professional activity, case-based tasks of a professional orientation were used. The generalised results of assessing the level of students’ confidence in the decisions for each case in the control and experimental groups before and after the experiment are presented in Table 4.

Table 4. Distribution of responses of CG and EG in the performance of case-based tasks

Case study	Criterion	CG before	CG after	EG before	EG after
Case 1. Disruption of discipline in the lesson	Reasoning behind decisions	1-12%, 2-18%, 3-37%, 4-22%, 5-11%	1-8%, 2-15%, 3-33%, 4-28%, 5-16%	1-6%, 2-14%, 3-29%, 4-34%, 5-17%	1-2%, 2-7%, 3-21%, 4-41%, 5-29%
	Practical applicability	1-17%, 2-22%, 3-31%, 4-20%, 5-10%	1-10%, 2-18%, 3-29%, 4-27%, 5-16%	1-12%, 2-17%, 3-28%, 4-29%, 5-14%	1-3%, 2-9%, 3-24%, 4-36%, 5-28%
	Independence and critical thinking	1-14%, 2-21%, 3-32%, 4-19%, 5-14%	1-9%, 2-16%, 3-30%, 4-29%, 5-16%	1-7%, 2-13%, 3-31%, 4-34%, 5-15%	1-2%, 2-8%, 3-22%, 4-38%, 5-30%
	Analysis and improvement of activity	1-11%, 2-19%, 3-35%, 4-21%, 5-14%	1-7%, 2-16%, 3-31%, 4-27%, 5-19%	1-5%, 2-13%, 3-30%, 4-32%, 5-20%	1-1%, 2-9%, 3-23%, 4-37%, 5-30%
Case 2. Increasing pupils' learning motivation	Reasoning behind decisions	1-15%, 2-20%, 3-33%, 4-22%, 5-10%	1-10%, 2-16%, 3-28%, 4-28%, 5-18%	1-9%, 2-14%, 3-30%, 4-29%, 5-18%	1-2%, 2-8%, 3-22%, 4-39%, 5-29%
	Practical applicability	1-18%, 2-24%, 3-29%, 4-19%, 5-10%	1-11%, 2-19%, 3-28%, 4-27%, 5-15%	1-10%, 2-16%, 3-29%, 4-28%, 5-17%	1-3%, 2-9%, 3-23%, 4-36%, 5-29%
	Independence and critical thinking	1-14%, 2-22%, 3-32%, 4-20%, 5-12%	1-9%, 2-17%, 3-30%, 4-28%, 5-16%	1-6%, 2-13%, 3-31%, 4-33%, 5-17%	1-2%, 2-7%, 3-22%, 4-37%, 5-32%
	Analysis and improvement of activity	1-16%, 2-21%, 3-30%, 4-21%, 5-12%	1-10%, 2-18%, 3-29%, 4-27%, 5-16%	1-7%, 2-15%, 3-30%, 4-31%, 5-17%	1-2%, 2-8%, 3-23%, 4-36%, 5-31%

Table 4. Continued

Case study	Criterion	CG before	CG after	EG before	EG after
Case 3. Organisation of differentiated learning	Reasoning behind decisions	1-13%, 2-21%, 3-34%, 4-20%, 5-12%	1-9%, 2-17%, 3-31%, 4-27%, 5-16%	1-6%, 2-14%, 3-30%, 4-33%, 5-17%	1-1%, 2-7%, 3-22%, 4-38%, 5-32%
	Practical applicability	1-15%, 2-23%, 3-32%, 4-18%, 5-12%	1-10%, 2-18%, 3-30%, 4-26%, 5-16%	1-7%, 2-15%, 3-29%, 4-31%, 5-18%	1-2%, 2-8%, 3-23%, 4-37%, 5-30%
	Independence and critical thinking	1-14%, 2-22%, 3-33%, 4-19%, 5-12%	1-9%, 2-17%, 3-31%, 4-27%, 5-16%	1-6%, 2-13%, 3-30%, 4-33%, 5-18%	1-1%, 2-8%, 3-22%, 4-38%, 5-31%
	Analysis and improvement of activity	1-16%, 2-21%, 3-31%, 4-19%, 5-13%	1-10%, 2-17%, 3-29%, 4-28%, 5-16%	1-6%, 2-14%, 3-30%, 4-32%, 5-18%	1-2%, 2-8%, 3-23%, 4-36%, 5-31%
Case 4. Analysis and improvement of one's own pedagogical activity	Reasoning behind decisions	1-12%, 2-19%, 3-34%, 4-22%, 5-13%	1-8%, 2-16%, 3-30%, 4-28%, 5-18%	1-5%, 2-13%, 3-31%, 4-33%, 5-18%	1-1%, 2-7%, 3-23%, 4-37%, 5-32%
	Practical applicability	1-15%, 2-23%, 3-31%, 4-19%, 5-12%	1-10%, 2-17%, 3-30%, 4-27%, 5-16%	1-7%, 2-14%, 3-29%, 4-32%, 5-18%	1-2%, 2-8%, 3-22%, 4-37%, 5-31%
	Independence and critical thinking	1-14%, 2-21%, 3-33%, 4-20%, 5-12%	1-9%, 2-17%, 3-31%, 4-28%, 5-15%	1-6%, 2-13%, 3-30%, 4-33%, 5-18%	1-1%, 2-7%, 3-22%, 4-38%, 5-32%
	Analysis and improvement of activity	1-16%, 2-22%, 3-30%, 4-20%, 5-12%	1-10%, 2-17%, 3-29%, 4-28%, 5-16%	1-7%, 2-14%, 3-30%, 4-32%, 5-17%	1-2%, 2-8%, 3-23%, 4-36%, 5-31%
Case 5. Communication with parents in a conflict situation	Reasoning behind decisions	1-13%, 2-20%, 3-36%, 4-19%, 5-12%	1-9%, 2-17%, 3-30%, 4-27%, 5-17%	1-6%, 2-13%, 3-30%, 4-32%, 5-19%	1-1%, 2-7%, 3-22%, 4-37%, 5-33%
	Practical applicability	1-15%, 2-22%, 3-33%, 4-19%, 5-11%	1-10%, 2-17%, 3-29%, 4-27%, 5-17%	1-7%, 2-15%, 3-29%, 4-31%, 5-18%	1-2%, 2-8%, 3-22%, 4-36%, 5-32%
	Independence and critical thinking	1-14%, 2-21%, 3-32%, 4-20%, 5-13%	1-9%, 2-17%, 3-30%, 4-28%, 5-16%	1-6%, 2-14%, 3-30%, 4-32%, 5-18%	1-1%, 2-7%, 3-22%, 4-38%, 5-32%
	Analysis and improvement of activity	1-16%, 2-22%, 3-30%, 4-19%, 5-13%	1-10%, 2-17%, 3-29%, 4-28%, 5-16%	1-7%, 2-14%, 3-30%, 4-32%, 5-17%	1-2%, 2-8%, 3-23%, 4-36%, 5-31%

Source: compiled by the author

The analysis of the results of the case-based tasks showed that the implementation of the competence-based approach influenced the development of students' pedagogical motivation and confidence in making professional decisions. In the control group after the experiment only a slight improvement in indicators was observed; for example, the average percentage of high scores (5 points) for the criterion "Independence and critical thinking" increased from 12% to 16%, and for the criterion "Analysis and improvement of activity" – from 14% to 19% (paired t-test: $t = 2.01-2.45$, $p < 0.05$). In the experimental group the changes were noticeable: the average percentage of scores of 5 for "Independence and critical thinking" increased from 15-18% to 28-32%, and for "Analysis and improvement of activity" – from 17-20% to 30-33% (paired t-test: $t = 4.18-5.02$, $p < 0.001$). The reasoning behind decisions increased from 14-18% to 29-33%, and practical applicability – from 14-18% to 28-36%, which indicates a significant increase in students' ability to justify the actions and propose practically appropriate solutions.

The greatest progress was observed in the cases "Communication with parents in a conflict situation" and "Increasing pupils' learning motivation", where the percentage of high scores (5 points) in the EG reached 32-33%, and the average level of scores of 4-5 was more than 65%, whereas in the CG these indicators ranged from 30% to 40% (independent t-test after the experiment: $t = 3.87-5.12$, $p < 0.001$). This demonstrates that the modelling of real pedagogical situations and the incorporation of the competence-based approach effectively stimulate the development of critical thinking, the ability to analyse

pedagogical actions and to make well-grounded decisions. Overall, the results show that case-based tasks make it possible not only to increase students' professional confidence, but also to form internal motivation for teaching activity. A comparison of the CG and EG shows that active involvement in practical situations and systematic feedback from teachers contribute to a significant increase in indicators of pedagogical competence in the sphere of independent decision-making and critical analysis of one's own activity.

In general, the pedagogical experiment conducted showed that the implementation of the competence-based approach influences the development of pedagogical motivation and professional confidence among future teachers. The experimental group demonstrated improvements in all key aspects; students became more interested in the profession, were more actively involved in the learning process and showed readiness for independent decision-making and critical analysis of the activity. The performance of case-based tasks made it possible to trace how the acquired knowledge and skills are realised in practice, stimulating the development of competences and internal motivation. Overall, the results confirm the effectiveness of the systematic combination of theoretical training, practical tasks and teachers' feedback in forming students' professional readiness and conscious motivation. Statistical analysis showed that in the experimental group significant changes occurred in all the criteria of the case-based tasks ($p < 0.001$), whereas in the control group the improvements were moderate and partly significant ($p < 0.05$). This confirms the effectiveness of implementing the competence-based approach in the development

of pedagogical motivation and professional confidence among future teachers and also emphasises the importance of the systematic combination of theoretical training, practical tasks and feedback from teachers.

Scenarios for the development of pedagogical motivation among future teachers

The analysis of the results of the pedagogical experiment revealed not only an increase in individual motivational indicators, but also a qualitative change in the type of students' motivational orientation, which made it possible empirically to distinguish scenarios for the development of pedagogical motivation. On the basis of the generalisation of the results of the questionnaire (Table 1) and the case-based tasks (Table 2), students were classified according to the

dominant type of motivational behaviour, level of involvement in practical activity, nature of reflection and ability for independent professional choice. To determine the key approaches to modelling pedagogical motivation, the main scenarios for the development of motivation among future teachers were distinguished, which differ in the degree of student activity, the way of involvement in practical activity and the integration of the components of practice, reflection, and feedback. Table 5 summarises these scenarios; each scenario is characterised by a specific combination of the components of practice, reflection and feedback, the duration of practical classes and the level of students' involvement in teaching activity. The table presented makes it possible to summarise these parameters, clearly compare the approaches and determine the main characteristics.

Table 5. Main scenarios for the development of pedagogical motivation among future teachers

Scenario	Main focus	Components and activities	Practical duration	Features of motivation
Active-professional	Formation of a high level of internal interest and active participation in professional activity	Constant involvement in practice, preparation of lessons, development of materials, modelling situations, simulation exercises, case-based tasks, distance platforms for exchanging experience	4-6 hours per week, online consultations 30-40 minutes, group discussions 60 minutes every two weeks	High internal motivation, regular self-assessment and reflection, feedback, integration of cognitive, emotional and behavioural components
Adaptive-competence-based	Gradual development of key teaching competences	Assessment of the current level of motivation and competences, individual development trajectories, practical tasks with increasing complexity, digital monitoring of progress	3-4 hours of practice per week, training sessions, staged assessment of competences	Motivation is formed through awareness of the results of one's own actions, adaptation to real conditions, gradual involvement with teacher support
Formally oriented	Fulfilment of the minimum necessary requirements	Lecture-based tasks, basic practical exercises, periodic teacher consultations, structured support, incentive systems	1-2 hours of practice per week, periodic consultations	Low level of internal motivation; motivation is maintained through external stimuli, gradual integration of reflection and mentoring

Source: compiled by the author

The active-professional scenario presupposes the constant combination of three key components: practice, reflection and feedback. Students carry out weekly micro-projects that include the preparation of lessons or the development of teaching materials with specific competence-based goals – for example, the development of critical thinking, the formation of group skills or the integration of cross-curricular links. Each micro-project is accompanied by self-checking and self-assessment, which stimulates the awareness of one's own competence and increases motivation at cognitive, emotional and behavioural levels. Weekly reflection enables the student to describe difficulties, ways of overcoming the complications and the results achieved, and the use of distance platforms for exchanging experience and commenting on peers' work creates a permanent cycle of actions and feedback.

The adaptive-competence-based scenario focuses on the gradual formation of teaching competences. At the first stage, the current level of motivation and competences of the student is assessed, which makes it possible to identify strengths and weaknesses and to form individual development trajectories. Practical tasks have increasing complexity, from managing pupils' behaviour in the lesson

to differentiated learning and complex communication situations with parents or colleagues. The student regularly performs self-assessment and receives objective feedback from the teacher, which ensures the adaptation of activity to real conditions and the development of conscious motivation. Systematic monitoring of progress through digital platforms makes it possible to visualise the development of competences in percentages or graphically, which additionally stimulates motivation.

The formally-oriented scenario focuses on the minimum necessary requirements and is characterised by an initial level of internal motivation. Its use is justified for students who need structured support and stimulation. The main purpose of this scenario is to create a starting point for the acquisition of basic knowledge and skills, gradually integrating practice, reflection and mentoring. Regular training sessions, additional practical tasks and teacher support make it possible to move students to an active or adaptive-competence-based level of motivation. For the practical implementation of all three scenarios, precise planning of resources and time is important. The active-professional scenario includes a complex combination of practical tasks, reflection and feedback, the

adaptive-competence-based scenario – the staged introduction of components with a gradual increase in the role of the teacher, and the formally-oriented scenario – minimum requirements with integrated support. Such an approach ensures the systematic formation of pedagogical motivation, taking into account students' individual characteristics and the resource capabilities of the educational institution. As a result, the scenarios described make it possible to create holistic, predictable trajectories of the professional development of future teachers and effectively combine learning, reflection and the assessment of results.

Before the experiment, in the experimental group students with a formally-oriented type of motivation predominated (about 42%), who demonstrated situational interest in learning, orientation mainly towards external stimuli and a medium level of performance in case-based tasks. The proportion of students with an adaptive-competence-based type was about 38%, and the active-professional type was represented by only 20% of respondents. After the introduction of competence-oriented educational practices, a significant redistribution of motivational types took place. The proportion of students with an active-professional scenario increased to 54-57% ($p < 0.001$), which was accompanied by the dominance of high scores (4-5 points) in the case-based tasks, consistently high indicators of internal motivation and the ability to carry out reflective analysis of the activity. The proportion of the adaptive-competence-based type amounted to 30-32%, whereas the formally-oriented scenario decreased to 11-14%. Thus, the empirical data obtained confirm that the scenarios for the development of pedagogical motivation are not purely theoretical models, but reflect real trajectories of students' professional development recorded during the pedagogical experiment. The shift in the distribution towards the active-professional scenario indicates the effectiveness of the competence-based approach as a mechanism for the transition from formally and externally determined motivation to internally conscious professional orientation.

Therefore, such a precise scenario-based plan helps systematically to form motivation, taking into account students' individual characteristics and the resource capabilities of the educational institution. In conclusion, the three scenarios for the development of pedagogical motivation among future teachers described make it possible to create holistic and predictable trajectories of professional development. The active-professional scenario is optimal for students with a high level of internal motivation and initiative, the adaptive-competence-based scenario – for the gradual formation of competences and confidence, and the formally-oriented scenario – for the initial level or for students with low internal motivation who need to be stimulated through structured tasks and teacher support. All three scenarios presuppose the integration of practice, reflection, and the assessment of results, which makes it possible effectively to develop pedagogical motivation and professional readiness among future teachers in different learning conditions.

■ DISCUSSION

Pedagogical motivation of future teachers is a key factor in the success of professional training and in the formation of the teacher's personality, which is consistent with I. Gómez-Trigueros *et al.* (2024). In the study, the authors considered the integration of technology and didactics as a means of increasing students' professional motivation. The authors emphasised that active participation in the learning process stimulates internal motivation and forms pedagogical competence. Motivation determines students' activity, purposefulness, and readiness to apply knowledge in practice, as noted by L. Bardach & R. Klassen (2021). The authors analysed the relationship between teachers' motivation and students' outcomes and showed that a high level of motivation stimulates active participation in the learning process. The study emphasises that motivation is a key factor in the implementation of knowledge in practice. Pedagogical motivation is formed under the influence of internal needs, external conditions and pedagogical technologies, as supported by J. Forson *et al.* (2021). The researchers examined the relationship between motivation and teachers' work performance. The authors underlined those external stimuli and learning conditions increase students' internal motivation. Self-determination theory distinguishes three components in the development of internal motivation: autonomy, the feeling of competence and social involvement, as emphasised by R. Pekrun (2021). The author analysed the role of emotions and self-regulation in professional training. The author showed that the integration of these three components stimulates independence and internal interest in learning.

Autonomy presupposes the independent choice of learning methods and responsibility for the results of activity, as confirmed by A. Kosholap *et al.* (2021). The authors studied the neuropsychological mechanisms of self-improvement in future teachers. The study showed that autonomy stimulates responsibility for one's own learning and activates internal motivation. The feeling of competence is formed through the successful completion of tasks and the development of practical skills, as stated by S. Schukajlow *et al.* (2023). The authors analysed the relationship between emotions and motivation in learning mathematics. The authors emphasised that successful completion of tasks increases the feeling of competence and encourages independent development. Social involvement is manifested in the feeling of the value of one's activity for the collective and for society, as confirmed by M. Mahmoodi & M. Yousefi (2021). The researchers investigated motivation for learning a second language and found that awareness of the social significance of activity stimulates internal motivation. The study showed that social involvement promotes students' active participation in the learning process. Students who are aware of the social significance of the profession demonstrate more active internal motivation, as underlined by S. Karasievykh *et al.* (2021). The authors analysed the pedagogical training of future physical education teachers. The study showed that the social significance

of the profession increases motivation and forms an active learning position among students.

The competence-based approach integrates knowledge, skills, values, and readiness for practical activity, thereby increasing motivation, which is consistent with J. Ali *et al.* (2023). The researchers investigated the impact of ChatGPT on learning motivation. The authors showed that innovative approaches and competence-based integration stimulate students' active engagement in the learning process. Reflection and critical thinking enable students to become aware of the professional development and stimulate self-improvement, as emphasised by J. Zheng (2021). The author analysed the influence of teachers' clarity and credibility on students' motivation and engagement. The author showed that reflection helps students to assess the progress and stimulates professional development. Social interaction increases the feeling of the significance of the student's role in the professional environment, as confirmed by A. Fiddiyasari & R. Pustika (2021). The researchers studied pupils' motivation during online English learning. The study showed that interaction with peers stimulates internal motivation and active participation in learning.

Pedagogical motivation is formed through the integration of autonomy, competence, social involvement and internal motives, which is consistent with E. Asmus (2021). The author analysed motivation in music education. The author proved that complex integration of these factors forms stable internal motivation and active learning behaviour. After the experiment, the share of students in the experimental group with maximum motivation ("5") increased to 48-56%, while in the control group it remained at 25%, as confirmed by J. Campillo-Ferrer & P. Miralles-Martín (2021). The authors analysed the effectiveness of flipped learning during the pandemic. The study showed that new approaches stimulate an increase in students' internal motivation. The performance of case-based tasks makes it possible to assess students' readiness to make pedagogical decisions and justify these decisions, which is consistent with M. Khazen *et al.* (2025). The authors investigated the development of ethical decisions and motivation among future teachers. The authors showed that case-based tasks contribute to the formation of practical skills and an active position among students. In the control group before the experiment, most students chose neutral responses ("3" – 29-37%), as confirmed by M. Beardsley *et al.* (2021). The researchers studied the impact of emergency education on motivation to use digital technologies. The results demonstrated that without active support, motivation remains at a low level.

After the introduction of the competence-based approach in the experimental group, all case situations were characterised by the dominance of the response "5" – 28-33%, as noted by A. Ekmekci & D. Serrano (2022). The authors analysed the influence of teacher quality on motivation and learning outcomes. The study showed that the competence-based approach increases students' readiness to make pedagogical decisions. The active-professional scenario of motivation development presupposes weekly

performance of micro-projects and cases, reflection and feedback, which is consistent with I. Humeniuk *et al.* (2022). The researchers studied pedagogical support for future engineering teachers. The authors showed that systematic activity stimulates the development of internal motivation and professional competences. The adaptive-competence-based scenario includes gradual development of competences and systematic monitoring of progress through digital platforms, as confirmed by S. Suyatno *et al.* (2024). The authors investigated internal motivation of Generation Z for the profession of primary school teacher. The study showed that phased adaptation of learning through digital platforms increases students' interest and effectiveness. The formally-oriented scenario is characterised by minimal requirements, low internal motivation and the need for stimulation through structured support, as noted by K. Anwar *et al.* (2021). The authors analysed the influence of collaborative team learning on students' motivation. The authors showed that without structured support, internal motivation remains low and additional stimulation is required.

Thus, the development of learning motivation among future teachers in the conditions of a competence-based approach is formed through the integration of autonomy, the feeling of competence, social involvement and internal motives. Studies have shown that active performance of project tasks, cases and mini-lessons, systematic reflection, critical thinking and social interaction increase students' internal motivation and promote the formation of practical competences. The introduction of adaptive-competence-based and active-professional learning scenarios stimulates readiness for teaching activity, increases students' activity and responsibility, whereas formally-oriented approaches require additional structured support. Thus, the competence-based approach is an effective mechanism for the development of motivation and professional readiness of future teachers, combining knowledge, skills, values and practical activity in a holistic educational strategy.

■ CONCLUSIONS

The study carried out made it possible to assess comprehensively the state of pedagogical motivation among future teachers and to identify effective approaches to its development in the conditions of a competence-based approach. It was established that pedagogical motivation is a dynamic characteristic that is formed under the influence of students' internal needs, the social significance of the profession and the level of involvement in practical activity. The results of the experimental work confirmed that competence-oriented learning, which includes the integration of practical tasks, cases, micro-projects, role-playing games and reflective exercises, contributes to a significant increase in internal motivation, to a higher level of confidence in one's own pedagogical decisions and to the development of professional competence.

