

Conceptualization and reform of digital music education in China and Belarus

Xiaoyin Feng

PhD student

I.P. Shamyakin Mozyr State Pedagogical University

Mozyr, Belarus

2569515473@qq.com

ORCID 0000-0000-0000-0000

Received 08.02.2025

Accepted 28.03.2025

Published 30.04.2025

UDC 37.01.00

DOI 10.25726/u0754-0773-0436-n

EDN VROIBP

VAK 5.8.7. Methodology and technology of vocational education (pedagogical sciences)

OECD 05.03.HE. EDUCATION, SPECIAL

Abstract

This study examines the conceptualization and reform of digital music education in China and Belarus, analyzing the transformation of traditional pedagogical approaches through technological integration in both countries. The research addresses the critical gap in comparative analysis of digital music education reforms in nations with different socio-political contexts yet similar educational heritage. Using a mixed-methods approach combining systematic literature review, comparative policy analysis, and empirical data collection from educational institutions in both countries, the study analyzed digital transformation strategies, implementation patterns, and learning outcomes from 2020 to 2024. Data collection involved surveys from 486 music educators, interviews with 42 institutional leaders, and analysis of curriculum documents from 28 music education institutions. Results revealed significant divergences in reform trajectories: China demonstrated rapid market-driven expansion with online music education reaching \$16.99 billion in 2024, representing 17,63% annual growth, while Belarus exhibited state-controlled gradual digitalization with 91.5% internet penetration but limited educational technology integration. The study identified four key conceptual dimensions: technological infrastructure development (China: 94,7% institutional readiness; Belarus: 67,3%), pedagogical innovation adoption (China: 78,4% active implementation; Belarus: 52,1%), teacher digital competency (China: 82,6% proficiency rate; Belarus: 61,4%), and student engagement metrics (China: 87,2% satisfaction; Belarus: 73,8%). Discussion highlights the theoretical implications for understanding digital music education as culturally embedded practice, emphasizing how political economy shapes technological adoption patterns. The practical significance extends to policy formulation, suggesting hybrid models combining market innovation with state support mechanisms. Future research should explore longitudinal impacts of digital transformation on musical creativity and cultural preservation within evolving educational ecosystems.

Keywords

digital music education, educational reform, China, Belarus, technological integration, comparative education, pedagogical innovation.

Introduction

The digital transformation of music education represents a fundamental paradigm shift in how musical knowledge, skills, and cultural traditions are transmitted across generations. Recent scholarship has increasingly focused on the intersection of technology and pedagogy in music education contexts, revealing complex relationships between digital tools, learning outcomes, and cultural preservation (Biasutti, 2023). The emergence

of artificial intelligence, virtual reality, and cloud-based platforms has created unprecedented opportunities for reimagining traditional music education frameworks, while simultaneously raising questions about authenticity, cultural identity, and pedagogical effectiveness. Within this global transformation, China and Belarus present particularly compelling cases for comparative analysis, as both nations navigate the tension between preserving established musical education traditions and embracing technological innovation. China's rapid economic development and technological advancement have positioned it as a global leader in digital education markets, with the online music education sector experiencing exponential growth driven by massive internet penetration and consumer demand (Camlin, 2021). Belarus, maintaining strong ties to Soviet-era educational structures while pursuing selective modernization, offers a contrasting model of controlled digital integration within established institutional frameworks.

The conceptualization of digital music education itself remains contested terrain within academic discourse. Contemporary literature reveals multiple theoretical perspectives on what constitutes effective technology integration in music learning contexts. Some scholars advocate for complete digital transformation, arguing that traditional pedagogical approaches fail to engage contemporary learners accustomed to multimedia environments and interactive technologies (Cayari, 2021). Others propose hybrid models that selectively incorporate digital tools while maintaining core elements of traditional master-apprentice relationships and embodied musical practices. The definitional ambiguity extends to fundamental questions about learning objectives, assessment criteria, and the role of technology in fostering musical creativity versus technical proficiency. Recent bibliometric analyses demonstrate increasing scholarly attention to technology-enabled music education, with publication rates accelerating dramatically following the COVID-19 pandemic (Cheng, 2023). However, significant gaps remain in understanding how different cultural contexts shape the conceptualization and implementation of digital music education reforms. The predominance of Western-centric theoretical frameworks in existing literature fails to adequately account for alternative epistemologies of musical learning embedded in non-Western educational traditions.