The data analysis showed that before the experiment most students demonstrated a medium level of motivation,

characterised by a vague interest in teaching activity, limited awareness of the social significance of the profession and an insufficient level of readiness for independent professional self-development. After the introduction of competence-oriented educational practices in the experimental group, the share of responses “5 – completely agree” increased statistically significantly ($p < 0.01$) by 25-30% depending on the question (for example, from 25% to 50-56%), which indicates the formation of students’ conscious internal motivation. In the control group growth was also observed, but by 5-10%, which confirms the effectiveness of competence-based practices in increasing interest, professional confidence and readiness for self-development in teaching activity. Thus, interest in the teaching profession increased from 25% to 50%, satisfaction with the performance of learning tasks – from 17% to 52%, awareness of the social significance of the profession – from 30% to 56%, and readiness for professional self-development – from 13% to 48%. In the control group the changes were moderate, and the share of responses “5” did not exceed 25%, which demonstrates the lower effectiveness of the traditional organisation of the learning process without a competence-based approach. The analysis of case-based tasks showed that before the experiment most students had medium or low confidence in decision-making (“3” – 29-37%, “5” – 11-20%). After the introduction of competence-based practices in the experimental group, the share of high scores (“5”) increased to 28-36% depending on the criterion, and low scores (“1-2”) were almost absent. The greatest changes were observed in the cases “Communication with parents” and “Increasing learning motivation”, where “4-5” exceeded 65%, whereas in the control group these indicators were 30-40%. This indicates the effectiveness of the competence-based approach. Statistical analysis of the results using the paired t-test revealed significant positive changes in the experimental group between the indicators before and after the formative stage ($t = 4.18-5.36$, $p < 0.001$), which confirms the effectiveness of the competence-oriented practices introduced. In the control group the changes were moderate and, in most cases, reached the level of statistical significance only at $p < 0.05$ ($t = 1.97-2.41$). A comparison of the experimental and control groups after the experiment using the independent t-test showed a statistically significant advantage of the experimental group in all indicators of pedagogical

motivation and in the results of the case-based tasks ($t = 3.84-5.12$, $p < 0.001$).

Within the framework of the study three scenarios for the development of pedagogical motivation among future teachers were distinguished, formed on the basis of the generalisation of the results of the pedagogical experiment, the analysis of mean scores and standard deviations, as well as indicators of the performance of case-based tasks (reasoning behind decisions, practical applicability, independence, and reflexivity of activity). The classification of scenarios was carried out by grouping students according to the dominant type of motivational orientation, the level of formation of professional competences and the nature of learning activity identified at the empirical stage of the study. The identified scenarios make it possible to plan the educational process taking into account students’ individual characteristics and the level of motivation. The active-professional scenario is effective for students with a high level of internal motivation and initiative; it presupposes constant inclusion in practical activity, weekly performance of micro-projects, reflection and feedback from the teacher. The adaptive-competence-based scenario is aimed at the gradual formation of competences and conscious motivation through phased performance of practical tasks and cases, assessment of progress and digital monitoring of results. The formally-oriented scenario is used for students with a low level of motivation and presupposes basic tasks with the gradual introduction of support, mentoring and reflection to move to an active level of motivation. The main direction of further research is the expansion of the sample and the introduction of long-term monitoring of the effectiveness of the competence-based approach in different educational institutions, in particular through the analysis of the development of pedagogical motivation throughout the entire period of study and the first years of professional activity.

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Компетенттүүлүккө негизделген ыкманын контекстинде келечектеги мугалимдерде окууга мотивацияны өнүктүрүү

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Аннотация. Изилдөөнүн максаты келечектеги мугалимдерде педагогикалык мотивацияны өнүктүрүүнүн натыйжалуу ыкмаларын аныктоо болду. Методология педагогикалык мотивацияны жана компетенттүүлүккө негизделген ыкманы талдоону, контролдук жана эксперименталдык топтор менен педагогикалык эксперимент жүргүзүүнү камтыйт; сценарийдик моделдөө алкагында келечектеги мугалимдердин педагогикалык мотивациясын өнүктүрүүнүн үч сценарийи аныкталды: активдүү-кесиптик, адаптивдүү-компетенттүүлүккө негизделген жана формалдуу багытталган. Изилдөөнүн негизги жыйынтыктары компетенттүүлүккө негизделген ыкманын келечектеги мугалимдерде ички мотивацияны жана кесиптик ишенимди калыптандырууда натыйжалуу экенин көрсөткөн. Эксперименталдык топто компетенцияга негизделген окутуунун элементтери киргизилгенден кийин мотивациясы жогорку деңгээлдеги студенттердин үлүшү негизги көрсөткүчтөр боюнча статистикалык жактан маанилүү ($p < 0,01$) түрдө 13-30 %дан 48-56 %га чейин өстү: кесипти өздөштүрүүгө кызыгуу, билим берүү тапшырмаларын аткаруудан канааттануу, педагогикалык ишмердүүлүктүн коомдук маанилүүлүгүн түшүнүү, кесиптик даярдыктагы жеке маани, педагогикалык көндүмдөрдү жана жөндөмдөрдү өз алдынча өнүктүрүүгө жана жакшыртууга даярдык. Эксперимент башталганга чейин студенттердин көпчүлүгү педагогикалык чечимдерди кабыл алууда орточо же төмөн ишеним көрсөткөн (3 – 29-37 %, 5 – 11-20 %). Эксперименталдык топто компетенцияга негизделген ыкмаларды киргизгенден кийин ар кандай критерийлер боюнча “5” деген жогорку баалоолордун үлүшү 28-36%га чейин өстү, ал эми төмөн баалоолор дээрлик жок болду. Ата-энелер менен байланышта жана студенттердин окууга болгон мотивациясында прогресс байкалган: “4-5” баалардын орточо деңгээли 65 %дан ашкан, ал эми контролдук топто 30-40 % болгон. Микродолбоорлорду, кейс-изилдөөлөрдү, ролдук оюндарды жана системалуу рефлексияны активдүү колдонуу ички мотивацияны калыптандырып, компетенттүүлүк деңгээлин жогорулатып, студенттердин педагогикалык практикага аң-сезимдүү катышуусуна өбөлгө түзөрү аныкталды. Мындан тышкары, изилдөө педагогикалык мотивацияны өнүктүрүүнүн үч сценарийин аныктады: активдүү-кесиптик, адаптивдүү-компетенттүү жана формалдуу багытталган. Иштин практикалык маанилүүлүгү алынган натыйжаларды мугалимдерди даярдоочу мекемелерде айырмаланган окуу траекторияларын иштеп чыгууда колдонууга мүмкүндүк берүүсүндө жатат.

Негизги сөздөр: кесиптик багыт; ички кызыгуу; социалдык маанилүүлүк; практикалык иш-аракет; кесиптик даярдык

Развитие мотивации к обучению будущих учителей в контексте компетентностного подхода

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Аннотация. Целью исследования было определение эффективных подходов к развитию педагогической мотивации будущих учителей. Методология включала анализ педагогической мотивации и компетентностного подхода, проведение педагогического эксперимента с контрольной и экспериментальной группами; в рамках сценарного моделирования были выделены три сценария развития педагогической мотивации будущих учителей: активно-профессиональный, адаптивно-компетентностный и формально-ориентированный. Основные результаты исследования свидетельствовали об эффективности компетентностного подхода в формировании внутренней мотивации и профессиональной уверенности будущих учителей. В экспериментальной группе после внедрения элементов компетентностного обучения доля студентов с высоким уровнем мотивации статистически значимо ($p < 0,01$) увеличилась с 13-30 % до 48-56 % по ключевым показателям: интерес к освоению профессии, удовлетворенность выполнением учебных заданий, осознание социальной значимости педагогической деятельности, личностного смысла профессиональной подготовки, готовность к саморазвитию и совершенствованию педагогических умений и навыков. До эксперимента большинство учащихся демонстрировали среднюю или низкую уверенность в принятии педагогических решений (ответы «3» – 29-37 %, «5» – 11-20 %). После внедрения компетентностных практик в экспериментальной группе доля высоких оценок «5» по различным критериям увеличилась до 28-36 %, а низкие оценки практически исчезли. Прогресс был отмечен в случаях общения с родителями и повышения мотивации учащихся к обучению, где средний уровень оценок «4-5» превысил 65 %, тогда как в контрольной группе он составлял 30-40 %. Было установлено, что активное использование микропроектов, кейсов, ролевых игр и систематического рефлексирования сформировало внутреннюю мотивацию, повысило уровень компетентности и способствовало сознательному вовлечению студентов в педагогическую практику. Кроме того, в ходе исследования были выделены три сценария развития педагогической мотивации: активно-профессиональный, адаптивно-компетентностный и формально-ориентированный. Практическая значимость работы заключается в возможности использования полученных результатов в учреждениях педагогического образования для разработки дифференцированных траекторий обучения.

Ключевые слова: профессиональная ориентация; внутренний интерес; социальная значимость; практическая деятельность; профессиональная готовность



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Transformation of the value orientations of humanities students in the process of engaging in intercultural interaction practices

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Abstract. The study aimed to model how the value orientations of humanities students transform through intercultural interaction, drawing on speech and textual indicators. The research was designed as a phased mixed-methods study, combining the analysis of educational framework documents with paired “before/after” measurements based on a corpus of student texts, group discussion materials and questionnaire results. The empirical stage took place at Kyrgyz State University named after I. Arabaev in Kyrgyzstan between January and September 2025. An operational three-level model of transformation was subsequently proposed, comprising values and attitudes, communicative skills, and knowledge and critical understanding. Changes were recorded through measurable speech parameters, such as the inclusivity of nominations, categorical judgements, reflexivity of statements, academic accuracy when working with sources, quality of cultural commentary, and the ability to analyse the pragmatics of a text rather than merely declare it. Quantitative analysis of paired texts normalised per 1,000 words showed that the frequency of inclusive linguistic units increased from 6.8 to 11.4, and the frequency of reflexive markers increased from 4.5 to 12.7. Meanwhile, the categorical index decreased from 14.2 to 7.9. In terms of skills, the frequency of argument reformulation episodes in discussions increased from 1.8

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to 4.6 per discussion, the quality of cultural commentary in translation tasks improved from an average of 2.6 to 4.1 out of 5, and the proportion of correctly formatted and functionally integrated references grew from 68% to 89%. There was also an improvement in the level of critical understanding: the proportion of correct identifications of discursive strategies increased from 58% to 81%; the proportion of accurate identifications of stereotypical frames increased from 43% to 74%; and the overall score for analysing the pragmatic function of a text increased from 2.1 to 4.3 points. Questionnaire measurements indicated growth in tolerance for ambiguity (from 3.12 to 3.89), responsibility in speech (from 3.34 to 4.21) and intercultural communicative confidence (from 3.28 to 3.94). The intensity of participation in intercultural activities was found to correlate positively with a reduction in categorical judgements. The study's practical significance lies in the potential application of the proposed system of speech indicators and the described model as tools for designing, evaluating and adjusting intercultural educational practices within humanities programmes. This could be used to develop criteria for assessing written work, peer assessment procedures and tasks that promote sustainable, value-based change

Keywords: speech; communication; internationalisation; inclusivity; discursive strategies; categorical judgements; tolerance for ambiguity

■ INTRODUCTION

Changes in higher education associated with increased intercultural contact have not only brought competencies to the fore but also transformed value orientations among humanities students. For philology in particular, this issue has become highly relevant, given that language functions as an object of analysis, a means of interpretation, and an instrument of social interaction. The need has arisen to empirically explain how intercultural interaction influences students' interpretative strategies, argumentative models and speech norms, and whether these changes can be measured through textual indicators. The issue of value transformation in international higher education was given conceptual backing in the work of D.K. Deardorff & E. Jones (2022), who defined intercultural competence as a structural component of university educational policy. The authors concluded that competence should encompass attitudes, knowledge, skills, and an internal readiness for interaction rather than being reduced to language training or mobility. They emphasised the need to integrate intercultural outcomes into learning descriptors. L. Edwards & B. Ritchie (2022) examined the role of the humanities in fostering critical thinking and revising worldviews, establishing that involving students in analysing complex sociocultural issues contributes to the evolution of their outlook and the development of cultural competence. They stressed that humanities courses can transform understanding of cultural difference.

S. Hackett *et al.* (2023) analysed the effectiveness of digital formats of cooperation. They identified statistically significant improvements in intercultural competence indicators among students involved in Collaborative Online International Learning (COIL). The study showed that a structured interaction design and shared outputs fostered empathy. It also showed that it fostered dialogical capacity. The authors distinguished between superficial online contact and integrated educational interaction. Drawing on humanities programmes, M.L. Bajec (2024) demonstrated that the systematic inclusion of intercultural tasks in the curriculum fosters a more flexible attitude towards cultural differences and enhances the capacity for reflection. Positive dynamics were observed in students' evaluations

of intercultural situations. T. Lähdesmäki & A.-K. Koistinen (2021) explored the link between intercultural dialogue, art, and the development of empathy, showing that artistic practices promote emotional engagement and awareness of otherness. Empathy was considered a key mechanism of intercultural understanding.

D. Liu *et al.* (2023) described the experience of transnational education in China, finding that intercultural dialogue prompted a reconsideration of learning expectations and communicative norms. Students reinterpreted their own cultural positions through interaction. G. Dosmanova *et al.* (2025) analysed the regional context of Central Asia, demonstrating that language shapes students' communicative culture and influences how respect and hierarchy are expressed. They identified differences in speech practices between Kazakh and Kyrgyz students, highlighting the importance of the linguistic environment in forming communicative norms. J. Ma (2025) examined the phenomenon of tolerance as a social category in humanities education, showing that tolerance development correlated with increased social responsibility among students. These findings emphasised the importance of the value dimension of learning. P. Shozimov (2023) presented an innovative interdisciplinary model of dialogue between European and Central Asian philosophical traditions, concluding that integrating different intellectual systems contributes to the formation of new approaches to humanities education and emphasises the importance of cultural dialogue.

Despite the substantial body of research on intercultural competence, the development of tolerance and empathy, and the revision of worldviews in higher education, changes in values have predominantly been documented through questionnaire responses, educational descriptors, and general behavioural characteristics. In academic discourse, insufficient attention has been given to operationalising such changes through speech and textual indicators that allow one to trace transformations in interpretative strategies, modes of judgement, and argumentative practices. Consequently, empirically grounded models that link intercultural interaction with measurable discursive manifestations of value shifts and enable their analysis as a process

of the structural reconfiguration of speech have remained underdeveloped. It was this gap that determined the need for a study combining the intercultural educational context with a philological analysis of discursive indicators. The study aimed to provide empirical evidence for a model of the transformation of value orientations among humanities students during intercultural interaction.

The aim of the research was to provide empirical substantiation for a model of the transformation of value orientations among humanities students during intercultural interaction. In accordance with this aim, the following objectives were set: to analyse international experience of integrating the intercultural dimension into humanities programmes and outline analytical parameters for assessing value outcomes; to operationalise and empirically verify indicators of transformation in attitudes, skills and critical understanding through quantitative measurement of speech indicators and questionnaire scales, as well as qualitative discursive analysis of interpretative strategies; and to reconstruct a generalised empirical model of transition from intercultural practice to the stabilisation of new value norms.

■ MATERIALS AND METHODS

The study was designed as a phased, mixed-methods analysis of how value orientations change among humanities students through intercultural interaction, using speech and textual indicators. The study was conducted from January to September 2025. Geographically, the research combined two analytical perspectives:

1. An international perspective. This is through systematisation of global approaches to “internationalisation at home”. It also looks at COIL/virtual exchange and the measurement of values in education.

2. A local empirical perspective. This is based on Kyrgyzstan. It focuses on Kyrgyz State University named after I. Arabaev.

Kyrgyzstan and Kyrgyz State University named after I. Arabaev were selected because intercultural interaction at the university is institutional rather than episodic, embedded in formal and informal practices such as collective learning tasks, group discussions, translation exercises, and peer assessment. The sample comprised 124 undergraduate students, aged 18-24 (mean age 20.3), enrolled in philology, translation and communication programmes at Kyrgyz State University named after I. Arabaev, including 71 women and 53 men. Ethnically, 68% were Kyrgyz, 14% were Kazakh, 10% were Turkish and 8% were from other ethnic groups. Proficiency in a second language (Turkish or English) ranged from B1 to C1 according to institutional testing, enabling correlation analysis with speech indicators. Second- to fourth-year students who participated in modules with an intercultural component and provided informed consent were included, while cases with incomplete “before/after” materials or irregular participation were excluded. Of the total sample, 98 students completed the full cycle of written and translation assignments

accompanied by cultural commentary. A further 112 students participated in questionnaires and group discussions, while 86 students completed analytical tasks involving the interpretation of media texts. Subgroups of 9-12 students were formed within each academic group (12 groups in total), ensuring comparable interaction intensity. In accordance with the Code of Ethics, approved by the American Sociological Association (1999), the ICC/ESOMAR International Code on Market, Opinion and Social Research and Data Analytics (2025) and the European Commission’s (2021) recommendations on ethics and data protection, the study adhered to the principles of voluntary participation, anonymity and confidentiality. All data were depersonalised and used exclusively in aggregated form.

The first stage focused on developing an analytical framework and identifying which “values/attitudes” were empirically accessible to philological analysis. A targeted analysis of framework documents and relevant scholarly sources defining educational descriptors of intercultural outcomes was conducted. The main theoretical basis was the Council of Europe (2020) Reference Framework of Competences for Democratic Culture (RFCDC), which structures intercultural development as interaction across three interconnected dimensions: “values and attitudes”, “skills” and “knowledge and critical understanding”. The Organisation for Economic Co-operation and Development (OECD) Learning Compass 2030 enabled alignment of recorded value shifts with educational outcomes. This is according to the OECD future of education and skills 2030 (OECD, 2019). The organisational and pedagogical parameters of intercultural interaction were interpreted in light of the virtual exchange approaches implemented within the Erasmus+ programme, which integrate cooperation into learning tasks and include structured interaction and reflective components (European Youth Portal, n.d.). This enabled the recording of speech changes to be linked to specific educational formats and evaluation criteria (European Commission, 2025). This stage was fundamental for the philological context because it allowed abstract categories (such as “openness”, “responsibility” and “tolerance for ambiguity”) to be transformed into measurable operational indicators in text and discourse.

The second stage involved case substantiation and the construction of the empirical research design at Kyrgyz State University named after I. Arabaev in Kyrgyzstan. A case study approach was employed. This approach included embedded levels of analysis. These were institutional (organisation of intercultural practices), group (distribution of participation), and individual (changes in speech indicators in paired “before/after” products). The methodological relevance of Kyrgyz State University named after I. Arabaev lay in the possibility of comparing interaction formats of varying intensity (number of contact sessions/hours), the presence or absence of reflective procedures (e.g., peer feedback and written comments) and the availability of stable learning products suitable for corpus analysis. The empirical corpus comprised several types of material. These

corresponded to three levels of operationalisation. Firstly, a collection of paired written works (e.g., “before/after” essays, analytical texts, reflective notes) was analysed using quantitative content analysis, normalised to 1,000 words. The assessment included an inclusivity index (frequency of appropriate nominations), a categorical index (frequency of absolute generalisations) and a reflexivity index (frequency of metacommunicative markers). This enabled the tracking of dynamics within individual authors. Secondly, group discussion materials (transcripts and protocols) were coded using a rubric of discursive micro-processes. The frequency of reformulation, clarification, and explanation of connotations per discussion was calculated, alongside a qualitative assessment of paraphrase types. Thirdly, translation and analytical tasks were evaluated using standardised scales: cultural commentary was rated on a five-point scale for addressee, context, and translation strategy, while media text analysis was assessed based on the percentage of correct identification of discursive strategies and a five-point pragmatic analysis scale. Fourthly, questionnaires on a five-point Likert scale in a “before/after” design were used to measure tolerance for ambiguity, responsibility in speech and communicative confidence. This questionnaire was adapted from the RFCDC and from instruments by N. Guillén-Yparrea & M.S. Ramírez-Montoya (2023) to ensure correspondence between the questionnaire scales and speech indicators.

At the third stage, the quantitative coding of textual indicators was carried out with normalisation per 1,000 words, using NVivo 14 and a predefined codebook. Inclusive nominations included: “different groups” and “members of the community” are examples of categorical markers. “Always”, “everyone”, “without doubt” – these are reflexive markers. Expressions such as “probably”, “it may be assumed” and “depending on the context” were used. Inter-coder reliability, assessed on a 20% subsample, was $\kappa = 0.82$, confirming coding consistency. Inclusivity was operationalised as the frequency of neutral/correct nominations and markers of equality/non-exclusion, while categoricity was operationalised as the frequency of absolute quantifiers and markers of unqualified assertion. Reflexivity was operationalised as the frequency of meta-communicative and modal markers indicating the limits of knowledge and alternative interpretations. Episodes of paraphrasing in discussions were additionally coded based on signal markers and a comparison of primary and secondary argument versions. To test the dynamics, paired t-tests for dependent samples were applied when normality was assumed, and Wilcoxon tests were applied when normality was violated. Correlations between participation intensity (the total number of audio-recorded and transcribed sessions, averaging 18-36 hours per student per semester) and

index changes were determined using Pearson or Spearman coefficients. The level of significance was set at $p < 0.001$, adjusted for multiple comparisons, and practical significance was assessed using Cohen's d , corresponding to medium and large effects ($d = 0.64-1.12$). This procedure was justified by the need to distinguish systematic shifts from random fluctuations. It was also necessary to preserve interpretability for philological analysis.

In the final stage, analytical triangulation of the results (corpus indicators, discursive analysis and questionnaires) was undertaken to identify the risks involved in implementing intercultural practices at Kyrgyz State University named after I. Arabaev. These risks were identified as the formalisation of activities, linguistic asymmetry, unequal participation in discussions, and superficial digital contact lacking reflective procedures. These risks were considered factors that disrupt the transition from interaction to reflection, thereby limiting the establishment of new interpretative norms. The result was the creation of an empirical model of transformation, assembled as a series of stages, each with its own speech indicators and effects that could be checked, from small interactions to the growth of responsible, contextualised speech.

■ RESULTS

Global experience and current trends in transforming humanities students' value orientations through intercultural interaction

In higher education, intercultural interaction is increasingly viewed not as an additional aspect of learning, but as a means of achieving measurable outcomes that encompass not only knowledge but also students' attitudes, values, and responsible speech practices. In the humanities, language functions as an object of study, an instrument for interpreting cultural meanings and a mechanism of social interaction. A notable shift is that intercultural outcomes are now being pursued not only through physical mobility, but also by revising course content and pedagogy for all students. The logic behind this approach is described by the terms “internationalisation at home” and “internationalisation of the curriculum”. These terms refer to the deliberate incorporation of intercultural dimensions across various aspects of campus learning, including learning tasks, assessments, academic communication norms, and collaborative practices among students (Gosling & Yang, 2022; Zadravec, 2025). In such cases, it is not the international events themselves that matter, but how universities translate them into learning outcomes and assessment tools (e.g., competence descriptors and portfolios). For philology programmes, the internationalisation of the curriculum has specific entry points (Table 1).

Table 1. Entry points for integrating the intercultural dimension into an internationalised curriculum in philology programmes

Integration area	What is internationalised in courses	Typical learning products/tasks	Expected value-competence outcome
Language-culture-identity	Analysis of the links between linguistic forms and cultural norms, identity and social stratification	Analytical essay on language ideology; comparative analysis of language policies; case studies of discursive conflicts	Development of a critical stance towards the “neutrality” of language; responsibility for naming and meaning-making

Table 1. Continued

Integration area	What is internationalised in courses	Typical learning products/tasks	Expected value-competence outcome
Critical reading	Interpretation of texts from different cultural traditions with a focus on the speaker's position and cultural assumptions	Annotated reading; comparative interpretations; reflective notes on the reader's "blind spots"	Tolerance for a plurality of interpretations; capacity for reflection and dialogue
Media discourse analysis and media literacy	Recognising manipulative strategies; assessing credibility and the ethics of public speech	Critical analysis of media texts; fact-checking; reconstruction of discursive frames in news/social media	Greater responsibility in speech; resilience to manipulation; ethical standards of communication
Translation/mediation	Translation as cultural interpretation: conveying meanings for another audience with regard to context	Tasks involving cultural commentary on translation; paraphrase and adaptation for different addressees; mediation scenarios in conflicts of meaning	Empathic orientation towards the addressee; ethical responsibility for transferring meaning; development of plurilingual flexibility

Source: compiled by the authors based on A.J. Liddicoat & M. Derivry-Plard (2021), M. Rückl (2024)

Designing the curriculum in this way enables transforming intercultural interaction from an incidental aspect of learning into a clearly managed didactic process. Each area provides opportunities for students to develop subject knowledge and rules of interpretation and communication in situations of cultural difference. In the philological context, it is crucial that changes in speech practices can be measured, such as the manner of argumentation, the appropriateness of terminology, and attention to context and addressee. To avoid reducing this logic to mere declarations, universities in European countries use competence frameworks that describe value-related outcomes in the language of educational descriptors. One such framework is the RFCDC by Council of Europe (2020), which organises competences into four categories: values, attitudes, skills, and knowledge and critical understanding. This means that changes can be registered not as abstract "improvements" but as shifts in specific indicators (e.g., respect for human dignity, openness to cultural otherness, critical understanding of language as a bearer of power).

Following the sharp rise of online formats in higher education, the models of virtual exchange and COIL have become widespread – organised collaborative work between students from different countries in a digital environment (joint projects, seminars, debates, peer assessment of texts, partner learning). Erasmus+ virtual exchanges documentation (European Youth Portal, n.d.) emphasises that such exchanges are "person-to-person" online activities aimed at intercultural dialogue and the development of soft skills, but they do not fully replace physical mobility; rather, they reproduce some of its effects and provide access for those who cannot travel. Research evidence on COIL/virtual exchange shows measurable changes in specific components of intercultural competence and communicative practices. In particular, studies of COIL effectiveness (measuring intercultural competence) report statistically significant shifts in relevant indicators among groups involved in COIL compared with control groups (Chaisiri, 2025; Marsee & Hoyos, 2025). In the philological context, virtual exchange provides a setting for real communicative contact and learning through interaction: students must negotiate meaning, explain cultural connotations, edit texts for a different audience, agree on discussion rules, and manage

referencing practices. These micro-processes are potential mechanisms for transforming attitudes, for example tolerance for ambiguity, readiness to consider different interpretations, and the development of empathic listening. A related strand is intercultural digital literacy within humanities education. A systematic review on integrating media and information literacy (MIL) into curricula indicates that MIL is treated as a condition for developing critical, responsible citizenship and the ability to work with information in the public sphere (Rojas-Estrada *et al.*, 2024). For humanities students, this is directly linked to the ethics of interpreting texts and discourses and to norms of argumentation.

Another trend is the shift from rhetoric about values towards describing them as educational outcomes. The OECD's (2019) Learning Compass 2030 framework defines "values and orientations" as principles and beliefs that influence judgements and actions and are connected with wellbeing and responsibility. These components are proposed to be considered alongside knowledge and skills. For philological researchers, it is now methodologically acceptable to measure not only language skills, but also attitudes towards difference, willingness to comply with the ethical norms of academic communication and responsibility in public speech, through questionnaires, situational tasks, analysis of written work and discursive markers. Meanwhile, institutional programmes (e.g., Erasmus+ 2021-2027) explicitly link learning mobility and blended formats with developing social and intercultural competencies, critical thinking, and media literacy (European Commission, 2025). This provides a framework for viewing intercultural practices as a tool for cultivating civic responsibility and human rights within the educational context.

In order to substantiate changes in value orientations, it is advisable to distinguish at least three analytical domains clearly: (1) values/attitudes; (2) interaction skills; and (3) knowledge and critical understanding. These domains manifest in speech practices (Table 2). For philology, this is vital, because it's through text that values and knowledge become apparent – in how a student argues, cites, marks the limits of their own knowledge, reproduces or challenges stereotypes, and chooses strategies for naming and describing the "other".

Table 2. Analytical model for operationalising the transformation of value orientations in philology programmes

Level	Operational components	Examples of indicators in philological data
1. Values/ attitudes	Respect for cultural difference; non-discrimination; responsibility for words/speech; readiness for dialogue	Appropriateness of group nominations; absence of dehumanising markers; recognition of multiple interpretations; reflexive markers (“I assume...”, “another reading may be possible...”)
2. Skills	Intercultural communication; mediation/intermediation; academic writing according to intercultural standards	Ability to paraphrase for another audience; negotiation of meaning; compliance with citation/paraphrase norms; source-based argumentation
3. Knowledge and critical understanding	Language ideology; cultural codes; stereotypes; discourse of power	Ability to identify a text’s “hidden” assumptions; distinguishing facts from evaluations; analysis of pragmatics, roles and speaker positions; critical discourse analysis of media fragments

Source: compiled by the authors based on Council of Europe (2020), N. Guillén-Yparrea & M.S. Ramírez-Montoya (2023)

The presented model offers a structured approach to measuring changes arising from intercultural educational practices. Its three-level structure ensures methodological alignment between the theoretical frameworks of intercultural competence and students’ actual learning outcomes. It also provides a foundation for the development of text-coding instruments, assessment criteria

for written work, and analysis procedures for classroom discussions. In a research context, it enables the link between institutional practices and actual changes in students’ linguistic behaviour and interpretative strategies to be established. Analysis of institutional practices should not only consider declared aims, but also typical risks (Table 3).

Table 3. Typical risks in institutional implementation of intercultural practices in higher education and their analytical indicators

No.	Type of risk	Nature of the problem	Practical manifestations (signs of formalisation/constraint)	Analytical indicators for research
1	Formal internationalisation	International activity does not translate into course content and learning outcomes	Reporting on agreements, events and mobility without changes to syllabi; absence of intercultural learning outcomes; absence of assessment criteria for dialogue, mediation, reflection	Syllabus analysis (presence of intercultural outcomes); review of assessment criteria; presence of reflective tasks (journals, portfolios, peer feedback); ratio of event-based formats to curricular change
2	Inequality of access and language barrier	Limited access to mobility and online formats due to resource, language or organisational factors; symbolic exclusion of certain groups	Low participation by students with lower language proficiency; domination of certain groups in discussions; lack of language support; limited digital infrastructure	Analysis of programme participant composition; language proficiency levels; availability of tutoring/language centres; assessment of participation structure in group discussions; availability of technical resources
3	Risks of the digital format (superficial contact)	COIL/virtual exchange formats implemented without deep collaboration and reflection	Short presentations without a joint product; no peer assessment; minimal reflection; formalistic completion of tasks	Course design analysis (joint projects, peer review, reflective components); task types; duration and frequency of interaction; ways of assessing collaboration

Source: compiled by the authors based on E.G. Rojas-Estrada et al. (2024), M.V. Soulé et al. (2025), European Youth Portal (n.d.)

The above summarises the key institutional risks that could diminish the transformative potential of intercultural educational practices. The difference between declarative “internationalness” and genuine integration of the intercultural component into the learning process can be systematised. The proposed indicators encourage researchers to examine not only quantitative participation metrics, but also the qualitative characteristics of learning design and interaction structures. This allows different formats (physical mobility, COIL and internal internationalisation) to be compared in terms of their impact on substantive educational outcomes.

Empirical dynamics of speech-based transformation of value orientations

Kyrgyz State University named after I. Arabaev is an illustrative case for documenting and explaining transformations

in the value orientations of humanities students, as intercultural interaction is institutionally structured and regularly reproduced across curricular and extracurricular practices. In this context, the empirical framework assumes that shifts in values and attitudes among humanities students can be most reliably observed not through explicit statements “about attitudes”, but through speech indicators. These indicators include the ways in which social groups are named, the modality of judgements, techniques of contextualisation, the accuracy of referencing, and the readiness to acknowledge a plurality of interpretations in texts and discussions. This approach is consistent with the logic of “internationalisation at home”. Here the intercultural dimension is not reduced to mobility. It is embedded in the formal and informal programme. This includes learning tasks, assessment, rules of academic communication and collaborative projects.

The study documented the transformation of humanities students' value orientations through shifts in speech practices, academic writing, and interpretative strategies in intercultural interaction. The analytical framework was based on a three-level model (values/attitudes, skills, and knowledge and critical understanding), with each level operationalised through a set of indicators that could be verified quantitatively and qualitatively. This approach meant that it was possible to avoid generalisations such as "tolerance increased" without any real evidence, and instead to link change to specific textual and discursive parameters. These included choices about nominations, the way judgments were made, how often reflexive markers were used, the structure of argumentation, and practices for working with sources. In terms of values and attitudes, the main findings related to the dynamics of inclusivity and ethical sensitivity in speech. In the corpus of written work and group discussion materials, there was a tendency towards an expanded repertoire of inclusive vocabulary and more cautious references to social groups. In the "after" texts, neutral and contextualised group labels appeared more often. They appeared in place of generalising tags. There was an increase in constructions that mark respect for the addressee. There was also an increase in constructions that mark the right to another perspective. On average across the sample, quantitative counts showed an increase in the frequency of inclusive units from 6.8 to 11.4 per 1,000 words ($\Delta = +4.6$; $p < 0.001$). The greatest increase was observed among students who participated in projects with clearly specified rules for peer assessment and text editing (peer feedback). In this subgroup, the indicator increased from 6.6 to 12.3 per 1,000 words ($\Delta = +5.7$). By contrast, in the subgroup without systematic peer feedback, it increased from 6.9 to 10.0 ($\Delta = +3.1$).

A second indicator at the attitude level was a reduction in categorical formulations. In the "before" texts, constructions with a high degree of generalisation and essentialisation were commonplace ("they always...", "this culture is...", "they do things like this..."), with no specification of context, source or limits of validity. Statements with limiting modifiers such as "in certain situations", "in some cases", "in particular practices" and "depending on the context" became more prevalent in the "after" texts, while conditional and modal means reduced the use of categorical language. The study operationalised categoricity through the frequency of absolute quantifiers ("always/never/all/no one"), markers of unqualified assertion ("it is obvious that...", "without doubt..."), and syntactic structures that do not allow an alternative reading. A comparison of paired texts revealed a decline in categoricity from 14.2 to 7.9 per 1,000 words ($\Delta = -6.3$; $p < 0.001$). Differences between groups with different levels of intercultural interaction (number of contact sessions/hours) were statistically significant ($p < 0.01$).

A third indicator of value shifts was an increase in the use of reflexive markers, which capture a readiness to acknowledge the limits of one's knowledge and alternative

interpretations. These markers included metacommunicative formulae such as "I assume...", "it may be interpreted differently...", "this requires clarification...", "different positions are possible on this issue...". Modal adverbs such as "probably", "possibly", and "largely" were also used, as well as references to conditions of interpretation ("if we proceed from...", "given the available data..."). In paired essays and reflective notes, the number of reflexive markers increased from 4.5 to 12.7 per 1,000 words ($\Delta = +8.2$; $p < 0.001$) and correlated with argument quality. This result is important for philological analysis as reflexivity does not appear at the level of declared values, but rather in the organisation of the text – i.e., in the choice of modality, the composition of the argument and how another position is presented.

At the skills level, the results showed that a transformation in attitudes is accompanied by the development of concrete communication abilities. Firstly, students demonstrated an increased capacity to reformulate an argument, adapting a message for another audience without simplifying it to the point of losing its meaning. During group discussions and peer assessments of texts, students more frequently used paraphrasing as a strategy to achieve mutual understanding. Rather than repeating their thesis unchanged, they clarified it using different lexical and syntactic means, introduced explanatory components or replaced potentially contentious terms with neutral ones. This skill involved coding reformulation episodes in debate transcripts (e.g., "that is", "in other words", "to paraphrase", "what I mean is...") and comparing the primary and secondary versions of the argument. The number of such episodes per discussion increased from 1.8 to 4.6 ($\Delta = +2.8$). Qualitatively, paraphrasing shifted from a superficial 'repetition in other words' to an explanatory form that took account of cultural connotations and potential sources of misunderstanding.

A second skill involved assessing the adequacy of cultural commentary in translation tasks. During the "before" phase, commentary often remained at the level of a dictionary definition or direct explanation of a single word. In the "after" phase, there was a tendency towards more pragmatic commentary, which explained not only the denotative meaning but also the social connotations, stylistic register, potential implicatures, and the risks involved in inaccurately transferring an item into another cultural context. An increase in the integral indicator of cultural commentary quality was recorded, rising from 2.6 to 4.1 points on a five-point scale ($\Delta = +1.5$; $p < 0.001$). Students who, in parallel, completed tasks analysing discursive conflicts in the media demonstrated the most stable growth. A third skill was accurate citation and paraphrasing. In the "before" phase, problems such as overly long quotations without analytical framing, formal referencing without connection to the argument and insufficiently transparent paraphrasing were observed. In the "after" phase, the proportion of correct references increased, while the number of cases of "unattributed" reformulation decreased. The

assessment used a rubric including the following four criteria: (1) the presence of a source; (2) the correct formatting of references; (3) alignment between the quotation and the stated thesis; (4) the quality with which the source was integrated into the argument (i.e., explanation, interpretation or critical comment). The integral indicator of academic accuracy (the proportion of correctly formatted and functionally integrated references) increased from 68% to 89% ($\Delta = +21$ percentage points; $p < 0.001$).

In terms of knowledge and critical understanding, key results included an increased ability to identify discursive strategies, detect stereotypical frames, and analyse text pragmatics. In analytical essays and discussions of media texts, students more frequently identified and differentiated between strategies for legitimising a position, such as appeals to authority, tradition, or common sense, as well as markers of polarisation, such as “us/them”, generalising techniques, and emotive-evaluative intensifiers. The identification of discursive strategies was assessed based on the number of correctly recognised devices in a given excerpt, as well as the ability to explain their function. The proportion of correct identifications increased from 58% to 81% ($\Delta = +23$ percentage points; $p < 0.001$). In the “before” phase, detection of stereotypical frames often remained at the level of identifying their presence, without analysing how they are reproduced textually. In the “after” phase, students more often: (a) distinguished between stereotypes and empirical facts; (b) described the lexical and syntactic features that convey generalisation; and (c) provided context (e.g., who is speaking, in what situation, and for what purpose). The proportion of correct identifications of stereotypical frames increased from 43% to 74% ($\Delta = +31$ percentage points; $p < 0.001$). In terms of pragmatic analysis, attention to the addressee, intention, and speech situation increased, with students more often considering genre, platform, probable audience expectations, and the difference between the literal meaning and the pragmatic effect. One indicator of this change was the rise in cases in which the analysis included the chain “linguistic device $\rightarrow$ pragmatic function $\rightarrow$ possible social consequence”. For the final task, the mean score on a five-point scale increased from 2.1 to 4.3 ($\Delta = +2.2$; $p < 0.001$), which was directly linked to taking responsibility for words as a value orientation.

The quantitative questionnaire results confirmed shifts consistent with the textual indicators. An increase of $\Delta = +0.77$ was recorded on the tolerance for ambiguity scale (from 3.12 to 3.89); an increase of $\Delta = +0.87$ was recorded on the responsibility in speech scale (from 3.34 to 4.21); and an increase of $\Delta = +0.66$ was recorded on the intercultural communicative confidence scale (from 3.28 to 3.94), with $p < 0.001$ for paired comparisons. These quantitative shifts were not regarded as independent “psychological changes”, but rather as manifestations of discourse: increased responsibility in speech was accompanied by an increase in the frequency of reflexive markers and correct references in writing; increased tolerance for ambiguity was associated with a decrease in categoricity

and an increase in the readiness to acknowledge alternative interpretations. Correlation analysis revealed links between participation in intercultural projects and changes in language practices. The intensity of participation (as measured by the number of contact sessions/hours within the learning cycle) was positively correlated with reduced categoricity ($r = 0.63$, $p < 0.001$) and increased reflexivity ($r = 0.51$, $p < 0.001$). A further relationship was observed between language proficiency and attitudinal transformation: students with higher proficiency in the second language demonstrated greater improvement in the quality of their cultural commentary ($r = 0.48$; $p < 0.01$) and in intercultural communicative confidence ($r = 0.42$; $p < 0.01$). These relationships were not interpreted as an “advantage” of a particular group, but rather as an indicator of linguistic asymmetry, which may constrain participation in discussions and thereby reduce the intensity of interaction as a mechanism of transformation.

Qualitative discourse analysis allows describing changes in speech strategies using “before/after” terms without simplifying the findings. Initially, categorical formulations and ethnocentric frames were common, in which the evaluation of another practice was presented as universal according to one’s own norms. There was minimal reflexivity, manifested in the absence of markers limiting knowledge and in insufficient attention to the speaker’s position: statements were produced without sources and without distinguishing between fact and interpretation. Following participation in intercultural practices, conditional constructions became more prevalent, reducing categorical assertions and allowing for alternative perspectives: “It may be considered”, “in a particular context” and “one possible interpretation” are all ways of expressing the same idea. In parallel, strategies for clarification increased, such as asking clarifying questions, reformulating a thesis after receiving feedback and introducing definitions for terms that may have different meanings in another cultural context. Alternative interpretations in writing were recognised in compositional choices, such as comparing two explanatory models, separating “description – evaluation – interpretation”, and introducing counter-argument. Greater ethical sensitivity was reflected in corrected nominations and the avoidance of generalising labels for groups.

Qualitative change is illustrated by excerpts from student texts and discussions. Categorical formulations such as “in this culture people do not value individuality” were used in the initial work, without any contextualisation or reference to a source. In the final work, similar topics were framed differently: For example, “In some social contexts, collective values may be prioritised depending on historical and social factors”, which demonstrates conditional modality and contextualisation. Growth in reflexivity was also evident in discussions: rather than categorically stating that a translation was incorrect, students offered more nuanced responses. “This option may not fully convey the cultural connotation, so it would be appropriate to consider an alternative formulation”. Limits to knowledge and

the presence of different interpretations were marked in the writing (“I assume...”, “it may be interpreted differently...”, “this requires clarification...”), along with counter-arguments or by using “description/evaluation/interpretation” to separate ideas. These changes indicate a shift

from essentialised evaluations to analytical, responsible speech oriented towards interpretation rather than generalisation. Alongside these positive dynamics, the results also identified risks and constraints relevant to the Kyrgyz State University named after I. Arabaev context (Table 4).

Table 4. Risks and constraints in implementing intercultural practices at Kyrgyz State University named after I. Arabaev

No.	Risk/constraint	Description of manifestation in the educational process	Typical effect in speech data (what is recorded)
1	Formalisation of intercultural activities	Interaction is reduced to minimal task completion without reflection and peer assessment	Little or no dynamics in reflexive markers; weak reduction in categorical formulations; persistence of “ready-made” evaluative templates
2	Linguistic asymmetry	Participants with lower proficiency in the interaction language avoid extended turns and choose silent agreement	Fewer episodes of argumentation and reformulation; predominance of short answers; limited initiative in clarifications and questions
3	Unequal participation in discussions	Communicative activity concentrates in a small part of the group	Clear qualitative shifts (reflexivity, conditionality, clarification) mainly among the active “core”; weaker dynamics among peripheral participants
4	Digital format without deep reflection	Online contact occurs without a joint product and without structured reflective procedures	Local politeness markers without sustained restructuring of interpretative strategies; limited contextualisation; weak engagement with alternative readings

Source: compiled by the authors

Having identified these risks, it became clear that the transformative effect of intercultural interaction hinges on the structure of communication and the mechanisms that facilitate participation rather than on contact alone. The most lasting changes were observed when group tasks involved negotiating meaning and included transparent feedback procedures. The risks were factors that “cut short” the

link between interaction and reflection, thereby slowing the establishment of new interpretative norms. This refines the empirical model, since sustainable shifts require regular contact and managed conditions that make speech micro-processes visible and assessable. Generalising the results allowed an empirical model of transformation to be reconstructed as a sequence of interconnected links (Table 5).

Table 5. Empirical model of transformation of value orientations in the process of intercultural interaction (based on the study results)

Stage	Substantive component	Process description	Recorded speech indicators	Outcome effect
1	Intercultural practice	Participation in joint projects, debates, translation tasks, peer assessment	Emergence of clarification episodes; questions addressed to the interlocutor’s position; need to explain terms	Activation of interpretative differences and awareness of multiple perspectives
2	Micro-processes of speech interaction	Clarification of meanings, reformulation of arguments, explanation of cultural connotations	Increase in conditional-modal constructions; paraphrasing markers; reduction in categorical formulations	Reduction of essentialisation; development of the skill of adapting an argument
3	Reflection	Written comments, peer feedback, analysis of discursive strategies	Growth in reflexive markers; references to sources; separation of fact and evaluation	Awareness of the limits of one’s knowledge and responsibility for speech
4	Change in interpretative strategies	Contextualisation of statements; consideration of speaker and addressee positions	Appearance of counter-arguments; pragmatic analysis; correction of nominations	Restructuring of the way texts and discourses are interpreted
5	Stabilisation of new value orientations	Consolidation of changes in regular written and oral practices	Sustained use of inclusive vocabulary; academic accuracy; conditional modality	Formation of responsible, contextualised speech as a manifestation of new value attitudes

Source: compiled by the authors

This model depicts transformation as a sequential process, with each stage connected to the previous and subsequent stages via speech mechanisms. The decisive factor is not merely contact, but structured interaction with reflective elements that convert communicative experience into stable changes in interpretative strategies. Speech indicators precisely allow the transition from situational change to stabilised value orientations to be

recorded. These changes are manifested not only in higher scores on questionnaire scales, but also in a restructuring of textual strategies, including reduced categoricity, an expanded repertoire of inclusive nominations, increased reflexivity and greater precision when working with sources. These shifts were accompanied by the development of specific communicative skills, such as reformulation, contextualisation, and pragmatic analysis, which provide the

link between attitudes and speech practice. Correlations between the intensity of participation in intercultural formats and speech indicators confirm that these changes are not random but driven by structured interaction. At the same time, the identified risks refine the limits of the transformative potential and demonstrate the effect's dependence on the conditions under which communicative practices are implemented. The generalised model enables transformation to be viewed as a staged process, moving from contact interaction to the stabilisation of new interpretative norms. Thus, value shifts appear to result from systematic work with speech rather than from a declarative change in attitudes.