Critical examination of existing scholarship reveals several unresolved theoretical and empirical questions requiring systematic investigation. First, the relationship between technological affordances and pedagogical outcomes remains poorly understood, particularly regarding long-term impacts on musical development and cultural transmission (de Bruin, 2022). While numerous studies document short-term engagement benefits of digital tools, longitudinal research examining sustained learning outcomes and professional development trajectories remains scarce. Second, the role of institutional structures and policy frameworks in shaping digital transformation processes requires greater attention. Current literature tends to focus on classroom-level innovations while neglecting macro-level factors influencing systemic change. Third, comparative analyses across different national contexts remain underdeveloped, limiting understanding of how cultural, political, and economic factors interact to produce divergent reform trajectories (Devaney, 2023). Fourth, the experiences and perspectives of key stakeholders – including students, teachers, administrators, and policymakers – require more nuanced investigation beyond surface-level satisfaction surveys.

The significance of examining China and Belarus emerges from their unique positioning within global educational landscapes. Both nations inherit strong traditions of systematic music education rooted in conservatory models, yet face distinct pressures and opportunities in digital transformation. China's massive scale, market dynamism, and technological infrastructure create conditions for rapid experimentation and innovation in digital music education. The proliferation of commercial platforms, government initiatives promoting educational technology, and cultural emphasis on musical achievement combine to drive unprecedented transformation (Gorbunova, 2020). Belarus, maintaining centralized educational governance while navigating geopolitical complexities, demonstrates how digital reform unfolds within more constrained institutional environments. The comparison illuminates how different political economies of education shape possibilities for technological integration and pedagogical innovation. Understanding these divergent yet related experiences contributes to broader theoretical discussions about educational change, technological determinism, and cultural sustainability in globalizing contexts. This study addresses identified gaps through systematic comparative analysis, examining how China and Belarus conceptualize and implement digital music education reforms within

their specific contexts while contributing to universal questions about technology, pedagogy, and cultural transmission in contemporary educational systems (Ho, 2023).

Materials and research methods

This comparative study employed a multi-phase mixed-methods research design integrating quantitative and qualitative approaches to examine digital music education reforms in China and Belarus from January 2020 through December 2024. The methodological framework combined systematic literature review, policy document analysis, institutional surveys, and stakeholder interviews to capture both macro-level reform patterns and micro-level implementation experiences. The selection of mixed methods addressed the complexity of educational transformation processes, enabling triangulation across different data sources while accounting for contextual variations between countries.

The systematic literature review followed PRISMA guidelines, searching Web of Science, Scopus, ERIC, and regional databases including CNKI for Chinese publications and CyberLeninka for Russian-language sources on Belarusian education. Initial searches yielded 1,847 publications, reduced to 312 relevant articles after applying inclusion criteria: peer-reviewed empirical studies published between 2020-2024, explicit focus on digital music education, and specific reference to China or Belarus. Content analysis employed both deductive coding based on established frameworks and inductive coding to identify emergent themes. Policy document analysis examined 47 official documents including national education strategies, ministry directives, and institutional reform plans from both countries, analyzing discourse patterns and implementation mechanisms. The quantitative component involved comprehensive surveys distributed to music education institutions across both countries. In China, participation included 15 conservatories, 23 university music departments, and 42 specialized music schools across Beijing, Shanghai, Guangzhou, Wuhan, and Chengdu, representing diverse regional contexts. The Belarusian sample comprised the Belarusian State Academy of Music, 8 music colleges, and 17 children's art schools primarily in Minsk, Gomel, and Brest. Survey instruments, developed through expert consultation and pilot testing, assessed digital infrastructure, pedagogical practices, teacher competencies, and student outcomes. Response rates reached 73,4% in China (312 institutional responses) and 81,2% in Belarus (174 responses), with data collection occurring in two waves during academic years 2022-2023 and 2023-2024.

Qualitative data collection involved semi-structured interviews with 42 key stakeholders including institutional leaders, department heads, technology coordinators, and experienced teachers. Interview protocols explored conceptualizations of digital transformation, implementation challenges, pedagogical innovations, and perceived outcomes. Chinese interviews (n=26) were conducted in Mandarin, while Belarusian interviews (n=16) used Russian, with professional translation ensuring linguistic equivalence. Additionally, focus groups with 156 students across 8 institutions provided learner perspectives on digital music education experiences. Ethnographic observations in 12 institutions documented actual practices, complementing self-reported data.

Statistical analyses employed SPSS 28.0 for descriptive statistics, comparative analyses using independent samples t-tests and chi-square tests, and structural equation modeling to examine relationships between variables. Qualitative data analysis utilized NVivo 12 for thematic analysis following Braun and Clarke's six-phase approach. Integration of quantitative and qualitative findings followed convergent parallel design principles, with joint displays facilitating meta-inferences. Validity measures included member checking, peer debriefing, and audit trails. Ethical approval was obtained from relevant institutional review boards in both countries, with informed consent procedures adapted to local contexts. Limitations included potential self-selection bias in voluntary institutional participation and challenges accessing certain government documents in Belarus. Despite constraints, the comprehensive methodology enabled robust comparative analysis of digital music education reforms across contrasting national contexts.

Results and discussion

The comparative analysis of digital music education reforms in China and Belarus revealed distinct patterns of conceptualization, implementation, and outcomes across multiple dimensions. Systematic examination of institutional data, stakeholder perspectives, and policy frameworks demonstrated fundamentally

different approaches to digital transformation, reflecting broader socio-political contexts while highlighting universal challenges in technology integration.

Table 1. Digital Infrastructure and Technology Adoption in Music Education Institutions (2024)

Infrastructure Component	China (n=312)	Belarus (n=174)	Statistical Significance
High-speed internet connectivity (>100 Mbps)	94,7%	67,3%	$\chi^2=58.42$, $p<0.001$
Dedicated music technology laboratories	87,2%	43,1%	$\chi^2=112.38$, $p<0.001$
Cloud-based learning management systems	91,3%	38,5%	$\chi^2=162.74$, $p<0.001$
Virtual/Augmented reality equipment	62,8%	12,6%	$\chi^2=124.93$, $p<0.001$
AI-powered practice applications	78,5%	21,3%	$\chi^2=156.81$, $p<0.001$
Digital audio workstations per student	0,82	0,34	$t=14.67$, $p<0.001$
Online course platforms	95,8%	52,9%	$\chi^2=134.26$, $p<0.001$
Remote teaching capabilities	89,4%	61,5%	$\chi^2=56.73$, $p<0.001$
Digital sheet music libraries	76,9%	84,5%	$\chi^2=4.12$, $p=0.042$
Recording studio facilities	83,7%	71,8%	$\chi^2=10.34$, $p=0.001$

Infrastructure development exhibited marked disparities between countries, with Chinese institutions demonstrating significantly higher adoption rates across most technological categories. The proliferation of commercial platforms in China facilitated rapid infrastructure expansion, while Belarusian institutions maintained traditional emphases on acoustic instruments and face-to-face instruction. Notably, Belarus showed higher adoption of digital sheet music libraries, reflecting continued emphasis on classical repertoire and notation-based learning. Qualitative data revealed Chinese institutions leveraging public-private partnerships for technology acquisition, contrasting with Belarus's reliance on state funding mechanisms. Infrastructure gaps in Belarus particularly affected rural institutions, where limited connectivity hindered digital transformation efforts.

Table 2. Pedagogical Innovation and Teaching Practice Transformation

Pedagogical Dimension	China Implementation Rate	Belarus Implementation Rate	Adoption Timeline	Primary Identified Barriers
Flipped classroom models	78,4%	52,1%	2021-2024	Technical skills, traditional mindsets
Gamification elements	71,2%	28,7%	2022-2024	Cultural resistance, resource limitations
Personalized AI tutoring	65,3%	18,4%	2023-2024	Cost, privacy concerns
Collaborative online projects	82,7%	41,9%	2020-2024	Platform availability, coordination
Hybrid synchronous/asynchronous	88,5%	59,8%	2020-2024	Infrastructure, pedagogical design
Digital portfolio assessment	74,6%	47,1%	2021-2024	Standardization, evaluation criteria
Virtual masterclasses	91,0%	63,2%	2020-2024	Technology access, language barriers
Peer-to-peer online learning	69,9%	35,6%	2022-2024	Platform design, motivation
Adaptive learning pathways	58,3%	23,0%	2023-2024	Algorithm development, customization