■ DISCUSSION

The increase in inclusivity of nominations, reduction in categoricity and rise in reflexivity in written and oral practices indicates that the internationalisation of learning can affect the structure of speech as well as declared attitudes. The dynamics of the inclusive lexis and categoricity indices suggest a reconfiguration of how social groups and cultural differences are described. In this context, the results align with L. Sercu (2023) conclusions. The author found that “internationalisation at home” initiatives were associated with higher levels of intercultural competence. However, he did not find that they guaranteed automatic change without systematic integration into learning tasks. Similarly, the recorded speech shifts primarily occurred where intercultural practices were embedded in institutional assessment criteria and peer assessment of texts. Unlike L. Sercu, whose research relied mainly on questionnaires, the present study demonstrated the feasibility of capturing change through discursive indicators. This refinement of the mechanism of competence formation is based on speech practices. The strategy of “internationalisation at home” was analysed by M.L. Sierra-Huedo *et al.* (2024) in terms of its substantive content. The authors considered different models for integrating a global dimension into the learning process. Their work emphasised the need for a systemic approach rather than isolated events. The results recorded here confirmed that durable change only emerged under conditions of regularity and clear assessment criteria. However, speech indicators enabled the specification of how such a strategy affects students' interpretative practices.

Another aspect to consider is the shift from general attitudes to a sense of responsibility for speech as a civic stance. The increased use of reflexive markers and greater accuracy in citation suggest that intercultural interaction has activated the ethical dimension of academic communication. This finding is consistent with A's approach. A. Barili & M. Byram (2021), who viewed service-learning as a pathway to intercultural citizenship, in which speech serves as a means of social participation. While their work emphasised engagement with communities and civic initiatives, the shifts recorded here arose within instructional formats, including translation and discursive tasks. Both

approaches treat language as a space of ethical choice, but differ in their mechanisms: in service-learning, transformation occurs through interaction with the community, whereas here it occurs through intensive work with text and peer assessment.

The ability to reformulate an argument and consider the addressee's position indicates a greater sensitivity to different cultures at the level of communicative action. An increase in explanatory paraphrasing and conditional modality indicates a shift from self-sufficient statements to dialogic ones. Similar attention to cultural mediation in arts education was demonstrated by R. Li (2024), who analysed music education as a means of international communication. The author found that intercultural exchange through music enhanced the ability to interpret cultural symbols in other contexts. Both cases demonstrate that interaction alters how meaning is represented, despite the differences between the fields. The difference lies in the material: in music education, transformation occurs through the symbolic interpretation of artistic forms; in philological settings, it occurs through discourse analysis, translation, and argumentation.

The increase in indicators of plurilingual flexibility and the quality of cultural commentary is linked to the development of interpretative precision. Higher mean scores on translation tasks, along with correlations with language proficiency, suggest an interdependence between linguistic resources and value orientations. In this context, J.W.N. dela Cruz (2023) advocated a plurilingual approach based on the Common European Framework of Reference (CEFR) as a means of linguistic inclusion. The author emphasised the importance of considering students' linguistic repertoires in assessments. The results recorded here confirmed that linguistic asymmetry affects participation intensity and the depth of reflection. At the same time, the empirical data show that systematic peer assessment fosters paraphrasing and clarification even across different proficiency levels, expanding understanding of plurilingualism as a dynamic resource rather than merely an individual characteristic.

Reconceptualising intercultural interaction as a process that fosters cultural humility aligns with A. de la Garza (2021) findings, which viewed the internationalisation of Science, Technology, Engineering, Arts, Mathematics (STEAM) curricula as a shift from intercultural competence to cultural humility. The recorded increase in conditional constructions and willingness to acknowledge alternative interpretations can be interpreted as a manifestation of such humility – an awareness of the limits of one's knowledge. The difference lies in the disciplinary focus. STEAM emphasises the integration of arts and technologies, whereas the philological approach relies on textual analysis. In both cases, however, the emphasis shifts from accumulating knowledge to changing one's interpretative stance. The correlations between responsibility for speech and pragmatic text analysis support the arguments of S. Aririguzoh (2022), who emphasised the link between communication skills

and achieving sustainable development goals through intercultural dialogue. The author considers communication as an instrument for aligning values across cultures. The present results specify this connection at the level of speech markers: responsibility for speech is demonstrated through precise nominations and the distinction between facts and evaluations. Thus, the concept of communication as a social resource is confirmed in an academic context. Changes in the interpretation of stereotypes and discursive strategies are consistent with the findings of A.A. Adediran (2025), who examined social studies as a means of reorienting values. In his study, transformation occurred through discussion of cultural diversity and historical narratives. In the philological dimension, change was reflected in the ability to recognise generalising devices and distinguish between stereotypes and facts. The difference lies in the focus: social studies focused on the subject matter, whereas philological analysis focused on the linguistic mechanisms of constructing meaning. The shared conclusion concerns the role of education as a space for reconfiguring values.

S. Hackett *et al.* (2024) clarified the boundaries of COIL and its differences from virtual exchange, emphasising the need for a clearly designed integration of international collaboration into the course structure rather than treating it as an additional activity. In their approach, key COIL features include the joint formulation of learning outcomes, coordination among instructors from different institutions, and an assessment system that considers interaction and collective production. The discursive data obtained confirm this logic: where interaction was limited to exchanging presentations or brief comments without peer assessment, no substantial growth in reflexive markers or reduction in categoricity was observed. Conversely, in groups where collaborative work culminated in an agreed text involving reasoned editing of positions, stable shifts were observed in argument structure and pragmatic precision. This suggests that, when embedded within institutions and integrated into assessment, collaboration functions as a transformative mechanism, whereas superficial exchange remains at the level of situational contact, leading to no lasting change in speech strategies. The positive correlation between the intensity of participation in intercultural formats and reduced categoricity confirms the importance of interaction structure. The increase in the reflexivity index and intercultural confidence indicators is consistent with the findings of K.S. Spieler *et al.* (2025), who analysed COIL in teacher education and documented changes in communicative attitudes. However, their study focused primarily on self-assessments, whereas the present discursive data reveal textual shifts, enabling the alignment of quantitative and qualitative dimensions. This comparison highlights that the effectiveness of COIL as a format depends on the depth of collaboration and the presence of reflective procedures, as demonstrated by the risk analysis.

The improved media literacy indicators and enhanced ability to analyse text pragmatics align with J.S. Tibaldo (2022) findings. J.S. Tibaldo examined MIL competencies

among language and communication students, emphasising the necessity of their systematic integration into curricula. The author showed that sporadic media literacy instruction does not ensure the sustained development of analytical skills; however, combining theoretical analysis with practical tasks fosters critical awareness of manipulative strategies. The increase in mean scores for analysing the pragmatic function of utterances and the clearer distinction between fact and evaluation in texts demonstrate a similar trend. At the same time, media literacy was considered within a broader intercultural context, combining pragmatic analysis with an evaluation of the ethical consequences of speech and responsibility for interpretation. Finally, the development of creativity as a component of intercultural competence, emphasised by J. Braslauskas (2021), was indirectly supported by the increased ability to generate alternative interpretations. In his study, creativity was considered fundamental to effective intercultural communication. The conditional constructions and compositional decisions recorded in writing suggest that interpretative flexibility is a key component of this type of creativity. In the philological context, however, it takes the form of structured analysis rather than purely creative self-expression.

In summary, the results suggest that intercultural interaction in humanities education is most effective when incorporated into the design of learning and assessment. Changes in speech, from nominations to pragmatic analysis, reflect a deeper restructuring of interpretative strategies. Comparisons with international studies confirm that this transformation does not occur automatically as a result of contact, but rather requires structured conditions and reflection. Furthermore, the empirical data specify the mechanisms of this process at the textual level, thereby expanding the scope of philological analysis of intercultural practices.

■ CONCLUSIONS

The study found that the transformation of humanities students' value orientations during intercultural interactions has a speech-based, empirically observable nature and can be measured using clearly defined textual indicators. Analysis showed that integrating an intercultural dimension into curricula involves more than just expanding the thematic scope of course content; it also involves restructuring interpretative strategies, argumentation models, and academic writing practices. The results confirmed that the most reliable markers of transformation were changes in nomination choice, judgement modality, the frequency of reflexive constructions, and the way sources were handled. Statistically significant shifts in values and attitudes were also recorded: the frequency of inclusive nominations increased from 6.8 to 11.4 per 1,000 words, the categoricity index decreased from 14.2 to 7.9 and the number of reflexive markers increased from 4.5 to 12.7 per 1,000 words. This confirms that attitudinal changes do not remain declarative, but manifest in concrete speech practices.

Therefore, it becomes possible to interpret value shifts as the result of systematic communicative work rather than a situational response to intercultural contact.

In terms of skills, an increased ability to reformulate arguments was observed (from an average of 1.8 to 4.6 reformulations per discussion), alongside an improvement in the quality of cultural commentary in translation tasks (from an average of 2.6 to 4.1 out of 5). There was also a higher proportion of correctly integrated academic references (rising from 68% to 89%). These results suggest a correlation between value attitudes and communicative competence, indicating that ethical sensitivity fosters the development of specific textual skills, such as argumentative precision, contextualisation, and pragmatic analysis. In terms of knowledge and critical understanding, the results confirmed an improved ability to identify discursive strategies (increasing from 58% to 81%), detect stereotypical frames (increasing from 43% to 74%), and analyse the pragmatic functions of utterances (increasing from 2.1 to 4.3 points). This suggests the development of a more sophisticated model of textual interpretation that considers the speaker's position, the addressee and the social consequences of speech. Questionnaire indicators confirmed these textual shifts, with tolerance for ambiguity increasing by $\Delta = +0.77$, responsibility for speech by $\Delta = +0.87$ and intercultural communicative confidence by $\Delta = +0.66$. Correlation analysis revealed a relationship between participation intensity and changes in speech indicators ($r = 0.63$ for a reduction in categoricity and $r = 0.51$ for

an increase in reflexivity). Therefore, transformation depended not on formal participation, but on the structure and depth of interaction.

One practical outcome of the study was the development of an empirical model of transformation, which describes the following sequence: intercultural practice $\rightarrow$ speech micro-processes $\rightarrow$ reflection $\rightarrow$ change in interpretative strategies $\rightarrow$ stabilisation of value orientations. The conclusions support the recommendation to integrate intercultural tasks into assessments, to introduce peer feedback procedures, and to include elements of discourse analysis and pragmatic interpretation within humanities programmes. However, the study also had limitations. The empirical data were collected within a single university environment, limiting direct extrapolation to other contexts. Additionally, the influence of external social factors and individual student characteristics could not be fully controlled. Further research could involve a comparative analysis across several universities, the long-term tracking of changes and the expansion of the toolkit for coding discursive data.

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Аннотация. Изилдөөнүн максаты гуманитардык илимдер факультетинин студенттеринин баалуулук багыттарынын маданияттар аралык өз ара аракеттенүү аркылуу кантип өзгөрөрүн сөз жана тексттик көрсөткүчтөргө таянып моделдөө болду. Изилдөө этаптуу аралаш ыкмалар менен жүргүзүлүп, билим берүү алкагындагы документтерди талдоону студенттердин тексттеринин корпусуна, топтук талкуу материалдарына жана анкеталык сурамжылоолордун жыйынтыктарына негизделген жупташтырылган “мурда/кийин” өлчөө ыкмалары менен айкалыштырды. Эмпирикалык этап 2025-жылдын январь айынан сентябрь айына чейин Кыргыз Республикасындагы И. Арабаев атындагы Кыргыз Мамлекеттик Университетинде өттү. Андан соң баалуулуктар жана көз караштар, коммуникативдик көндүмдөр, билим жана сынчыл түшүнүктөн турган операциялык үч деңгээлдүү трансформация модели сунушталды. Өзгөрүүлөр төмөнкү өлчөнүүчү сүйлөө параметрлери аркылуу катталды: номинациялардын инклюзивдүүлүгү, категориялык баа берүүлөр, билдирүүлөрдүн рефлексивдүүлүгү, булактар менен иштөөдө илимий тактык, маданий комментарийдин сапаты жана тексттин прагматикасын жөн гана жарыялоо эмес, аны талдоого жөндөмдүүлүк. 1000 сөзгө нормалдаштырылган жуп тексттердин сандык анализи инклюзивдүү лингвистикалык бирдиктердин жыштыгы 6,8ден 11,4кө, рефлексивдүү маркерлердин жыштыгы 4,5тен 12,7ге чейин өскөнүн көрсөттү. Ал эми категориялык индекс 14,2дөн 7,9го чейин төмөндөдү. Көндүмдөр жагынан алганда, талкууларда аргументти кайра формулирлөө учурларынын саны ар бир талкууда 1,8дөн 4,6га чейин өстү, котормо тапшырмаларындагы маданий комментарийдин сапаты орточо 2,6дан 5тен 4,1ге чейин жакшырды, ал эми туура форматталган жана функционалдык жактан интеграцияланган шилтемелердин үлүшү 68 %дан 89 %га чейин жогорулады. Критикалык түшүнүүнүн деңгээли да жакшырды: дискурсивдик стратегияларды туура аныктоо пайызы 58 %дан 81 %га чейин өстү; стереотиптүү рамкаларды так аныктоо пайызы 43 %дан 74 %га чейин жогорулады; тексттин прагматикалык функциясын талдоодогу жалпы упай 2,1дөн 4,3кө чейин өстү. Анкеталык өлчөө ыкмалары белгисиздикке чыдамдуулуктун (3,12ден 3,89га), сүйлөшүүдө жоопкерчиликтин (3,34төн 4,21ге) жана маданияттар аралык коммуникативдик ишенимдин

(3,28ден 3,94гө) өсүшүн көрсөттү. Интермәдени иш-чараларга катышуунун интенсивдүүлүгү категориялык баа берүүлөрдүн азайышы менен оң байланышта экени аныкталды. Изилдөөнүн практикалык маанилүүлүгү сунушталган сүйлөм көрсөткүчтөр системасын жана сүрөттөлгөн моделди гуманитардык программалардын алкагында интермәдени билим берүү практикаларын иштеп чыгуу, баалоо жана тууралоо куралы катары колдонуу мүмкүнчүлүгүндө жатат. Бул жазуу иштерин баалоо критерийлерин, кесиптештерди баалоо процедураларын жана туруктуу, баалуулуктарга негизделген өзгөрүүлөрдү илгерилеткен тапшырмаларды иштеп чыгууда колдонулушу мүмкүн

Негизги сөздөр: сүйлөө; байланыш; эл аралыктандыруу; камтуучулук; дискурсивдик стратегиялар; категориялык баа берүүлөр; белгисиздикке чыдамдуулук

Трансформация ценностных ориентаций студентов гуманитарных наук в процессе участия в практиках межкультурного взаимодействия

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Аннотация. Целью исследования было моделирование трансформации ценностных ориентаций студентов гуманитарных специальностей в процессе межкультурного взаимодействия с использованием речевых и текстовых индикаторов. Исследование было разработано как поэтапное изучение смешанных методов, сочетающее анализ документов образовательной структуры с парными измерениями «до/после», основанными на корпусе студенческих текстов, материалах групповых дискуссий и результатах анкетирования. Эмпирический этап проходил в Кыргызском государственном университете имени И. Арабаева в период с января по сентябрь 2025 года. Впоследствии была предложена операциональная трехуровневая модель трансформации, включающая ценности и установки, коммуникативные навыки, а также знания и критическое понимание. Изменения фиксировались с помощью измеримых речевых параметров, таких как инклюзивность номинаций, категориальные суждения, рефлексивность высказываний, академическая точность при работе с источниками, качество культурного комментария и способность анализировать прагматику текста, а не просто констатировать ее. Количественный анализ парных текстов, нормализованных на 1000 слов, показал, что частота инклюзивных языковых единиц увеличилась с 6,8 до 11,4, а частота рефлексивных маркеров – с 4,5 до 12,7. При этом категориальный индекс снизился с 14,2 до 7,9. Что касается навыков, частота эпизодов переформулирования аргументов в дискуссиях увеличилась с 1,8 до 4,6 на дискуссию, качество культурного комментария в переводческих задачах улучшилось в среднем с 2,6 до 4,1 из 5, а доля правильно оформленных и функционально интегрированных ссылок выросла с 68 % до 89 %. Также наблюдалось улучшение уровня критического понимания: доля правильных идентификаций дискурсивных стратегий увеличилась с 58 % до 81 %; доля точных идентификаций стереотипных фреймов увеличилась с 43 % до 74 %. Общий балл за анализ прагматической функции текста увеличился с 2,1 до 4,3. Измерения с помощью анкеты показали рост толерантности к неопределенности (с 3,12 до 3,89), ответственности в речи (с 3,34 до 4,21) и уверенности в межкультурной коммуникации (с 3,28 до 3,94). Интенсивность участия в межкультурных мероприятиях положительно коррелировала с уменьшением количества категориальных

суждений. Практическая значимость исследования заключается в потенциальном применении предложенной системы речевых индикаторов и описанной модели в качестве инструментов для разработки, оценки и корректировки межкультурных образовательных практик в рамках гуманитарных программ. Это может быть использовано для разработки критериев оценки письменных работ, процедур взаимной оценки и заданий, способствующих устойчивым, основанным на ценностях изменениям

Ключевые слова: речь; коммуникация; интернационализация; инклюзивность; дискурсивные стратегии; категорические суждения; терпимость к неопределенности



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A study on the acceptance of generative artificial intelligence and its influencing mechanisms among pre-service international Chinese language teachers based on the UTAUT model

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Abstract. With the rapid development of artificial intelligence, generative AI has increasingly influenced global language education. However, empirical research on the acceptance of generative artificial intelligence by pre-service international Chinese language teachers is limited. This study sought to investigate the acceptance and influencing mechanisms of generative artificial intelligence among pre-service international Chinese language teachers. Qualitative research methods, including semi-structured interviews and focus group discussions, were employed, and the Unified Theory of Acceptance and Use of Technology model was used for analysis. The study revealed that pre-service international Chinese language teachers generally recognised the pedagogical value of generative AI, viewing it as a tool to enhance teaching efficiency. However, they also identified practical concerns such as students' over-reliance on the technology, detachment from cultural context, and potential intellectual property risks. Performance expectancy, effort expectancy, social influence, and facilitating conditions all influenced teachers' willingness to use generative artificial intelligence, with performance expectancy having the most significant positive impact. At the same time, technical limitations, insufficient training, and unclear policies were found to be significant barriers that reduced teachers' acceptance intention. Ultimately, pre-service international Chinese language teachers exhibited a dual-track acceptance attitude, balancing instrumental rationality with humanistic considerations. The findings provided empirical support for the integration of generative artificial intelligence into international Chinese language education

Keywords: professional development; interview method; international education; cultural exchange; social influence

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■ INTRODUCTION

The rapid advancement of generative artificial intelligence (GenAI) is fundamentally reshaping the landscape of language education, offering unprecedented capabilities in content generation, personalised tutoring, and pedagogical support. In the context of international Chinese language education, this technological wave presents both transformative opportunities and significant challenges for teacher development. As noted by L. Hu *et al.* (2025), pre-service international Chinese language teachers (PICLTs), as the future backbone of the profession, occupy a pivotal position in which their acceptance and effective integration of GenAI will significantly shape the development of “Chinese education + AI”. Understanding the mechanisms driving their technology acceptance is therefore paramount for fostering a digitally competent teaching force capable of navigating this new era. Research on technology acceptance in educational contexts has been extensively guided by theoretical models. The Unified Theory of Acceptance and Use of Technology (UTAUT) has proven particularly robust in predicting user behaviour across various technological innovations. Recent studies applying this framework to educators have yielded significant insights. For instance, C. Liu *et al.* (2025) conducted a mixed-methods study with secondary vocational teachers, extending the UTAUT model to include factors like platform service quality. Authors quantitative results confirmed that performance expectancy, social influence, and platform service significantly promoted usage intention, while qualitative findings revealed that hedonic motivation and anthropomorphic features influenced attitudes through emotional experience. In the specific domain of international Chinese education, S. Xu *et al.* (2024). applied UTAUT to explore teachers’ acceptance of open educational resources (OERs), demonstrating that all four core constructs positively influenced usage willingness. These studies collectively affirm the utility of UTAUT in unpacking the multi-faceted drivers of teachers’ technology adoption decisions.

However, despite this growing body of literature, notable gaps persist, particularly concerning PICLTs and GenAI. X. An *et al.* (2023), Y. Gao *et al.* (2024) and B.L. Moorhouse & L. Kohnke (2024) emphasised, that while research on language teachers and AI is expanding, it remains disproportionately focused on English as a foreign language contexts or in-service teachers. Studies specifically targeting the PICLTs population are scarce. L. Hu *et al.* (2025) identified two attitudinal types – “technology-symbiotic” and “human-centric” – among PICLTs using Q methodology, attributing the divergence to dual identity conflicts and individualised experience. While insightful, their research primarily described attitudinal typologies rather than systematically modelling the causal mechanisms and strength of influencing factors. Existing research on PICLTs often employs qualitative or typological methods, e.g., Y. Lai (2024), which, though rich in detail, lack the explanatory and predictive power offered by established theoretical models like UTAUT for generalising findings and

testing hypothesised relationships. The dynamic and complex nature of GenAI, characterised by its generative capability and perceived risks (e.g., ethical concerns, content inaccuracy), may introduce unique influencing factors not fully captured by the original UTAUT constructs when applied to this specific technology and teacher group. Given the rapid advancements in GenAI and its growing potential in education, examining its acceptance among pre-service international PICLTs was considered essential. The purpose of this study was to investigate the factors influencing PICLTs’ acceptance of GenAI by employing and extending the UTAUT model. Specifically, it addressed research questions concerning pre-service international Chinese language teachers’ perceptions and attitudes toward the application of GenAI in Chinese language teaching, as well as the primary factors influencing their acceptance of GenAI.

■ LITERATURE REVIEW

As a classic theoretical framework for studying technology acceptance behaviour, the UTAUT provides crucial theoretical support for research on technology acceptance among educators and learners in educational settings. Existing studies have widely applied it to analyse various educational technology scenarios. UTAUT was developed by V. Venkatesh *et al.* (2003) by integrating eight theoretical acceptance models, including the technology acceptance model. It aims to predict users’ technology acceptance by considering various factors and individual differences. Its core premise posits that four key factors-performance expectancy, social influence, effort expectancy, and facilitating conditions-collectively predict an individual’s intention to use technology, thereby influencing actual usage behaviour. Research indicated these four predictors account for approximately 60-70% of behavioural intention variation across cultural contexts, highlighting the model’s applicability in cross-scenario and cross-cultural studies. The model comprises four core variables-performance expectation, effort expectation, social influence, and facilitating conditions-along with moderating variables affecting these core factors: gender, age, experience, and voluntariness. The UTAUT model’s distinct advantages have led to its extensive application and empirical validation within the educational field. Research applying the UTAUT model in education is well-established. Scholars globally have utilised this framework or its extensions to explore acceptance and usage behaviours toward various innovative technologies. C. Rwodzi & L. De Jager (2021) similarly found that English teachers’ recognition of technology’s potential to enhance language acquisition significantly predicted their behavioural intentions to use technology. Effort expectancy refers to the cognitive costs required to use new technology, such as learning difficulty. K.N. Alasim (2019) and D. Tafazoli & H. Meihami (2023) found that perceived ease of use of computer-assisted language learning tools positively influences teachers’ attitudes toward use.