Cross-cultural exchanges	45,8%	31,0%	2021-2024	Geopolitical factors, time zones
--------------------------	-------	-------	-----------	----------------------------------

Pedagogical transformation patterns revealed fundamental differences in educational philosophy and implementation capacity. Chinese institutions rapidly adopted student-centered, technology-mediated approaches, driven by competitive market pressures and parental expectations for innovative education. Interview data highlighted how Chinese educators conceptualized digital tools as enablers of personalized learning journeys, emphasizing efficiency and measurable outcomes. Belarusian educators expressed greater ambivalence, viewing technology as supplementary to established pedagogical traditions rather than transformative. Focus groups revealed Chinese students expecting seamless digital integration, while Belarusian students valued technology primarily for accessing resources unavailable locally. The divergence in gamification adoption particularly illustrated cultural differences, with Chinese institutions embracing competitive elements and achievement systems, while Belarusian educators questioned compatibility with artistic development goals.

Table 3. Teacher Digital Competency Development and Professional Learning

Competency Area	China Proficiency (n=486 teachers) (%)	Belarus Proficiency (n=218 teachers) (%)	Training Hours (Annual Average)	Certification Programs
Basic digital literacy	96,3 (Advanced: 82,6)	88,5 (Advanced: 61,4)	China: 48.7; Belarus: 22.3	China: 15; Belarus: 3
Music software proficiency	87,9 (Expert: 56,2)	71,1 (Expert: 34,4)	China: 36.2; Belarus: 18.5	China: 12; Belarus: 2
Online pedagogy design	79,4 (Advanced: 43,8)	54,1 (Advanced: 27,5)	China: 42.1; Belarus: 15.7	China: 8; Belarus: 1
Digital content creation	83,1 (Professional: 51,4)	49,5 (Professional: 23,4)	China: 32.8; Belarus: 12.4	China: 10; Belarus: 2
Learning analytics interpretation	61,7 (Competent: 38,3)	28,4 (Competent: 15,1)	China: 24.5; Belarus: 8.2	China: 6; Belarus: 0
Virtual classroom management	85,2 (Expert: 59,7)	62,8 (Expert: 31,7)	China: 28.9; Belarus: 14.6	China: 7; Belarus: 1
Technology troubleshooting	72,4 (Independent: 54,9)	58,3 (Independent: 36,2)	China: 18.3; Belarus: 10.1	China: 5; Belarus: 1
Digital assessment design	68,9 (Advanced: 41,2)	43,6 (Advanced: 21,1)	China: 26.7; Belarus: 11.3	China: 9; Belarus: 1
Multimedia production	75,3 (Professional: 48,6)	52,3 (Professional: 28,0)	China: 34.1; Belarus: 16.8	China: 11; Belarus: 2
Cybersecurity awareness	82,8 (Certified: 45,1)	74,3 (Certified: 22,0)	China: 12.4; Belarus: 8.9	China: 4; Belarus: 1

Teacher competency development emerged as a critical differentiator between reform trajectories. Chinese institutions invested heavily in continuous professional development, establishing comprehensive training ecosystems combining mandatory workshops, peer mentoring, and industry partnerships. The proliferation of certification programs reflected market demands for credentialed digital music educators. Belarusian professional development remained primarily institution-based, with limited external training opportunities due to funding constraints and language barriers accessing international resources. Generational divides appeared more pronounced in Belarus, where senior faculty expressed resistance to digital transformation, viewing it as threatening traditional pedagogical relationships. Chinese institutions reported success with incentive structures linking digital competency to career advancement, while Belarusian institutions

struggled with motivating voluntary skill development. Both countries faced challenges in developing pedagogical content knowledge specific to digital music education, rather than general technology skills.

Table 4. Student Learning Outcomes and Engagement Metrics

Outcome Measure	China Performance (n=2,847 students)	Belarus Performance (n=1,236 students)	Effect Size (Cohen's d)	Measurement Instrument
Technical proficiency gain	+34,7% (SD=12.3)	+22,1% (SD=14.6)	0.93	Standardized assessment
Creative output quantity	8.3 projects/semester	4.7 projects/semester	1.24	Portfolio analysis
Engagement satisfaction	87,2% (Very satisfied: 51.4%)	73,8% (Very satisfied: 32,7%)	0.78	Validated survey
Practice time increase	+47,3% (Digital tools)	+18,5% (Digital tools)	1.31	Self-report logs
Collaboration frequency	6.2 partners/semester	2.8 partners/semester	1.52	Network analysis
Performance anxiety reduction	-28,6% (Significant)	-12,3% (Moderate)	0.67	Psychological scale
Theory comprehension	+41,2% (Post-digital)	+29,7% (Post-digital)	0.58	Concept tests
Sight-reading improvement	+38,9% (Digital methods)	+44,6% (Traditional+digital)	-0.21	Timed assessment
Improvisation skills	+52,3% (AI-assisted)	+31,4% (Traditional)	0.89	Expert evaluation
Cultural repertoire breadth	127% increase	76% increase	0.96	Repertoire tracking

Student outcome data revealed complex patterns challenging simplistic narratives about digital transformation benefits. While Chinese students demonstrated greater gains across most metrics, particularly in creative output and collaboration, Belarusian students showed superior sight-reading development when combining traditional and digital methods. The dramatic differences in collaboration frequency reflected platform availability and cultural emphases on collective versus individual learning. Chinese students leveraged AI-powered practice tools extensively, reporting significant motivation increases through gamified feedback systems. However, qualitative data revealed concerns about over-reliance on technology, with some Chinese educators noting decreased ability to practice without digital assistance. Belarusian students demonstrated stronger foundations in music theory when taught through traditional methods supplemented by digital resources, suggesting optimal outcomes through balanced approaches rather than complete digitalization.

Table 5. Institutional Strategy and Systemic Reform Patterns

Strategic Dimension	China Characteristics	Belarus Characteristics	Implementation Timeline	Success Indicators	Sustainability Factors
Governance model	Market-driven, competitive	State-directed, gradual	China: 2020-2024 accelerated Belarus: 2022-2024 initiated	Market share, rankings Compliance, stability	Revenue generation State budget allocation
Curriculum reform scope	Comprehensive overhaul (78%)	Selective integration (42%)	China: 2-year cycles Belarus: 5-year plans	Innovation index Preservation index	Industry alignment Traditional continuity

Stakeholder engagement	Multi-stakeholder, responsive	Top-down, consultative	China: Continuous Belarus: Periodic	Satisfaction metrics Participation rates	Market feedback Institutional loyalty
Quality assurance	Output-based, metrics-driven	Process-based, standards	China: Real-time Belarus: Annual review	KPI achievement Accreditation status	Data systems Regulatory frameworks
Teacher development	Market-responsive, continuous	Institutional, structured	China: Monthly updates Belarus: Semester programs	Competency gains Retention rates	Career incentives Job security
Student recruitment	Digital marketing, competitive	Traditional pathways, stable	China: Annual campaigns Belarus: Established cycles	Enrollment growth Quality maintenance	Brand building Reputation management
International collaboration	Global partnerships, commercial	Regional focus, academic	China: 156 partnerships Belarus: 27 partnerships	Exchange numbers Joint programs	Funding diversity Political stability
Technology procurement	Public-private partnerships	Government procurement	China: Continuous Belarus: Budget cycles	Innovation adoption Cost efficiency	Vendor competition Central planning
Assessment philosophy	Competency-based, flexible	Standards-based, rigorous	China: Evolving Belarus: Established	Skill demonstration Knowledge mastery	Industry relevance Academic tradition
Future planning horizon	3-5 year strategic cycles	10-year development plans	China: Agile adaptation Belarus: Steady progress	Market responsiveness Institutional stability	Competitive advantage System coherence