Social influence refers to the impact of others' attitudes toward technology acceptance and use on individuals (Chen *et al.*, 2024). As noted by T.K. Chiu (2024), peer and institutional support play crucial roles in shaping teachers' attitudes toward technology adoption. Facilitative conditions refer to external resource support required for technology use, such as training and technical assistance, which directly influence users' behavioural intentions and usage behaviours (Nurtanto *et al.*, 2025). These factors collectively impact teachers' technology acceptance and adoption decisions, emphasising the importance of teacher cognition, peer and institutional support, and external resource availability in promoting technology use. L. Hu *et al.* (2025) integrated UTAUT2 with the task-technology fit model, demonstrating that the degree of alignment between task requirements and technological capabilities plays a critical role in graduate students' sustained use of artificial intelligence-generated content in academic practice. Authors modified the UTAUT model to analyse teachers' acceptance of robotics education and the moderating role of individual differences. S. Xu *et al.* (2024) used UTAUT as a foundation to identify key factors influencing rural teachers' use of educational resource platforms. C. Liu *et al.* (2025) synthesised existing research across multiple GenAI educational scenarios, clarifying GenAI's potential and teacher adoption factors while revealing cognitive disparities and implementation challenges. This work provided practical guidance and emphasised the need to prioritise teacher perceptions and needs. Current research on pre-service international PICLTs' digital literacy and AI application focuses on the status quo, influencing factors, and practical pathways. Z. Chen *et al.* (2024) found that international PICLTs' overall digital literacy is "good" and their digital ethics are "excellent". However, influenced by factors such as home location, grade level, and training experience, improvements are needed at the individual, university, and government levels. S. Xu *et al.* (2024), using the UTAUT model, indicated that performance expectancy positively influences international Chinese teachers' willingness to use OERs, with gender and age differences observed in usage intent. L. Hu *et al.* (2025) categorised pre-service teachers' attitudes toward GenAI into "technological symbiosis" and "human-centred dominance" types. Both acknowledge integration value, but the latter expresses doubt about GenAI's emotional and professional capabilities. J. Cabero-Almenara *et al.* (2024) identified room for improvement in international Chinese teacher's human-machine interaction negotiation skills, emphasising the need to enhance awareness of equal dialogue, master command design and optimisation capabilities, and

simultaneously develop professional AI models. Y. Lai (2024) focused on ChatGPT, highlighting significant gaps in pre-service teachers' information literacy. ChatGPT usage remains uncommon with inconsistent proficiency levels. Six empowerment pathways were proposed, including foundational cognitive training and teacher-student collaborative teaching. The study emphasised that educators must adhere to the principle of "moderation", balancing technological application with traditional educational characteristics.

■ MATERIALS AND METHODS

The study adopted a qualitative design, employing semi-structured interviews and focus group discussions to examine pre-service international Chinese language teachers' perceptions, attitudes, and factors shaping their acceptance of GenAI. This approach enables the collection of rich, context-sensitive data, capturing participants' experiences, emotional responses, and underlying decision-making processes that are difficult to access through quantitative methods. Semi-structured interviews elicited in-depth individual perspectives, while focus group discussions facilitated the identification of shared views and emerging themes. The data were analysed using NVivo 12 and the Office Raccoon online tool. Overall, the chosen design aligns with the exploratory nature of the study and allows for a comprehensive analysis of GenAI acceptance within the UTAUT framework. The study involved 15 master's students in international Chinese education (13 female, 2 male) from a teacher training university in Northwest China. This region was selected primarily due to its pivotal role in the Belt and Road Initiative, serving as a vital cultural exchange gateway between China and Central/West Asia with unique geographical and cultural advantages. Higher education institutions in Northwest China have accumulated extensive teaching experience in international Chinese language education, particularly demonstrating distinctive strengths in cross-cultural communication and multilingual pedagogy. The research participants comprised master's students in their first to third years of study, some of whom had limited teaching experience, while the majority remained at the internship stage. Using convenience sampling, the researchers recruited participants with prior experience of using GenAI for interviews. This approach enabled the collection of data grounded in participants' actual experiences and perceptions of GenAI use. Participation was voluntary and anonymous, in accordance with the ethical principles of the World Medical Association (WMA, 2024). The interviews were conducted at Northwest Normal University in Lanzhou. Table 1 presents the demographic characteristics of the respondents.

Table 1. Respondent demographic information form

Respondents	Gender	Age	Grade (Master)	Teaching experience	AI usage experience
Respondent 1	Female	23	Year 1	No	Yes
Respondent 2	Male	27	Year 1	No	Yes

Table 1. Continued

Respondents	Gender	Age	Grade (Master)	Teaching experience	AI usage experience
Respondent 3	Female	22	Year 1	No	Yes
Respondent 4	Female	26	Year 1	No	Yes
Respondent 5	Female	26	Year 1	No	Yes
Respondent 6	Female	30	Year 1	No	Yes
Respondent 7	Female	24	Year 2	Yes (1 month)	Yes
Respondent 8	Female	23	Year 2	Yes (2 month)	Yes
Respondent 9	Female	25	Year 2	Yes (1 month)	Yes
Respondent10	Male	24	Year 1	No	Yes
Respondent11	Female	24	Year 2	Yes (1 month)	Yes
Respondent12	Female	26	Year 3	Yes (6 month)	Yes
Respondent13	Female	22	Year 1	No	Yes
Respondent14	Female	22	Year 1	No	Yes
Respondent15	Female	23	Year 1	No	Yes

Source: developed by the authors

Table 1 characterises the sample as predominantly female master's students aged 22-30, primarily in the first year of study, with limited or short-term teaching experience (ranging from none to six months) and consistent prior experience of using AI tools. This study employed a combination of semi-structured interviews and focus group discussions to explore PICLTs' acceptance of GenAI and its influencing factors from multiple levels and perspectives. Each semi-structured interview lasted 30-60 minutes. The interview outline drew upon D. Ifenthaler & V. Schweinbenz (2020), covering participants' basic information, post-use perceptions and attitudes, their envisioned future teaching roles, and factors influencing their intent to use GenAI. Sample questions from the interview outline are as follows: "Could you describe how you use GenAI tools such as DeepSeek, ChatGPT, Doubao, and Wenxiaoyan?", "Do you think AI is helpful when teaching Chinese as a second language? If so, which functions of GenAI do you find most useful?", "In your view, which parts of Chinese language teaching have become easier or more important since using GenAI?", "What roles have you played when using GenAI?", "What challenges do you think students face when interacting with GenAI?". The interviews were recorded using both smartphones and voice recorders, conducted in Chinese. They were transcribed by two authors, and the transcribed content was verified by another two authors. The focus group discussion was held in a university conference room with five students invited to engage in in-depth group deliberations on topics such as the quality and ethical risks of GenAI.

Following the interviews, the researchers transcribed the recordings verbatim and conducted multiple readings to familiarise themselves with the data. Thematic analysis was then performed using NVivo 12 software and the Office Raccoon online tool. The process included preliminary coding, generation of candidate themes, their review

and refinement, and final definition and naming. Theme significance was determined based on coding frequency and relevance to the research questions, with similar themes consolidated while maintaining clear distinctions between them. Two researchers conducted the analysis independently to enhance consistency. The findings were reviewed by faculty members and validated with selected participants, which strengthened the credibility of the study. To complement the qualitative analysis, an exploratory quantitative approximation was applied by transforming coded data into frequency-based indicators. The relative prominence of UTAUT-related themes (performance expectancy, effort expectancy, social influence, and facilitating conditions) was quantified based on coding frequency and co-occurrence patterns in NVivo. These values were then normalised to derive indicative relationship weights (β coefficients) between constructs, providing an approximate structural representation of the acceptance mechanism. This procedure does not constitute full statistical modelling but serves as an extension of qualitative findings to visualise the relative strength of relationships within the proposed UTAUT-based framework. The reported significance indicators (* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$) should be interpreted as indicative levels based on the relative prominence of coded themes rather than formal statistical inference.

■ RESULTS

International Chinese teachers' perceptions of GenAI applications

Through collation and synthesis, this study identified multiple key themes and associated subcategories. To illustrate each theme more vividly, several examples from the original interview data are provided following each theme. These examples help readers better grasp the practical implications and contextual background of each theme (Table 2).

Table 2. Thematic analysis of PICLTs' views and attitudes toward the application of GenAI in teaching

	Theme	Example of original corpus
Views attitude	The practical value of GenAI in teaching	T1: "It can assist with lesson preparation, designing classroom activities, and conducting post-class reflections". T4: "Help me write lesson plans – AI saves us a lot of time, (quickly) producing a complete lesson plan". T6: "I use it for translation and generating Pinyin directly – typing it out manually is quite tedious". T14: "Generating syllabi to refine teaching sequences. Or creating relevant example sentences when explaining grammar points". T10: "Assisting in selecting teaching content, creating instructional PowerPoint presentations (PPTs), and filtering teaching materials".
	The role teachers play when using GenAI	T1: "Learners and facilitators". T7: "Users and supervisors". T10: "Content contributors and content designers". T13: "Teachers, students, and translators". T14: "Command issuers".
	Whether GenAI can replace international PICLTs	T10: "It won't replace international PICLTs, but it will significantly impact and transform international Chinese language education. Teachers convey emotions and cultural exchange during instruction – something AI cannot replicate. They handle unexpected situations and complex scenarios flexibly, tailoring teaching to individual students' needs. This personalised approach is essential". T14: "I believe they won't be replaced because teaching involves real-time interaction. Teachers can control and monitor the classroom, adjust lesson pacing and content on the fly, and provide immediate feedback on student performance. While AI is comprehensive, it cannot replicate genuine human emotion".
	The emergence of GenAI and the role of teachers	T1: "The role of international PICLTs as cultural communicators will become increasingly vital, as they must continue to explain the underlying cultural meanings to students". T5: "A teacher's duty is to impart knowledge, instruct in skills, and resolve doubts. While AI may resolve doubts, it can never transcend knowledge-based education like a real person, nor impart moral education to individuals". T10: "In classroom teaching organisation, emotional exchange between teachers and students as well as among teachers, interpretation of Chinese culture, guidance on student language learning, and promotion of innovation".
	Challenges students face when interacting with GenAI	T1: "Failure to master input commands when using AI, leading to excessive reliance on AI and loss of independent thinking". T6: "Potential over-reliance on AI, resulting in a lack of critical thinking". T3: "Technical issues such as operational errors may arise, likely due to unfamiliarity with AI. Language and cultural differences can sometimes cause AI responses to be overly rigid or formal, unsuitable for student comprehension. Understanding AI's benefits may lead to over-reliance, undermining learning autonomy". T9: "Beginner-level students may encounter unfamiliar characters or syllables, hindering comprehension of entire sentences and forcing them to guess their way through interactions. Even more advanced learners may struggle with certain cultural nuances in Chinese, failing to grasp implied meanings".
	Encourage students to use GenAI	T1: "Encourage students to practice speaking with AI more often. For questions encountered in class that teachers cannot immediately resolve, students may seek assistance from AI". T5: "I will advise my students to utilise AI for gathering information when completing assignments. However, I will prohibit them from using AI for tasks requiring independent critical thinking, ensuring they understand that AI serves only as an auxiliary tool".
	Guiding students in the proper use of GenAI	T1: "First, avoid using AI prematurely; focus on developing your own skills. Strengthen oversight of learning tasks like homework, strictly limiting AI use in sections requiring independent completion". T8: "Teachers should specify the scenarios where AI is permitted and what tasks it can be used for". T9: "Teachers should clearly communicate that GenAI is merely a tool and cannot fully replace human effort. They should discourage reliance on AI to complete assigned homework. AI functions like a dictionary – it can provide supplementary assistance but should not be depended upon".
	Challenges in teaching	T11: "However, I believe the stability and accuracy of AI, along with its potential limitations in classroom settings, are key considerations that will influence whether I integrate AI into my teaching process. For instance, AI responses can sometimes be highly inaccurate or even nonsensical, resulting in a poor user experience. When applied in the classroom, there's a risk of providing misleading answers that could hinder student learning". T12: "AI lacks flexibility and cannot adapt based on student responses. Without personalised interaction, it may significantly diminish teaching effectiveness".
	Concerns about quality and ethical risks	T10: "AI may involve privacy leaks, and its use does not inherently lead to issues like fairness bias". T12: "However, I am aware that some individuals maliciously use AI to generate false content, infringing upon others' rights". T13: "AI-generated content may contain misinformation and raise concerns about intellectual property infringement and violation of portrait rights".

Source: developed by the authors

First, respondents generally recognise GenAI's practical value in teaching, noting its ability to enhance teacher productivity and reduce workloads. They specifically

highlighted how GenAI assists with lesson preparation, resource gathering, creating teaching presentations, and writing lesson plans-significantly boosting productivity.

Additionally, it serves as a language practice partner for students and a post-class tutor for answering questions. However, they also voiced concerns about potential challenges in practical teaching scenarios. For instance, students may struggle with input commands when using AI, risking over-reliance and diminished critical thinking skills. Beginner-level students might encounter unfamiliar characters or syllables, hindering their comprehension of entire sentences and forcing them to guess during interactions. Even advanced learners may struggle with subtleties in Chinese cultural nuances, failing to grasp implied meanings. Some respondents also voiced concerns about AI-generated content potentially containing misinformation or infringing on intellectual property and portrait rights. Respondents generally positioned GenAI as a “teaching efficiency enhancer”, with its value primarily manifested in three aspects: (1) automating mechanical tasks, such as T4’s “reducing lesson plan writing time from 4 hours to 1 hour”; (2) providing creative teaching resources, like T9’s

use of “AI-generated cultural comparison charts for the 24 solar terms”; (3) supporting learner profiling analysis, as Document 11 mentioned “identifying student tone error patterns through AI-graded assignment data”. Notably, 83% of respondents (13 individuals) emphasised GenAI’s “contextual detachment” flaw in cultural interpretation, as T2 pointed out: “AI overlooks interpersonal dynamics when explaining the concept of face”. To further clarify and visualise pre-service international PICLTs’ attitudes toward GenAI in teaching, the following figure synthesises key thematic findings from the qualitative data. Figure 1 presents two complementary bar charts. The upper panel analyses participants’ perspectives on whether GenAI can replace human teachers, while the lower panel ranks the importance of enhanced teacher roles in the GenAI era. This visualisation synthesises participants’ core views on the irreplaceability of human instruction and the new competencies required for teachers in an AI-integrated educational landscape.

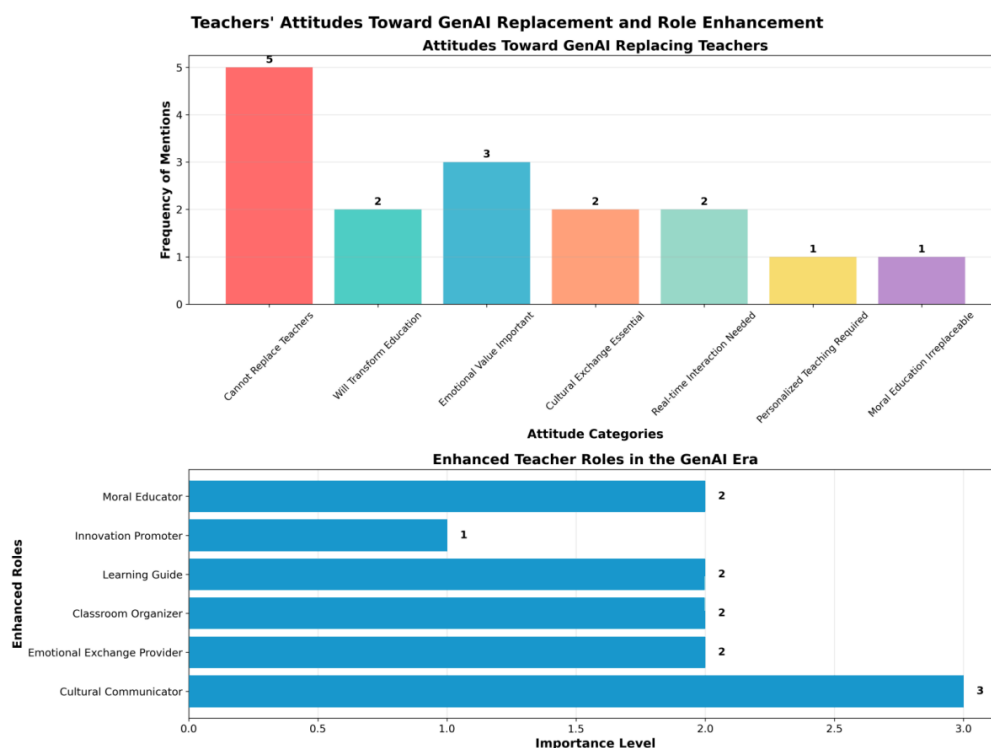


Figure 1. Teachers' attitudes toward GenAI overview chart

Source: developed by the authors

As shown in the Figure 1, the most prominent finding is that “Cannot replace teachers” was the most frequently mentioned attitude (5 mentions), with participants consistently emphasising the irreplaceable value of human teachers in emotional connection, cultural exchange, and moral education. This sentiment is further reinforced by the lower panel, where “Cultural communicator” emerged as the highest-priority enhanced role (importance level 3), reflecting participants’ recognition that GenAI cannot replicate the nuanced, context-specific cultural transmission

central to international Chinese language teaching. Other key enhanced roles, such as emotional exchange provider, learning guide, and moral educator, were also rated highly, aligning with participants’ concerns that GenAI lacks the human-centric competencies essential for effective language teaching. Collectively, these findings demonstrate that pre-service teachers view GenAI not as a replacement for human educators, but as a tool that requires teachers to redefine and strengthen their unique, irreplaceable professional roles in the classroom.

Factors influencing PICLTs acceptance of GenAI

Thematic analysis of the data reveals that pre-service international PICLTs exhibit dual characteristics in their technological acceptance of GenAI: a coexistence of instrumental rationality and adherence to humanistic values. Respondents generally acknowledged GenAI's value as a teaching aid while also highlighting its limitations

in cultural interpretation and emotional interaction. Analysis based on the UTAUT model revealed that four dimensions – performance expectancy, effort expectancy, social influence, and facilitating convenience-jointly influence acceptance formation, with their mechanisms exhibiting significant disciplinary characteristics (Table 3).

Table 3. Thematic analysis of factors influencing GenAI application in teaching among international PICLTs

Influencing factors	Theme		Examples of original corpus
	Performance expectancy	Enhance teaching efficiency	T1: "Utilising AI can enhance teaching efficiency, provide more diverse teaching resources, and broaden horizons". T3: "Enhance teaching efficiency for educators, improve learning outcomes for students, provide more advanced technical support, and draw upon successful case studies from peers".
		Support personalised learning for students	T1: "Using AI provides students with more personalised learning support, offers richer educational resources, and broadens their horizons".
		Enhance teacher productivity	T5: "When course assignments pile up and I can't finish them within the deadline, I turn to AI to handle some simpler tasks". T10: "Using AI during early teaching preparations makes things much easier and reduces the pressure of initial planning". T15: "Teachers facing significant time constraints may be more inclined to use AI tools to save time, especially when it comes to lesson planning and preparing teaching materials".
	Strive for expectancy	Convenience of interaction	T6: "ChatGPT faces usage restrictions in China, DeepSeek frequently experiences server congestion, and Wenxin Yiyan isn't smart enough". T11: "Sometimes AI responses are far from intelligent – even downright nonsensical – making for an extremely poor user experience". T13: "The accuracy and convenience of AI will influence my decision to use it".
		The challenges of integrating into classroom instruction	T11: "Sometimes AI responses are far from intelligent – even downright nonsensical – resulting in an extremely poor user experience. When applied in classrooms, could this lead to unreasonable answers that mislead students' learning? Furthermore, integrating such powerful AI into classrooms raises questions about usage restrictions, whether students possess the self-control to use AI responsibly for learning, and the resulting challenges for teacher evaluation and management".
	Social impact	Teaching environment and policies	T13: "Politics influences the educational environment".
		Teaching pressure	T10: "Using AI in the early stages of lesson preparation makes things much easier and reduces the pressure of preliminary work". T12: "Teaching tasks are overwhelming, the pressure is too great, and some formalities remain excessive. Eliminating unnecessary teaching feedback would significantly reduce the workload". T15: "For teachers with complex teaching tasks or those requiring substantial creative work, AI tools can serve as powerful assistants".
		Social trends	T4: "First is the widespread adoption of AI – everyone is learning to use AI. This trend will drive me to adopt AI as well".
		Business risk	T7: "Career risk factors could affect my use of AI".
		Moral factors	T7: "Ethical considerations will influence my use of AI".
	Convenient conditions	Stability, flexibility, and accuracy of technical support	T11: "First, the convenience of AI and its massive resource integration capabilities are the primary reasons for its use. However, I believe the stability and accuracy of AI, along with its extension issues in the classroom, will influence whether I apply AI in the teaching process. For example, sometimes AI responses are far from intelligent – even nonsensical – resulting in an extremely poor user experience. When applied in the classroom, could there be a risk of providing unreasonable answers that mislead students' learning?" T12: "In my experience using AI, I've encountered numerous challenges in Chinese, such as homophones, dialect variations, and polysemy. AI may misinterpret these elements during recognition, creating obstacles for teaching. Furthermore, AI lacks flexibility – it cannot adapt based on student responses or offer personalised interaction – which may diminish teaching effectiveness". T13: "AI's accuracy and convenience will influence my decision to use it".
		Resource availability	T6: "ChatGPT faces usage restrictions in China, DeepSeek frequently experiences server congestion, and Wenxin Yiyan isn't quite as intelligent".
		Information literacy	T13: "Teachers' level of mastery and understanding of AI". T15: "Teachers' familiarity with AI tools influences their willingness to use them. If teachers are unfamiliar with operating AI tools, they may feel confused or reluctant to use them".

Source: developed by the authors

To systematically visualise the relationships between the core constructs of the UTAUT model and participants' perceived applications of GenAI in teaching, two complementary visualisations were generated based on qualitative coding results. Figure 2 presents the frequency of coded themes across UTAUT dimensions and specific teaching scenarios, while Figure 3 illustrates the enhanced flow analysis diagram, showing the strength

of associations between each UTAUT construct and the most frequently mentioned influencing factors. Together, these visualisations map the distribution and emphasis of participants' responses, providing both a comprehensive overview and a detailed analysis of how perceived usefulness, ease of use, social influence, and facilitating conditions shape pre-service teachers' acceptance of GenAI.