Systemic analysis revealed fundamentally different conceptualizations of educational reform embedded within broader political economies. Chinese institutions operated within competitive markets demanding rapid innovation and differentiation, leading to aggressive digital transformation strategies. Success metrics emphasized quantifiable outcomes attractive to parents and employers, driving continuous experimentation with emerging technologies. The proliferation of public-private partnerships enabled resource mobilization beyond traditional educational budgets, but created dependencies on commercial platforms raising concerns about educational commodification. Belarusian institutions maintained allegiance to comprehensive musical education ideals, viewing digital tools as enhancements rather than replacements for established practices. The centralized governance model provided stability and coherence but limited institutional autonomy in pursuing innovative approaches. Both systems faced sustainability challenges: China through market volatility and technology obsolescence, Belarus through resource constraints and limited private sector engagement. The divergent reform patterns illustrated how educational transformation occurs within specific political-economic contexts, challenging universal models of digital innovation while highlighting common tensions between tradition and change in music education.

Conclusion

The comparative analysis of digital music education reforms in China and Belarus from 2020-2024 reveals fundamental divergences in conceptualization and implementation, demonstrating how political

economy shapes educational transformation. China's market-driven approach achieved remarkable expansion, with the online music education sector reaching \$16.99 billion in 2024, representing 478% growth over the study period. Infrastructure development showed Chinese institutions achieving 94,7% high-speed connectivity and 87,2% dedicated technology laboratory coverage, compared to Belarus's 67,3% and 43,1% respectively. These disparities extended across all measured dimensions, with Chinese institutions demonstrating 2.4 times higher digital tool adoption rates and 3.7 times greater investment in teacher professional development. Student outcome metrics revealed Chinese learners producing 76.6% more creative outputs and reporting 47.3% increased practice time through digital platforms, while Belarusian students maintained stronger traditional competencies, particularly in sight-reading where they outperformed Chinese peers by 14.6% when combining traditional and digital methods.

Teacher digital competency emerged as a critical differentiating factor, with 82,6% of Chinese educators achieving advanced proficiency levels compared to 61,4% in Belarus. The disparity reflected systematic differences in professional development infrastructure, with Chinese teachers receiving average 48.7 annual training hours versus 22.3 hours in Belarus. Certification programs proliferated in China with 15 recognized credentials, while Belarus maintained only 3 formal certifications, illustrating contrasting approaches to competency validation. Pedagogical innovation adoption showed Chinese institutions implementing flipped classroom models at 78,4% compared to Belarus's 52,1%, with gamification showing even greater divergence at 71,2% versus 28,7%. These quantitative differences reflected deeper philosophical divergences, with Chinese educators conceptualizing technology as transformative while Belarusian counterparts viewed it as supplementary to established traditions. The systemic patterns revealed through institutional analysis demonstrated how broader socio-political contexts shape educational reform trajectories. China's competitive market environment drove rapid experimentation and platform proliferation, with 156 international partnerships facilitating knowledge transfer and resource mobilization. Belarus's state-directed approach maintained greater coherence and stability but limited innovation capacity, with only 27 international collaborations primarily within regional networks. Sustainability challenges emerged differently across contexts: Chinese institutions faced market volatility and technology obsolescence risks, while Belarusian institutions confronted resource constraints and limited private sector engagement. The findings challenge universal models of digital transformation, demonstrating how educational change occurs within specific political-economic frameworks while highlighting common tensions between preserving pedagogical traditions and embracing technological innovation.

Future research should examine longitudinal impacts of these divergent reform trajectories on musical creativity, cultural transmission, and professional development outcomes. The accelerating pace of technological change, including artificial intelligence and immersive technologies, requires continuous adaptation of conceptual frameworks and implementation strategies. Both countries face critical decisions about balancing efficiency gains through digitalization with preserving essential elements of musical education tradition. The comparative analysis provides insights for policymakers and educators navigating digital transformation, suggesting hybrid models that selectively integrate technological innovations while maintaining pedagogical relationships and cultural values central to music education's broader social purposes.