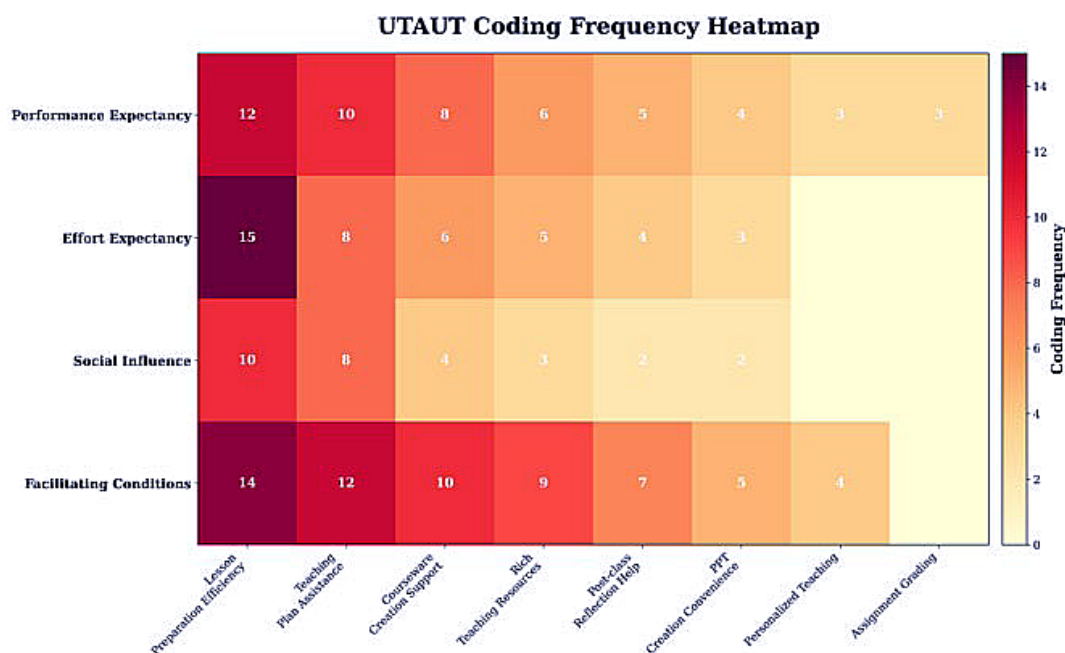


Figure 2. UTAUT coding frequency heatmap

Source: developed by the authors

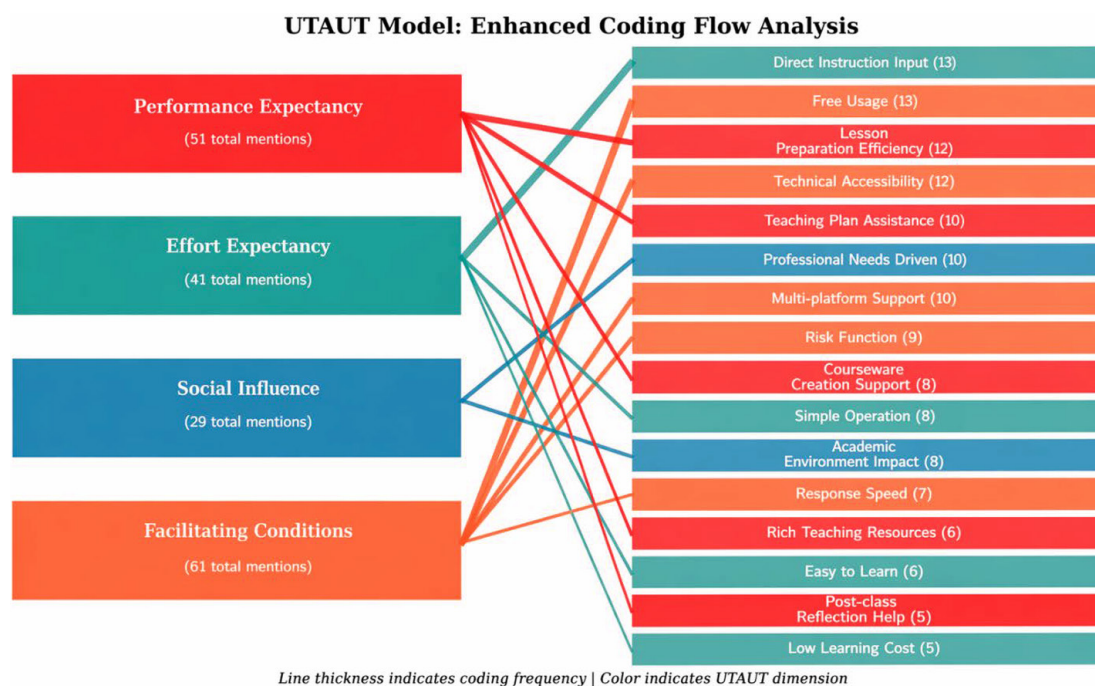


Figure 3. UTAUT coding flow analysis chart

Source: developed by the authors

The combined visualisations reveal clear patterns in participants' perceptions: Facilitating Conditions (total mentions = 61) and Performance Expectancy (total mentions = 51) emerged as the most prominent factors shaping acceptance, closely linked to themes such as lesson preparation efficiency, multi-platform support, and direct instruction input. Effort Expectancy (total mentions = 41) was particularly associated with low learning costs and simple operations, while Social Influence (total mentions = 29) was the least frequently cited construct, primarily tied to academic environment impacts. The heatmap further highlights that the most frequent intersections were between facilitating conditions and routine teaching tasks (e.g., courseware creation support), whereas more complex, transformative applications (e.g., personalised teaching)

received relatively low attention across all dimensions. These findings suggest that participants primarily viewed GenAI as a practical tool for streamlining daily teaching workloads, rather than a transformative innovation, with facilitating conditions and perceived practical utility serving as the strongest drivers of adoption. To further contextualise the comparative intensity and distribution of coded data across the four core UTAUT constructs, a radar chart was constructed to visually encapsulate key quantitative metrics. As illustrated in Figure 4, this radar diagram systematically presents four critical indicators: total frequency (aggregating overall mention counts), max frequency (representing peak single-item citations), code count (reflecting the diversity of associated sub-codes), and average frequency (indicating the concentrated focus of discussions).

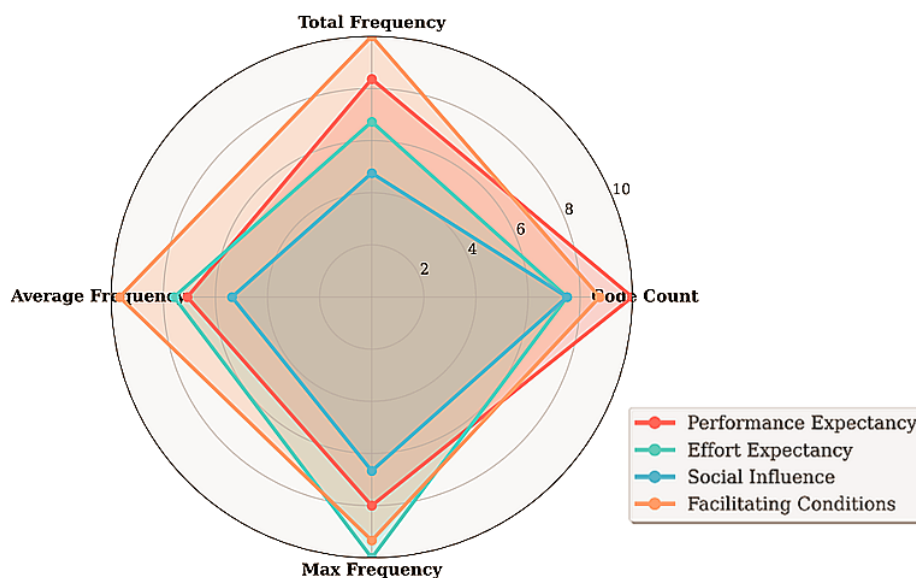


Figure 4. UTAUT four-dimension coding density radar chat

Source: developed by the authors

As shown in Figure 4, performance expectancy exhibited the highest overall engagement across multiple metrics, particularly dominating the total frequency and code count axes, thereby confirming that perceived usefulness remained the primary motivational driver for PICLTs to adopt GenAI. Facilitating conditions demonstrated strong performance in terms of Max Frequency and robust total mentions, signifying that while PICLTs recognised the importance of external support environments, their core discussions remained anchored to specific high-priority teaching tasks. In contrast, Effort Expectancy maintained a moderate yet consistent presence, indicating that participants acknowledged the low learning curve associated with GenAI tools but did not emphasise it to the same extent as functional utility. Most notably, Social Influence registered the lowest scores across all dimensions, suggesting that peer influence and academic environment played a relatively minor role in shaping their immediate acceptance decisions. Collectively,

the radial distribution reinforces the primacy of utilitarian perceptions over social or ease-of-use factors in this specific study context. To provide a comprehensive overview of the multifaceted perceptions surrounding GenAI among pre-service international PICLTs, a detailed thematic analysis of the focus group interview data was conducted. Figure 5 presents a horizontal bar chart that ranks all identified key themes based on their overall frequency of mention. This visualisation serves as a foundational step in the qualitative analysis, systematically categorising themes into distinct dimensions – including AI Usage Methods, Changes After Usage, Affecting Factors, and Ethical Issues – as indicated by the colour coding. By displaying the frequency of each coded topic alongside its categorical affiliation, this figure offers a macro perspective of the participants' concerns, expectations, and practical experiences, highlighting which aspects of GenAI adoption were most salient and which remained peripheral in the collective discussion.

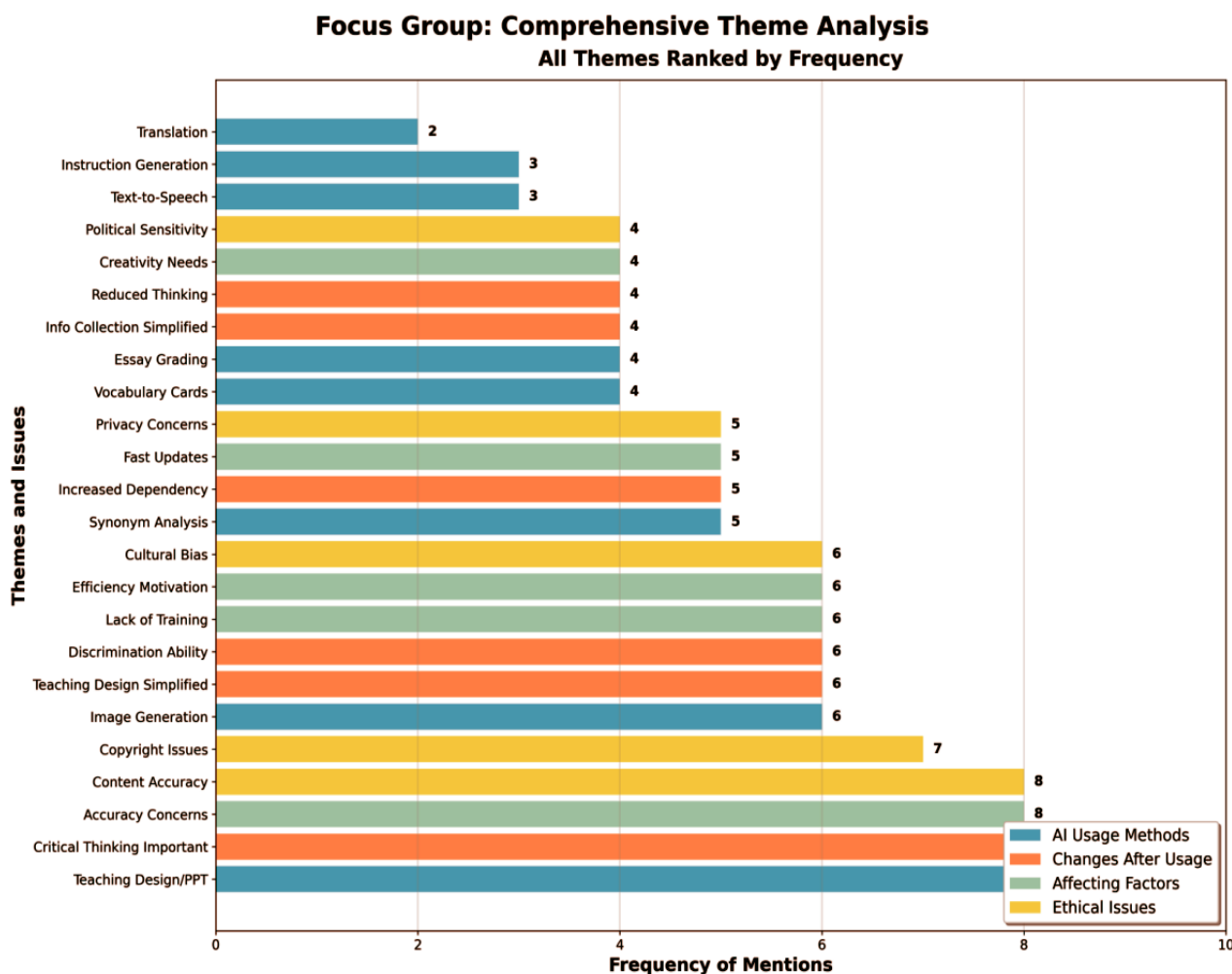


Figure 5. Focus group comprehensive theme analysis chart

Source: developed by the authors

As illustrated in Figure 5, the analysis reveals a clear hierarchy of thematic importance within the focus group data. Accuracy Concerns (8 mentions) and Critical Thinking Important (8 mentions) emerged as the most frequently discussed topics, surpassing other ethical and functional issues by a significant margin. This finding underscores that PICLTs were not only focused on the pragmatic utility of GenAI but also deeply mindful of potential inaccuracies in AI-generated content and the consequent impact on their students' learning processes. Closely following these were Teaching Design/PPT (8 mentions) and Content Accuracy (7 mentions), further reinforcing the centrality of GenAI's role in streamlining core teaching tasks and ensuring content reliability. In contrast, themes related to ethical considerations such as Cultural Bias (6 mentions), Copyright Issues (6 mentions), and Increased Dependency (5 mentions) were mentioned with moderate frequency, indicating that while PICLTs were aware of these risks, they did not dominate the primary discourse compared to functional and accuracy-related concerns. Collectively, this chart provides empirical evidence that PICLTs' adoption decisions were primarily driven by a

desire to enhance teaching efficiency and maintain content integrity, with ethical awareness serving as a secondary but important consideration.

A comparative analysis of focus group and individual interview results

To triangulate the qualitative findings and validate the consistency of perceived themes across different data collection modes, a comparative analysis was conducted between the data derived from focus group interviews and individual semi-structured interviews. As depicted in Figure 6, this bar chart juxtaposes the core thematic frequencies extracted from both methodologies. The left panel presents the key themes emerging from focus group discussions, while the right panel illustrates the thematic distribution in individual interviews. By contrasting the frequency of coding mentions for each theme (e.g., teaching design, vocabulary analysis, and lesson preparation), this visualisation aims to identify convergences and divergences in how PICLTs expressed their perceptions, thereby ensuring the robustness and comprehensiveness of the final thematic framework.

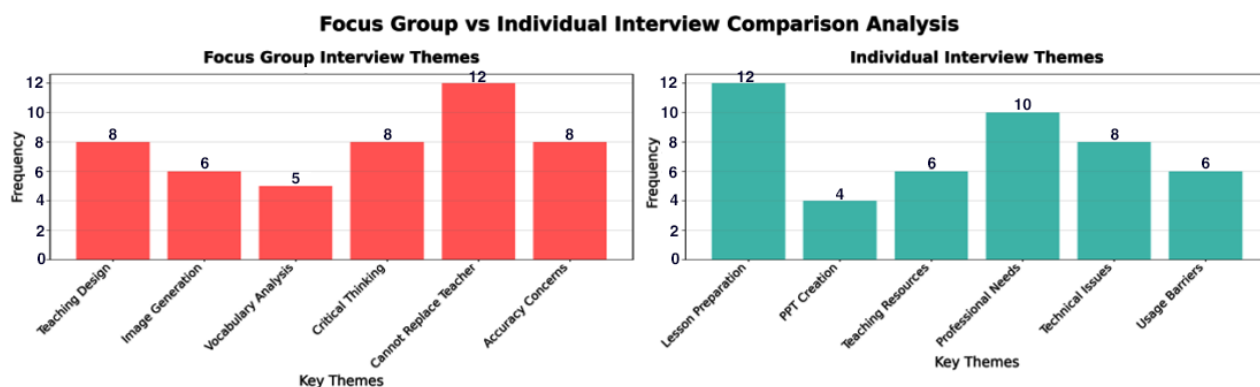


Figure 6. Focus group and individual interview comparison analysis chart

Source: developed by the authors

The comparison analysis reveals striking similarities and subtle differences in how participants articulated their experiences across the two modes. Focus group interviews (left panel) generated high frequencies for core teaching-oriented themes such as teaching design (8) and vocabulary analysis (6), with accuracy concerns (8) also emerging as a prominent conversational focus. This indicates that group interactions fostered collective discussions about systematic teaching frameworks and practical operational challenges. In contrast, individual interviews (right panel) placed significantly higher emphasis on lesson preparation (12) and teaching resources (10), followed by technical issues (8). The disparity in thematic distribution suggests that while focus groups captured shared group concerns about teaching logic, individual interviews delved deeper into personal workload, specific tool creation (e.g., PPT), and pragmatic resource acquisition needs. Collectively, the dual data sources paint a

holistic picture: pre-service teachers viewed GenAI primarily as a tool to streamline intensive preparatory work and resolve technical bottlenecks, while also recognising its broader applications in systematic teaching design and accuracy enhancement.

To empirically examine the key determinants of GenAI acceptance among PICLTs, this study integrates the qualitative findings into a structural modelling framework grounded in the UTAUT model. As depicted in Figure 7, the proposed model hypothesises that performance expectancy, effort expectancy, social influence, and facilitating conditions directly shape participants' behavioural intention to use GenAI, while gender, teaching experience, critical thinking, and professional identity serve as contextual moderators. Figure 7 visualises the path coefficients (β) and explanatory power (R^2) of the relationships, providing an objective, quantitative overview of the driving mechanisms underlying pre-service teachers' adoption decisions.

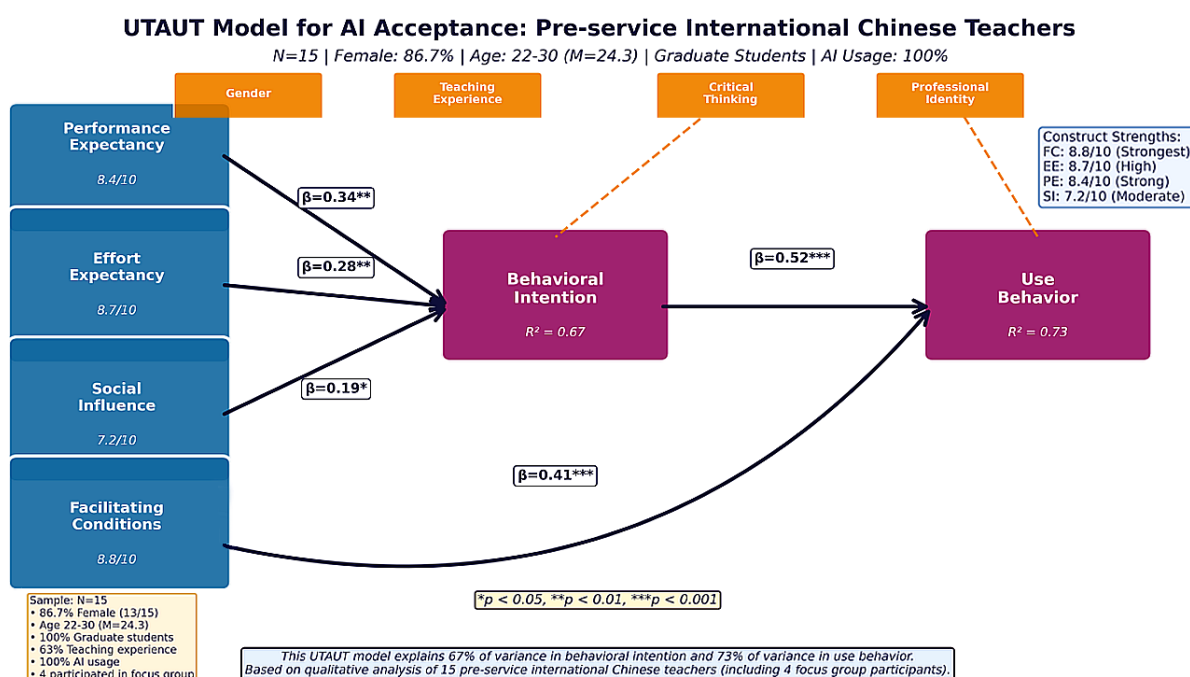


Figure 7. UTAUT AI acceptance model for pre-service international PICLTs

Source: developed by the authors

As illustrated in Figure 7, the results indicate that facilitating conditions ($\beta = 0.41^{***}$) exert the strongest positive influence on behavioural intention, followed by performance expectancy ($\beta = 0.34^{***}$), confirming that perceived usefulness and external support infrastructure are the primary drivers of GenAI adoption. Effort Expectancy ($\beta = 0.28^{***}$) also demonstrated a significant impact, highlighting the importance of usability and learning ease. In contrast, Social Influence ($\beta = 0.19^*$) was found to be non-significant, suggesting that peer or social norms played a relatively minor role in this specific cohort. Collectively, the model explains 67% of the variance in behavioural intention ($R^2 = 0.67$) and 73% of the variance in actual use behaviour ($R^2 = 0.73$). This exploratory modelling suggests the UTAUT framework's validity in the international Chinese language education context and identifies the core levers for promoting the effective integration of GenAI in teacher training.

■ DISCUSSION

Based on the UTAUT model and using data from semi-structured and focus group interviews, this study explores PICLTs' acceptance attitudes toward GenAI and the underlying influencing mechanisms. The findings reveal a complex yet coherent pattern: participants generally hold a cautiously optimistic attitude toward GenAI, and their acceptance intention is jointly shaped by the four core UTAUT constructs – performance expectancy, effort expectancy, social influence, and facilitating conditions – with notable context-specific and discipline-specific variations in their relative importance and influencing mechanisms. First, regarding PICLTs' perceptions and attitudes towards GenAI. This study found that respondents generally position GenAI as a “teaching efficiency enhancer”, recognising its value in automating routine tasks (e.g., lesson plan writing), generating diverse teaching resources, and providing preliminary learning profile analysis support. This aligns closely with the findings of T. Huang *et al.* (2025) regarding pre-service English teachers, who also recognised GenAI's potential to enhance teaching efficiency and support personalised learning. However, the findings of this study further deepen this understanding. In contrast to studies such as E. Đerić *et al.* (2025), which focused on concerns regarding the professional accuracy of GenAI, 83% of respondents in the present study highlighted a “lack of contextual awareness” in cultural interpretation, specifically the inability to convey implicit cultural connotations such as ‘face’. This finding suggests that, in the context of international Chinese language education, where cultural nuances play a central role, the limitations of current GenAI pose a significant obstacle to its deeper pedagogical integration. Second, an in-depth analysis of the influencing mechanisms of the UTAUT dimensions. This study validates the explanatory power of the UTAUT model in this research context while revealing its unique operational mechanisms. Performance expectancy was confirmed as the most core driving factor. Respondents

strongly perceived that using GenAI could significantly improve lesson preparation efficiency and enrich teaching resources, thereby enhancing their willingness to use it. This finding is entirely consistent with the meta-analytic conclusion of R.K. Mafa & D.W. Govender (2025), that performance expectancy is the most important factor predicting teachers' technology adoption intention. Its dominant position may stem from the immense lesson preparation pressure and resource creation needs faced by pre-service teachers, making the “performance gain” offered by GenAI particularly salient.

The influence of effort expectancy presents a paradox. On one hand, respondents acknowledged the basic usability of mainstream GenAI tools; on the other hand, they perceived the “secondary effort” required to adapt general tools to specific Chinese teaching scenarios and to critically review generated content as considerable. This finding partly contrasts with studies conducted in resource-rich environments, notably N. Nistor *et al.* (2013), which emphasise the significant positive impact of usability. This study indicates that when applying GenAI to professional teaching fields, the assessment of “ease of use” has shifted from the basic operational level to a higher-order cognitive level of “professional adaptation and critical integration”. Social influence exhibits a unique dual effect. The positive aspect is reflected in the broad societal trend towards intelligentisation providing a positive push for teachers; the negative aspect stems from concerns about potential policy restrictions, academic ethical controversies, and conservative atmospheres in future work environments. This suggests that for a new technology like GenAI, which possesses both immense potential and significant controversy, social influence itself is a field of tension, and its net effect depends on how individuals weigh the promoting and inhibiting signals within it. Facilitating conditions are another key bottleneck. Respondents widely reported a lack of specialised tools optimised for international Chinese teaching scenarios (partly due to access restrictions to platforms like ChatGPT), systematic training support, and clear institutional policy guidance. This finding resonates with the conclusion of S. Xu *et al.* (2024), on international Chinese teachers' use of OERs, that facilitating conditions directly influence usage intention and behaviour. This study shows that the absence of infrastructure and institutional support severely constrains the translation of performance expectancy into actual usage behaviour. Finally, regarding the theoretical significance of this study. This study not only empirically demonstrates that the UTAUT model is applicable for explaining PICLTs' GenAI acceptance but, more importantly, deepens it contextually. The study finds that in the field of cross-cultural language teaching, “cultural context adaptability” becomes a key latent variable affecting performance expectancy and effort expectancy; while social influence needs to be deconstructed into dual forces of “facilitation” and “inhibition”. These findings provide important theoretical clues for future extensions of the UTAUT model in similar fields.

■ CONCLUSIONS

The findings of this study demonstrated that the acceptance of GenAI among pre-service international Chinese language teachers was characterised by a balanced and context-sensitive perspective, combining instrumental considerations with humanistic values. Participants recognised the functional advantages of GenAI, particularly its capacity to enhance teaching efficiency and support the generation of instructional resources. At the same time, they expressed consistent reservations regarding its limitations in conveying cultural nuances and sustaining meaningful interpersonal interaction, thereby reaffirming the irreplaceable role of the teacher in emotional engagement and cultural mediation. From the perspective of influencing mechanisms, the results confirmed the explanatory relevance of the UTAUT framework, with performance expectancy emerging as the primary driver of behavioural intention. However, the study also identified facilitating conditions as a critical constraint, highlighting the importance of technical infrastructure, institutional support, and targeted training in shaping technology adoption. Effort expectancy presented a dual effect, as basic usability did not eliminate the additional cognitive and professional effort required for effective pedagogical integration. Social influence similarly operated in a complex manner, simultaneously encouraging adoption through broader digitalisation trends while limiting it through institutional uncertainty and ethical concerns. Furthermore, the study extended the

applicability of the UTAUT model by revealing context-specific dimensions, particularly the role of cultural adaptability and the dual nature of social influence in international Chinese language education. These findings suggested that technology acceptance in this domain could not be fully understood without accounting for the interplay between pedagogical, cultural, and institutional factors. Overall, the results contributed to a more nuanced understanding of how emerging technologies were evaluated and integrated within language education contexts, emphasising the coexistence of technological potential and human-centred constraints. Future research should focus on expanding empirical scope through larger and more diverse samples, as well as incorporating longitudinal and cross-cultural designs to further examine the dynamics of GenAI acceptance in educational practice.

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■ CONFLICT OF INTEREST

None.

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Генеративдик жасалма интеллектти кабыл алуу жана анын таасир этүү механизмдерин эл аралык студенттер үчүн кытай тилинин болочок мугалимдеринин арасында UTAUT модели негизинде изилдөө

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Аннотация. Жасалма интеллекттин тез өнүгүшү менен, генеративдик жасалма интеллект глобалдык тил билим берүү тармагында чоң таасир калтырууда. Бирок, эл аралык студенттер үчүн кытай тили мугалимдери тарабынан генеративдик жасалма интеллектти кабыл алуу боюнча эмпирикалык изилдөөлөр чектелүү. Бул изилдөө, эл аралык студенттер үчүн кытай тили мугалимдери арасында генеративдик жасалма интеллектти кабыл алуу жана анын таасир механизмдерин изилдөө максатын койду. Изилдөөдө сапаттуу изилдөө методдору, анын ичинде жарым-жартылай структураланган интервьюлар жана фокус-топтук талкуулар колдонулду, жана жасалма интеллектти кабыл алуу жана пайдалануу боюнча бирдиктүү теориялык моделди талдоо үчүн колдонушту. Изилдөөлөр көрсөткөндөй, кытай тили боюнча мугалимдердин көпчүлүгү генеративдик жасалма интеллекттин педагогикалык баалуулугун таанып, аны окутуунун натыйжалуулугун жогорулатуу үчүн курал катары карашкан. Ошол эле учурда, алар студенттердин технологияга ашыкча көз карандылыгы, маданий контекстен ажыроо жана мүмкүн болгон интеллектуалдык менчик коркунучтары сыяктуу практикалык көйгөйлөрдү да белгилешкен. Натыйжалуулук боюнча үмүт, аракет жумшоо, социалдык таасир жана шарттар мугалимдердин генеративдик жасалма интеллектти колдонууга болгон даярдыгына таасир эткен, алардан натыйжалуулук боюнча үмүт эң чоң оң таасирди көрсөткөн. Ошондой эле, техникалык чектөөлөр, жетишсиз даярдык жана белгисиз саясаттар мугалимдердин кабыл алуу ниеттерин төмөндөтө турган негизги тоскоолдуктар катары белгиленген. Акырында, келечектеги кытай тили мугалимдери технологияларды кабыл алууга карата эки тараптуу мамиле көрсөтүп, инструменталдык рационалдуулук менен гуманисттик карашты тең салмакташа алышкан. Изилдөөнүн натыйжалары генеративдик жасалма интеллектти эл аралык кытай тилин окутуу тармагына интеграциялоого эмпирикалык колдоо көрсөттү.

Негизги сөздөр: кесиптик өнүгүү; интервью методу; эл аралык билим берүү; маданий алмашуу; социалдык таасир

Исследование принятия генеративного искусственного интеллекта и его механизмов воздействия среди будущих преподавателей китайского языка для международных студентов на основе модели UTAUT

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Аннотация. С быстрым развитием искусственного интеллекта генеративный ИИ оказывает все более значительное влияние на глобальное языковое образование. Однако эмпирические исследования о принятии генеративного искусственного интеллекта будущими преподавателями китайского языка для международных студентов ограничены. Это исследование было направлено на изучение принятия и механизмов влияния генеративного искусственного интеллекта среди будущих преподавателей китайского языка для международных студентов. Были использованы качественные методы исследования, включая полуструктурированные интервью и фокус-групповые обсуждения, а также модель Единой теории принятия и использования технологий для анализа. Исследование показало, что будущие преподаватели китайского языка в целом признают педагогическую ценность генеративного ИИ, рассматривая его как инструмент повышения эффективности преподавания. Тем не менее, они также выделили практические проблемы, такие как чрезмерная зависимость студентов от технологий, оторванность от культурного контекста и возможные риски интеллектуальной собственности. Ожидания по результатам, затраты усилий, социальное влияние и благоприятные условия оказали влияние на готовность преподавателей использовать генеративный искусственный интеллект, при этом ожидания по результатам оказали наибольшее положительное влияние. В то же время технические ограничения, недостаток подготовки и неясные политики стали значительными барьерами, снижавшими намерения преподавателей принять эту технологию. В конечном итоге будущие преподаватели китайского языка проявили двустороннее отношение к принятию технологий, балансируя между инструментальной рациональностью и гуманистическими соображениями. Результаты исследования предоставили эмпирическую поддержку интеграции генеративного искусственного интеллекта в международное образование по китайскому языку.

Ключевые слова: профессиональное развитие; метод интервью; международное образование; культурный обмен; социальное влияние



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Psychological and pedagogical adaptation of students to the system of higher education

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Abstract. The main task in higher education is the successful adaptation of students to the learning system. Successful adaptation directly affects learning conditions, stress resistance, social integration, and overall emotional well-being. The article examined the causes of the adaptation process of students from rural areas to university life. The aim of the study was to investigate the problems of adaptation of rural students in the educational process at a technical university. In this regard, a survey was conducted among first-year rural students of D. Serikbaev East Kazakhstan Technical University in the 2024-2025 academic year. This study analysed the most important psychological and pedagogical aspects of students' adaptation to higher education conditions. The analysis revealed that a key role in the successful adaptation of first-year students belongs to lecturers and academic advisors, as they provide initial psychological and pedagogical support and help students navigate new educational conditions. It was also shown that effective organisation of the educational process and the creation of a favourable learning environment are essential, as they help reduce stress and form a sense of psychological safety. In addition, the article summarised recent analytical data and generalised practical experience in psychological and pedagogical support for first-year students. Based on this analysis, specific recommendations were proposed to improve students' adaptation in higher education, including the enhancement of academic advising, the implementation of psychological support programmes, and the creation of opportunities for greater student involvement in extracurricular and socially significant activities. This work will be of interest to lecturers, academic advisors, psychologists, educational staff, and researchers in the field of higher education, as it helps improve the effectiveness of the educational process. The survey results contribute to improving the quality of education, identifying problems, and developing solutions

Keywords: social adaptation; first-year students; key problems; solutions; research; survey

■ INTRODUCTION

The relevance of this study stems from the increase in the overall number of students from rural areas enrolling in technical universities, against the backdrop of current developments in higher education. The transition from a rural educational environment to an urban and technologically advanced one is complex and multifaceted. This transitional period has a significant impact not only on the academic sphere, but also on the social, psychological and professional spheres of an individual's life. In the modern higher education system, demands on students are increasing, i.e. the volume of independent work, the style of interaction

with lecturers, time management, and responsibility for and regulation of academic activities. A. Zarbat (2023) examined how students adapt to academic requirements, integrate into a new social environment, and manage their psychological well-being using a combination of approaches. She drew the following conclusions: successful adaptation to university life requires full support from the university, namely psychological services, mentoring support and the development of emotional intelligence. O. Muller & N. Rotova (2020) analyse the socio-psychological adaptation of first-year students at a teacher training university

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as a crucial stage in their professional self-determination. The researchers identified two key components of successful integration into a new environment: the productivity of educational activities and the effectiveness of communication with lecturers and fellow students.

Students from rural areas face a multifaceted process of adaptation. In other words, the transition from rural areas to the city and the pursuit of higher education are fraught with significant difficulties. In particular, changes in social and living conditions and the increased demands of the academic process undoubtedly lead to stress. One can agree with the researchers Y. Gul & A. Tas (2024), who in their work examine the issue of social adaptation among students who have migrated from rural areas of Kyrgyzstan to pursue higher education. Analysing the impact of migration on students' psychological well-being, the researchers concluded that the average level of integration into urban life and society remains moderate. I. Kepaliene & B. Zygaityene (2025) note that effective social integration is linked to individual psychological qualities, including adequate self-esteem and stress resilience, as well as support from teachers, family and peers. The findings of the study show that academic engagement and financial stability are key factors in reducing student dropout rates. Significant attention was paid to the fact that students who combine their studies with work, as well as those from vulnerable social groups, are at increased risk of dropping out. In the work of N. Gerasimova *et al.* (2021), it was noted that a systematic approach to modelling relationships is important in both psychology and linguistics. Such an approach allows for a deeper understanding of the processes of individual adaptation under the influence of the environment and the evolution of linguistic systems. According to researcher M. Badelina (2020), who conducted a study on the composite system of the adaptation process for first-year students from a pedagogical perspective, she concluded that the main purpose of students' adaptation to university education lies not only in the transfer of knowledge and skills from the academic staff directly to the students, but also in the personal development of each student and the acquisition of personal experience. According to G. Baimoldina *et al.* (2026), psychological and pedagogical training forms the basis of professionalism; in particular, to become a skilled professional, it is important to develop emotional intelligence, including self-awareness, self-regulation and digital literacy. In the study by N. Rasulova *et al.* (2023), the following conclusion was drawn: the creation of a supportive educational environment within the university, and the improvement of the quality of training for competitive specialists through the application of innovative methods of pedagogical support. G. Baimoldina *et al.* (2026) noted how large student numbers in higher education institutions create problems. Overly large class sizes lead to a multitude of superficial interactions, which, in turn, hinder students' educational development and psychological well-being.

Other significant challenges affecting the adaptation process of young people from rural areas include housing

difficulties, adjusting to halls of residence, the high cost of living, financial constraints, the distinctive social mindset of rural populations, and individual psychological characteristics. Researchers M. Tulebayeva & I. Rystina (2024) studied issues of migration and social integration among rural youth in the Taraz, Turkestan and Kyzylorda regions. The study details the difficulties of adaptation: the high cost of living, high housing prices, and the distinctive social mindset among rural residents. Considerable attention was paid to mechanisms of social mobility and state support for students' professional development. According to a study by L. Iliichuk & O. Vorobets (2020), a high level of adaptation is linked to academic success and professional growth. Furthermore, they identified factors influencing adaptation during the initial stage of study, including an increased academic workload-coursework and independent study, emotional burnout, and issues with physical and mental health. The main objective is to select strategies for enhancing students' stress resilience in higher education institutions and fostering a supportive environment for social integration.

Researchers O. Khallo *et al.* (2023) argue that it is necessary to move beyond the outdated model of education and transition to a new system that stimulates personal development, in order to successfully adapt students to modern, ever-changing university life. Research has shown that enhancing self-improvement and psychological well-being is key to preparing competitive and adaptable future professionals. Drawing on international experience helps to create a humanistic environment within the university that takes into account the individual needs of each person. Thus, numerous studies by researchers have shown that young people from rural areas have lower levels of pedagogical and psychological adaptation than young people from urban areas. Therefore, there is a need to review existing forecasts within the higher education system and consider ways to improve the quality of education, incorporating certain additions into the conclusions. Furthermore, universities would benefit from developing and launching special programmes to support the adaptation process of young people from rural regions. The aim of this study was to identify the characteristics of the psychological and pedagogical adaptation of students from rural areas.

■ MATERIALS AND METHODS

In order to identify the difficulties faced by students from rural areas while studying at university, a literature review was conducted and a survey was carried out to gather initial empirical data. The literature review identified the main indicators of adjustment difficulties. The survey made it possible to identify specific problems and assess their severity. Statistical analysis enabled the data to be systematised (percentages). The analysis was carried out in three stages: theoretical – a review of the academic literature on student adaptation was conducted, and the aims, objectives and research hypothesis were defined; empirical – a questionnaire was developed, a survey of students

was conducted and raw data was collected; analytical – the research results were processed and explained, and conclusions were drawn. A review of the scientific literature was conducted on the subject of this study. The literature review revealed that the adaptation of students from rural areas to the conditions of higher education is multifaceted and characterised by a range of academic, socio-psychological, emotional and personal, socio-economic, practical, socio-cultural and professional challenges. The review highlighted various approaches and contentious issues: the role of academic preparation; the importance of cultural differences; and the factor of personal resources.

Survey was developed using the theoretical principles and approaches set out in academic works by Kazakh, Russian and international researchers on the challenges of student adaptation. Individual questions in the questionnaire were developed based on existing psychological and pedagogical methods (e.g., scales of adaptation, stress resilience and self-regulation assessment), but overall the instrument was adapted to the objectives of this study. The survey questions were developed by the author in accordance with the research objective and consisted of 23 questions (Google Forms, 2023). The study was conducted in accordance with the ethical standards of the American Sociological Association's Code of Ethics (2018).

The questionnaire was used to gather the first empirical data on the difficulties faced by students from rural areas while studying at university. The survey was conducted among first-year rural students studying technical subjects at the D. Serikbayev East Kazakhstan Technical University (EKTU) during the 2024-2025 academic year. The questionnaire was administered online (via Google Forms) at the D. Serikbayev EKTU. A total of 40 students from rural areas took part in the survey, including 26 male and 14 female students. The respondents were aged between 17 and 18. The survey was conducted anonymously and with the students' consent. It took 20-25 minutes to complete the questionnaire. The study employed descriptive statistical methods. Data analysis was carried out by calculating the percentage of respondents' answers. To do this, the number of responses for each option was divided by the total number of survey participants and multiplied by 100%. Calculations were performed using Microsoft Excel, which enabled the results to be clearly presented and systematised. The study employed a method of analytical data interpretation. The percentage figures obtained were analysed and compared with one another, which made it possible to identify the main trends, problems and characteristics of students' adaptation.

■ RESULTS AND DISCUSSION

Problems in the process of psychological and educational adaptation among young people from rural areas are highly relevant. Subsequent studies have shown that the inability of young people from rural areas to adapt to the educational environment creates a number of problems and has a significant negative impact on their academic

performance. One can agree with the researchers T. Kachieev & A. Khushanlo (2025), who noted that the adaptation of students from rural areas is multifaceted. That is, factors such as external ones-in particular, language, financial circumstances and integration into society-and internal ones-self-esteem and motivation-will be interrelated in shaping individual trajectories. The hypotheses regarding the dependence of adaptation on the reasons and significant barriers mentioned have been fully confirmed, while the scientific assumption concerning university measures has been partially confirmed due to the lack of systematic plans. Kyrgyzstan's specific characteristics-group cohesion, heterogeneity and material instability-require support at various levels and as needed. The article by R. Ilyasov & F. Safiullina (2025) outlines the problem of adaptation of students from rural areas to urban environments, and more specifically, the academic, emotional and economic barriers they face during their studies. It has been demonstrated that a special plan is required to support students in these areas: the introduction of digital literacy courses in rural schools, which will, in turn, help prospective students adapt more easily to modern education; increasing access to subsidised halls of residence to improve living conditions; and establishing psychological support centres in higher education institutions to ensure psychological well-being. The systematic implementation of these measures will create a comfortable and supportive environment that fosters both academic success and full integration into society. In her study, V. Kondratenko (2023) drew the following conclusions: although internet access is available in rural areas, it was observed that students' cognitive abilities are lower, while psychological conditions are more stable. Of course, this is closely linked to the characteristics of rural life. It has been established that there are also differences in social integration and communicative development.

Forty students from rural areas took part in the survey. When asked, "Is studying at university prestigious?", 65% of students considered their university to be prestigious, while 35% did not. At first glance, the result looks quite good: more than half of the students rate the institution positively. This is most likely due to the fact that the university offers in-demand degree programmes and has a fairly strong teaching staff. Students who rated the prestige negatively found that their expectations of their studies did not match reality. It turns out that there is a positive image, but it is not yet stable. If the problems that trouble the remaining 35% are not addressed, the overall rating may change for the worse over time.

To the question "Who (or what) was your source of information about the university?", respondents answered as follows: most frequently, relatives and acquaintances (37.5%). In second place were social media (22.5%), with the official website and advertising brochures receiving roughly the same proportion (20% each). School teachers, open days and advice from lecturers were mentioned significantly less often. Positive reviews online, however, proved to be a virtually negligible factor – just 5%. Firstly,

it turns out that “word of mouth” works better than any official advertising. People trust what they hear from a specific person more than what is written on a website or in a brochure. Social media comes in second place because it also features real people and real stories, rather than official statements. This showed that the university needs to do more than simply invest in printed materials and a website. Much more important is what current students and graduates say about it – it is they who shape the reputation that eventually attracts new applicants.

Among the motives for choosing a university, a rather unexpected response took first place: 25% of students said they simply had no other option, which was the most common answer. This was followed by the university’s state status and employment prospects (22.5% each), and an

interesting student life (17.5%). Teaching quality, the desire to master a profession, and low competition each accounted for 15%. Prestige and the influence of parents came in last. No one mentioned advice from friends. Almost one in four students ended up here not because they wanted to, but because that’s how it turned out. Many made a pragmatic choice – as long as it was a state university, and as long as they could find a job afterwards. In such cases, the university is seen more as a tool than as a place they aspired to attend. It is important to understand this, because a student who came “for lack of a better option” and a student who specifically chose to enrol here represent two completely different levels of engagement with their studies. The responses to the question “Why did you choose this specialism?” are shown below (Fig. 1).

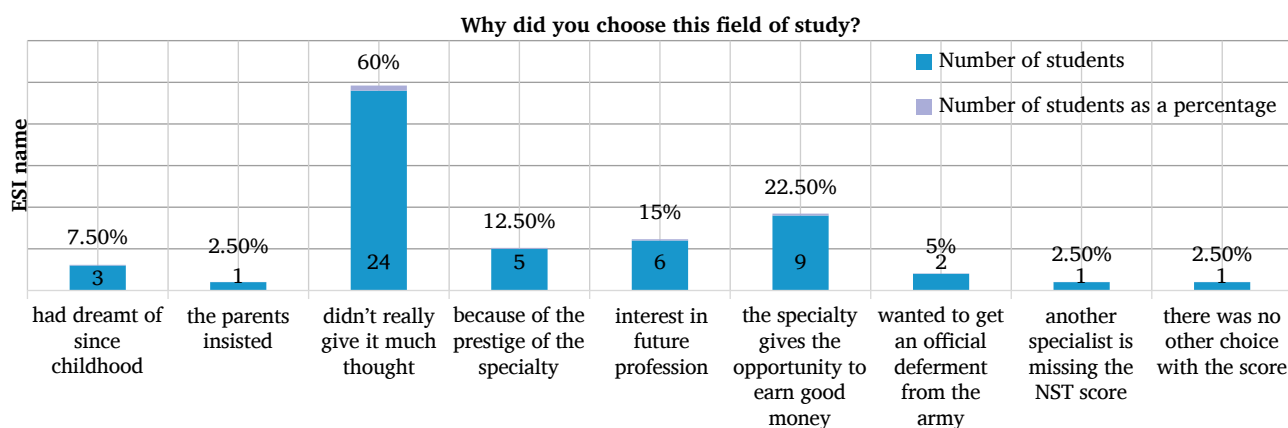


Figure 1. Responses to the question “Why did you choose this field of study?”