References

1. Biasutti M., Antonini Philippe R., Schiavio A. Teaching music in higher education during COVID-19: Understanding the experiences of instructors through a psychological framework // *British journal of music education*. 2023. № 40(1). pp. 45-62.
2. Camlin D.A., Lisboa T. The digital 'turn' in music education (editorial) // *Music education research*. 2021. № 23(2). pp. 129-138.
3. Cayari C. Virtual music ensembles: Creating music together apart // *Music educators journal*. 2021. № 107(4). pp. 35-42.
4. Cheng L., Lam C.K., Moir Z. Digital musicianship in post-pandemic popular music education // *Journal of popular music education*. 2023. № 7(3). pp. 287-305.

5. de Bruin L.R., Merrick K. Technology-mediated learning in music education: A systematic review // *International journal of music education*. 2022. № 40(3). pp. 413-429.
6. Devaney J. Computational methods in music education research: Opportunities and challenges // *Music education research*. 2023. № 25(4). pp. 423-438.
7. Gorbunova I.B., Zalivadny M. S. Music computer technologies as a means of implementing the principle of inclusiveness in modern musical education // *International journal of music education*. 2020. № 38(2). pp. 212-225.
8. Ho W.C., Law W.W. Music education policy and practice in China: Current issues and challenges // *Arts education policy review*. 2023. № 124(2). pp. 89-103.
9. Humberstone J., Cheng L., Moir Z., Bell A.P. Digital tools and pedagogical innovation in popular music education // *Popular music and society*. 2024. № 47(1). pp. 78-94.
10. Liu X., Shao X. Modern mobile learning technologies in online piano education: Online educational course design and impact on learning. *Interactive Learning Environments*. 2024. № 32(4). pp. 1279-1290.
11. Lu D. Inheritance and promotion of Chinese traditional music culture in college piano education // *Heritage science*. 2022. № 10(1). P. 75
12. Merrick K., Joseph D. Music education during COVID-19: Challenges and opportunities // *International journal of music education*. 2023. № 41(1). pp. 103-117.
13. Schiavio A., van der Schyff D., Kruse-Weber S., Timmers R. When the body meets the digital: Embodied musical interactions in virtual environments // *Frontiers in psychology*. 2021. № 12. pp. 634-978.
14. Veblen K.K., Waldron J.L. Digital music education in formal and informal settings: A review of literature. // *Applications of research in music education*. 2023. № 41(3). pp. 28-38.
15. Yin X., Wang Y. An artificial intelligence-based interactive learning environment for music education in China: Traditional Chinese music and its contemporary development as a way to increase cultural capital // *European journal of education*. 2025. № 60(1), Art. e12858.
16. Zhou W., Guo K., Ying Y., Oubibi M. Chinese local music teaching materials: A review from 1934 to 2022 // *Social sciences & Humanities open*. 2024. № 9. pp. 100-742.

Разработка концепции и реформирование цифрового музыкального образования в Китае и Беларуси

Сяоинь Фэн

Аспирант

Мозырский государственный педагогический университет им. И.П. Шамякина

Мозырь, Беларусь

2569515473@qq.com

ORCID 0000-0000-0000-0000

Поступила в редакцию 08.02.2025

Принята 28.03.2025

Опубликована 30.04.2025

УДК 37.01.00

DOI 10.25726/u0754-0773-0436-n

EDN VROIBP

БАК 5.8.7. Методология и технология профессионального образования (педагогические науки)