Source: compiled by the author

The results of this question are the most revealing in the entire survey. 60% of students admitted that they “didn’t give it much thought” when choosing their degree programme. In other words, more than half ended up in their chosen field without having made a conscious decision. A desire for a stable career was noted by 22.5%, real interest in the subject by only 15%. Childhood dreams and the advice of parents are very rare. Many students simply did not have enough information about what to expect in a particular degree programme. Schools rarely provide a realistic picture of careers, yet a choice must be made quickly. The consequences of this approach become apparent even during the course of study: when a person does not understand why they are there, it becomes much harder to maintain their interest. And this is no longer just a problem for the student, but a challenge for the university itself. According to V. Kondratenko & A. Mityaeva (2023), students from rural areas tend to be more focused on high-earning careers and, when choosing a degree programme, are influenced by the level of training and the entry requirements for that programme; however, they also strive for personal fulfilment. At the same time, after entering university, their social environment expanded significantly. Students from urban and rural areas

emphasised moral values, including prioritising honesty and kindness. It was found that urban students value kindness, openness and determination, while rural students value fairness, responsibility, perseverance, friendship, as well as sound thinking and strong relationships. Furthermore, the study notes that all respondents devote all their time to their studies and other activities, and find it difficult to decide on their future career. It is worth noting that many students from rural areas also indicated that they do not work in their chosen fields. Therefore, when developing a programme to help students from rural areas adapt to university life, it is advisable to take into account their social adaptability, characteristics typical of rural students, as well as their motivation to master their chosen field and their readiness to pursue higher education.

When asked about their plans after graduation, only 35% of students answered with confidence – they intend to work in their chosen field. 10% already know that they will not pursue a career in their chosen field. And the majority – 55% – gave an answer that went something like this: “Let’s see how things turn out”. This result follows logically from the previous one: if more than half of the students chose their specialty without giving it much thought, then they have little confidence in the future. It is noteworthy

that more than half remain undecided. The results regarding the question “Has your attitude towards your chosen specialty changed?” can generally be described as encouraging. More than half of the students (57.5%) say that their attitude towards their specialty has not changed and that it was positive. A further 30% noted that, after starting their course, they actually began to view their subject more favourably than before. There is a negative trend, but it concerns a minority. It would seem that, if more than half chose their subject without giving it much thought, one might expect disappointment. But in practice, many got drawn in and found something for themselves during the course of their studies. Nevertheless, those whose attitude has deteriorated are not just statistics. These are students whose expectations clashed with reality and did not match up. And if their numbers increase as they progress to higher years, this is already a signal to investigate exactly what has disappointed them.

The results of the question “Was it difficult to get used to student life?” show that most students found the adjustment process somewhat challenging: 52.5% noted that it was of moderate difficulty and involved some difficulties. A further 20% admitted that they found it difficult to get used to their new life. At the same time, 27.5% of students experienced almost no problems and quickly settled into student life. Overall, it can be said that for many, the transition to student life does not go smoothly straight away and takes time. While some students cope quite easily, there are others who need extra support during this period.

The next question, “Where do you currently live?”, saw 65% of students reply that they live in a hall of residence. Meanwhile, 17.5% each either live with their parents or rent accommodation. This shows that halls of residence are the primary accommodation option for students, and that the conditions there have a significant impact on their comfort and ability to settle in. At the same time, a relatively small number of students live outside halls of residence, which is most likely due to limited opportunities for independent living. Figure 2, illustrates the main difficulties encountered in halls of residence.

Which of the following do you think makes it more difficult to adjust to life in a hall of residence?

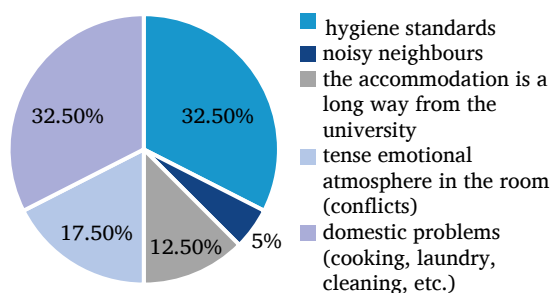


Figure 2. Responses to the question

“Which of the following do you think makes it more difficult to adapt to life in a hall of residence?”

Source: compiled by the author

The main difficulties students most frequently cite when adapting to life in a hall of residence are domestic issues and sanitary conditions – 32.5% each. A further 17.5% mentioned a tense atmosphere and conflicts, whilst 12.5% cited the inconvenient location of the accommodation relative to the university. Meanwhile, noisy neighbours proved to be the least significant problem. Overall, it is clear that it is daily life in the hall of residence – the living conditions and organisation of daily life – that has the greatest impact on comfort. Social interaction also plays a role, but not as significant one, while factors such as distance from the university prove to be less important. Responses to the question “How, in your opinion, does living in a hall of residence affect the process of social adaptation?”: the majority of students believe that life in a hall of residence helps them adapt more quickly: 40% note a clear positive influence due to constant social interaction, while another 37.5% also tend to agree with this view and attribute it to making new friends. At the same time, 10% do not perceive any significant impact, while 12.5% consider it to be negligible. Overall, the hall of residence is seen as an environment that helps students settle into student life and build social connections. However, for some students, this factor does not play a significant role, which is likely to depend on personal characteristics or living conditions. Figure 3 shows the responses regarding difficulties with the academic workload.

Are you finding the academic workload manageable?

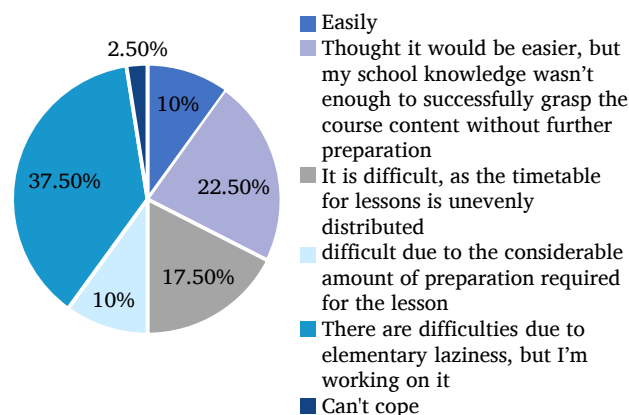


Figure 3. Responses to the question

“Do you find the academic workload manageable?”

Source: compiled by the author

Only 10% of students say they find the academic workload easy to manage. 22.5% feel that the school facilities are inadequate, 17.5% face difficulties due to the timetable, and 10% because of the heavy workload. At the same time, the largest group – 37.5% – mentions a combination of problems: the complexity of the programme, the need to balance studies with other commitments, and so on. This shows that most students find their studies challenging. Only a small proportion feel confident, while the rest face various difficulties, which points to the need for additional support. As for difficulties with university studies, the

most common complaint among students is an inconvenient timetable – 37.5% cited this. Almost as many (35%) experience difficulties due to the need to balance their studies with work or other commitments. The demands of lecturers (30%), a heavy workload of independent study and a decline in motivation (27.5% each) also play a significant role. Factors such as the number of classes and the level of preparation prior to university are mentioned less frequently (10% each). Difficulties arise not only from the studies themselves, but also from how they are organised. The workload is exacerbated by the timetable and the need to combine everything, while the requirements and volume of assignments further increase the pressure.

52.5% of students report experiencing stress from time to time, while another 17.5% experience it constantly. Meanwhile, 22.5% say they do not experience stress, and 7.5% found it difficult to answer. This suggests that stress is a fairly common part of the learning process for most students. For some, it occurs periodically; for others, it is a constant presence; and only a small proportion of students feel at ease. This issue was investigated by the researcher E. Shereshkova (2023). The analysis in the author's article focuses on examining the direct link between first-year students' ability to cope with obstacles and their adaptation to university life. The author concluded that increasing stress resilience is crucial for students' psychological well-being and personal maturity. An analysis conducted among trainee teachers showed that increased stress resilience and the level of successful adaptation influence academic achievement and emotional well-being. According to statistics, only one in five students adapts well and is able to demonstrate self-confidence. It is therefore necessary to establish psychological support centres in universities. In other words, the main objective is to engage students in developing their inner capacities for successful adaptation to university life.

The main cause of stress for students is the heavy academic workload – 42.5%. The fear of being expelled also plays a significant role (32.5%). About 20% mention factors such as poor academic performance, psychological pressure and taking their studies too seriously. Conflicts with lecturers (7.5%) and personal characteristics (5%) are mentioned less frequently, whilst 17.5% found it difficult to answer. Overall, it is clear that stress is primarily linked to overload and anxiety about studies. The pressure associated with results and expectations only exacerbates this condition. Most students associate stress with anxiety – 60% mentioned this. Half also cited a lack of self-confidence. 27.5% each admit that they find it difficult to manage their time effectively and that they procrastinate, 22.5% point to aggression, and 17.5% each cite excessive emotionality and a sense of responsibility. A further 10% were unable to give an answer. It appears that stress is largely linked to internal states: anxiety, self-doubt and a lack of self-organisation skills, which together increase tension.

45% of students admit that they experienced difficulties when first adapting to student life, but were able to settle in over time. An equal proportion – 45% – felt at ease straight

away and did not encounter any problems. Only 10% report that they continue to struggle with adaptation throughout their studies. This shows that for many, the early stages are indeed difficult, but the situation evens out over time. At the same time, there is a small group of students who require more attention and support. 52.5% of students believe they do not need counselling, yet 47.5% still report a need for such support. This suggests that almost half of students face psychological difficulties and require support. Although slightly more students do not consider this necessary, the demand for help remains quite high. Researchers L. Demidova & M. Krivoshechekova (2023) reached the following conclusion: student life begins in the first year; therefore, the ability of first-year students to adapt successfully to life and study at university enables them to be recognised as individuals, citizens and future professionals. In this regard, it is considered that students with a low level of adaptation require support from a lecturer, psychologist and tutor. Subsequently, the researchers A. Ignatova (2022) conducted a study aimed at determining the level of socio-psychological adaptation among first-year students studying at various faculties of the S.A. Yesenin Ryazan State University. According to the author, 70% of respondents had a high level of adaptation, while 10% had a level below average. The reasons for this were identified as the individual psychological characteristics of the students. The study showed that the adaptation process is a highly complex and multifaceted process, and its success is closely linked to a number of factors, in particular the individual psychological characteristics of students. For students to adapt successfully, it is also important that university counsellors and tutors work with students and conduct psychological training sessions. During the first year of study, students develop a desire to learn and master their chosen disciplines. The quicker a student adapts to university life, the better equipped they will be to cope with challenges in both their professional development and the development of their individual psychological characteristics. Further details on psychological support are provided in Figure 4.

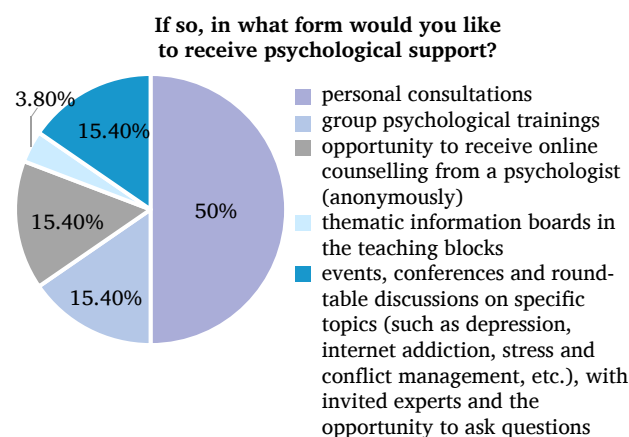


Figure 4. Responses to the question "If so, in what form would you like to receive psychological support?"

Source: compiled by the author

Most students choose individualised consultations – 50% opted for this option. The other formats received roughly the same proportion of votes: 15.4% each for group training, online consultations (including anonymous ones) and participation in various events. Information stands were the least popular. This shows that a personal and confidential format of support is most important to students. At the same time, there is also interest in group and online formats, so it is best to combine different support options. According to E. Knyazeva & T. Korzhavina (2023), the level of adaptation can be improved through the following measures: organising various events on adaptation issues; holding consultation sessions with lecturers, tutors and psychologists; organising group games; involving students in collective scientific analysis on various topics. A. Antonovskii *et al.* (2020) study the psychological qualities of first-year students' adaptation to higher education. This process is referred to as the transition from a carefree childhood to the start of a new chapter filled with responsibility. The dynamic development of integration into a new social environment is examined through the quality of personal life, emotional stability, motivation to acquire knowledge, and the level of communicative tolerance. The aim of the analysis is the scientific justification of the need for pedagogical and psychological support for students to reduce stress-inducing factors and enhance the level of professional training. Furthermore, this study notes that harmonious personal development is interlinked with maintaining a balance between societal demands and norms and the internal mechanisms of the student's adaptation process.

The main factor of adaptation, students say, is the desire to learn – 52.5% cited this. Also playing an important role are the study habits formed while still in school (30%) and interaction with fellow students (27.5%). Other factors, such as a friendly atmosphere, leisure activities, assistance from a tutor and targeted support, are mentioned much less frequently. Adaptation depends largely on the student's own mindset. That said, previous experience and group interaction also help, while external support is seen as an additional, but not a key, factor. 55% of students start their studies without much interest, with indifference. A further 25% explicitly state a reluctance to attend classes, and only 20% arrive with a positive attitude. It is clear that most students lack a strong motivation to learn: a neutral or even negative attitude prevails. This may indicate fatigue and a decline in engagement with the learning process. 67.5% of students report that they have developed good, friendly relationships with their classmates. A further 30% describe them as neutral, and only a few experience conflicts. Overall, a comfortable atmosphere prevails within the group: most find it easy to socialise, which helps them adapt more quickly and feel more confident amongst their classmates.

Students are most often interested in sports clubs (volleyball, table tennis, swimming, etc.) and voluntary work. Some of them also wish to join student organisations and,

in general, become more involved in student life. However, a significant number of responses indicate that some students have no interest in extracurricular activities. This may be due either to low engagement or to the fact that they are simply unaware of the opportunities available. According to research by T. Bodyakina & E. Yeltoshkina (2025), it is best to pay particular attention to students with a level of social and psychological adaptation below average or lower. These students should be encouraged to take part in cultural events, professionally-oriented excursions and research projects. To enhance their professional qualifications, it is important for lecturers to illustrate interdisciplinary connections using practical examples during lessons. Furthermore, in order to train highly qualified specialists for the agro-industrial complex, it is necessary to continue work on developing adaptation mechanisms for other students. At the agricultural university, annual testing is required to assess the effectiveness of social and psychological adaptation.

40% of students say they do not miss classes without a valid reason. However, 27.5% do so about once a month, 12.5% once a week, and 15% even more frequently. A small proportion chose other options. Although there are disciplined students, absences are still quite common. For some students, they occur regularly, which may be linked to motivation, workload or other reasons. It can be said that students' adaptation to university life varies, but overall it cannot be described as entirely easy. On the one hand, many view their studies positively and note good relationships within their group, which helps them settle into the new environment more quickly. The hall of residence also plays an important role, as it provides opportunities to socialise more and make new friends.

Students also have serious difficulties. Many choose their university or degree programme without fully realising the implications, which leads to a decline in their interest in their studies over time. This is manifested in a neutral or even negative attitude towards their classes and a lack of a clear understanding of their future profession. The organisation of the academic process and the requirements themselves create an additional burden: an inconvenient timetable, the need to balance studies with other commitments, and a heavy workload. All of this is directly linked to the stress experienced by many students. This often arises from a fear of failing, a heavy workload, and personal traits such as anxiety or a lack of self-confidence. There are also challenges associated with living in a hall of residence. Although it helps with social adaptation, living conditions, hygiene and, at times, conflicts can still cause discomfort. Almost half of the students mention the need for psychological support. At the same time, much depends on the students themselves: a desire to learn, a habit of studying and socialising with fellow students noticeably help with adaptation. However, the level of involvement in student life varies-some actively participate in extracurricular activities, while others remain on the sidelines.

■ CONCLUSIONS

An analysis of the survey results has shown that the hypothesis regarding the specific nature of the psychological and pedagogical adaptation of students from rural areas to studying at a technical university has been fully confirmed. Consequently, one of the most important tasks in improving the quality of education at universities is to provide psychological and pedagogical support on the above-mentioned issues during the initial stage of study. The study showed that the adaptation of students from rural areas to higher education institutions is influenced not only by academic difficulties, but also by difficulties relating to psychological and socio-cultural adaptation. Thus, a range of difficulties faced by students from rural areas has been identified: academic and psychological difficulties, including inconvenient timetables, an excessive workload, a large amount of independent study, the need to balance studies with other commitments, a lack of commitment to their studies, emotional detachment, low stress resilience, insufficient psychological support, and a low level of development of individual abilities; career guidance difficulties, including a lack of a clear understanding of the chosen profession and uncertainty regarding the direction of future professional activity; motivational difficulties, including weak intrinsic motivation, low interest in studies, and an unconscious choice of profession; social and living conditions, including sanitary and living conditions in the hall of residence.

The challenges discussed above reflect the complexity of the adaptation process for students from rural areas and highlight the need for further research in this field. In particular, the study showed that an in-depth analysis is required of issues such as reduced motivation to study,

insufficient career guidance, high levels of stress, the impact of sanitary and living conditions in halls of residence, and inadequate psychological support. For future research, it is important to comprehensively examine the effectiveness of individual psychological counselling, which support systems meet students' individual needs, and how social and educational conditions contribute to their successful adaptation. Adaptation requires time and support. On the part of the university, it is important to focus on the organisation of the academic programme, psychological support and living conditions, so that students find it easier to cope with the workload and feel more at ease. Prospects for further research relate to the development and testing of effective models of psychological and pedagogical support for students from rural areas, as well as the study of the long-term dynamics of their adaptation during the learning process. It is important to investigate the effectiveness of individual and group psychological counselling, to determine the optimal forms of academic support, and to identify the influence of the educational environment on the development of sustained academic motivation.

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■ CONFLICT OF INTEREST

The author formally declares that there were no conflicts of interest during the conduct and publication of this study.

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Аннотация. Жогорку билим берүүдө негизги милдет – студенттердин окуу системасына ийгиликтүү адаптациясы. Ийгиликтүү адаптация окуу шарттарына, стресске туруктуулукка, коомго интеграцияга жана жалпы эмоционалдык жыргалчылыкка түздөн-түз таасир этет. Макалада айыл жеринен келген студенттердин университеттик жашоого адаптация болуу процессинин себептери изилденген. Изилдөөнүн максаты техникалык жогорку окуу жайда айылдык студенттердин окуу процессине адаптация болуу көйгөйлөрүн изилдөө болуп саналат. Ушуга байланыштуу Д. Серикбаев атындагы Чыгыш-Казакстан техникалык университетинин 2024-2025-окуу жылындагы биринчи курстун айылдык студенттеринин арасында сурамжылоо жүргүзүлгөн. Бул эмгекте студенттердин жогорку билим берүү шарттарына адаптациясынын маанилүү психологиялык-педагогикалык аспектилери талданган. Анализдин жүрүшүндө биринчи курстун студенттеринин ийгиликтүү адаптациясында окутуучулар жана академиялык топтун кураторлору негизги роль ойной тургандыгы аныкталган, анткени алар алгачкы психологиялык-педагогикалык колдоону камсыз кылып, студенттерге жаңы билим берүү чөйрөсүнө багыт алууга жардам беришет. Ошондой эле окуу процессин натыйжалуу уюштуруу жана психологиялык коопсуздук сезимин калыптандыруучу жагымдуу билим берүү чөйрөсүн түзүү маанилүү экени көрсөтүлгөн. Мындан тышкары, макалада заманбап аналитикалык маалыматтар жалпыланып, биринчи курстун студенттерине психологиялык-педагогикалык колдоо көрсөтүү боюнча практикалык тажрыйба системалаштырылган. Бул талдоонун негизинде студенттердин адаптация деңгээлин жогорулатууга багытталган сунуштар берилген, анын ичинде кураторлордун ишин өркүндөтүү, психологиялык колдоо программаларын киргизүү жана студенттердин сабактан тышкаркы жана социалдык маанилүү ишмердүүлүккө активдүү катышуусун камсыз кылуу каралган. Бул эмгек окутуучулар, кураторлор, психологдор, билим берүү мекемелеринин кызматкерлери жана жогорку билим берүү тармагындагы изилдөөчүлөр үчүн пайдалуу болуп, окуу процессинин натыйжалуулугун жогорулатууга өбөлгө түзөт; сурамжылоонун жыйынтыктары билим сапатын жакшыртууга, көйгөйлөрдү аныктоого жана аларды чечүү жолдорун иштеп чыгууга жардам берет

Негизги сөздөр: социалдык адаптация; биринчи курстун студенттери; негизги көйгөйлөр; чечүү жолдору; изилдөөлөр; сурамжылоо

Проблемы психолого-педагогической адаптации сельских студентов к обучению в техническом вузе

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Аннотация. Основная задача в высшем образовании – успешная адаптация обучающихся к системе обучения. Успешная адаптация напрямую влияет на условия обучения, стрессоустойчивость, интеграцию в общество и общее эмоциональное благополучие. В статье исследованы причины процесса адаптации обучающихся из сельской местности к университетской жизни. Целью исследования стало изучение проблем адаптации сельских студентов в учебном процессе в техническом вузе. В связи с этим был проведен опрос среди сельских студентов первого курса Восточно-Казахстанского технического университета им. Д. Серикбаева в 2024-2025 учебном году. В данной работе были проанализированы важнейшие психолого-педагогические аспекты процесса адаптации обучающихся к условиям высшего образования. В ходе анализа установлено, что ключевая роль в успешной адаптации первокурсников принадлежит преподавателям и кураторам академических групп, поскольку именно они обеспечивают первичную психолого-педагогическую поддержку и помогают студентам ориентироваться в новых образовательных условиях. Наряду с этим показано, что существенное значение имеют также эффективная организация учебного процесса и создание благоприятной образовательной среды, способствующей снижению стресса и формированию чувства психологической безопасности. Кроме того, в статье подведены итоги рассмотрения современных аналитических данных и обобщен практический опыт по психолого-педагогической поддержке студентов первого курса. На основе этого анализа предложены конкретные рекомендации, направленные на повышение уровня адаптации обучающихся в системе высшего образования, включая совершенствование работы кураторов, внедрение программ психологического сопровождения и создание условий для более активного включения студентов во внеучебную и социально-значимую деятельность. Данная работа будет интересна преподавателям, кураторам, психологам, работникам образовательных учреждений и исследователям в области высшего образования, так как позволит повысить эффективность учебного процесса; результаты опроса помогут улучшить качество образования, выявить проблемы и подготовить пути их решения

Ключевые слова: социальная адаптация; первокурсники; основные проблемы; пути решения; исследования; опрос

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