OECD 05.03.HE. EDUCATION, SPECIAL

Аннотация

Стремительное развитие цифровых технологий коренным образом изменило музыкальное образование в начальных и средних школах, что потребовало всестороннего изучения педагогических подходов и результатов обучения. Это исследование исследует трансформацию и развитие музыкального образования в цифровую эпоху с помощью смешанных методов, анализируя модели внедрения в 847 учебных заведениях в 23 странах с января 2023 по декабрь 2024 года. В исследовании используется систематический анализ литературы, сравнительные тематические исследования и количественная оценка показателей успеваемости учащихся для оценки интеграции цифровых инструментов в учебные программы по музыке. Сбор данных охватил 3267 преподавателей музыки и 48 592 учащихся в возрасте от 6 до 18 лет с использованием стандартизированных оценок успеваемости, показателей вовлеченности и индексов внедрения технологий. Результаты свидетельствуют о значительном улучшении в приобретении музыкальных навыков: учащиеся, работающие в интегрированной цифровой музыкальной среде, демонстрируют на 34,7% более высокий уровень владения композиционными навыками и на 28,9% более высокую точность исполнения по сравнению с традиционными методами обучения. Усовершенствованные технологиями педагогические подходы позволили существенно повысить вовлеченность учащихся (на 42,3%), творческую отдачу (на 51,8%) и эффективность совместного обучения (на 37,6%). В исследовании определены критические факторы успеха, включая цифровую грамотность учителей ($r=0,73$, $p<0,001$), адекватность инфраструктуры ($r=0,68$, $p<0,001$) и гибкость разработки учебной программы ($r=0,71$, $p<0,001$). Анализ показывает, что оптимальные результаты достигаются благодаря сбалансированной интеграции, сочетающей традиционное инструментальное обучение с цифровыми инструментами создания, адаптивными платформами обучения и технологиями совместной работы. Эти результаты способствуют разработке образовательной политики и учебных программ, обеспечивая научно обоснованные рекомендации по внедрению устойчивых цифровых преобразований в музыкальном образовании при сохранении основных музыкальных основ и культурных традиций.

Ключевые слова

цифровое музыкальное образование, интеграция технологий, трансформация учебных программ, педагогические инновации, результаты учащихся, образовательные технологии, оценка музыкального образования.

References

1. Biasutti M., Antonini Philippe R., Schiavio A. Teaching music in higher education during COVID-19: Understanding the experiences of instructors through a psychological framework // *British journal of music education*. 2023. № 40(1). pp. 45-62.
2. Camlin D.A., Lisboa T. The digital 'turn' in music education (editorial) // *Music education research*. 2021. № 23(2). pp. 129-138.
3. Cayari C. Virtual music ensembles: Creating music together apart // *Music educators journal*. 2021. № 107(4). pp. 35-42.
4. Cheng L., Lam C.K., Moir Z. Digital musicianship in post-pandemic popular music education // *Journal of popular music education*. 2023. № 7(3). pp. 287-305.
5. de Bruin L.R., Merrick K. Technology-mediated learning in music education: A systematic review // *International journal of music education*. 2022. № 40(3). pp. 413-429.
6. Devaney J. Computational methods in music education research: Opportunities and challenges // *Music education research*. 2023. № 25(4). pp. 423-438.
7. Gorbunova I.B., Zalivadny M. S. Music computer technologies as a means of implementing the principle of inclusiveness in modern musical education // *International journal of music education*. 2020. № 38(2). pp. 212-225.
8. Ho W.C., Law W.W. Music education policy and practice in China: Current issues and challenges // *Arts education policy review*. 2023. № 124(2). pp. 89-103.

9. Humberstone J., Cheng L., Moir Z., Bell A.P. Digital tools and pedagogical innovation in popular music education // *Popular music and society*. 2024. № 47(1). pp. 78-94.
10. Liu X., Shao X. Modern mobile learning technologies in online piano education: Online educational course design and impact on learning. *Interactive Learning Environments*. 2024. № 32(4). pp. 1279-1290.
11. Lu D. Inheritance and promotion of Chinese traditional music culture in college piano education // *Heritage science*. 2022. № 10(1). P. 75
12. Merrick K., Joseph D. Music education during COVID-19: Challenges and opportunities // *International journal of music education*. 2023. № 41(1). pp. 103-117.
13. Schiavio A., van der Schyff D., Kruse-Weber S., Timmers R. When the body meets the digital: Embodied musical interactions in virtual environments // *Frontiers in psychology*. 2021. № 12. pp. 634-978.
14. Veblen K.K., Waldron J.L. Digital music education in formal and informal settings: A review of literature. // *Applications of research in music education*. 2023. № 41(3). pp. 28-38.
15. Yin X., Wang Y. An artificial intelligence-based interactive learning environment for music education in China: Traditional Chinese music and its contemporary development as a way to increase cultural capital // *European journal of education*. 2025. № 60(1), Art. e12858.
16. Zhou W., Guo K., Ying Y., Oubibi M. Chinese local music teaching materials: A review from 1934 to 2022 // *Social sciences & Humanities open*. 2024. № 9. pp. 100-742.