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Navigating Ethical Complexities: Responsible AI Integration in Music Education

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Abstract

The integration of artificial intelligence (AI) into music education presents a wide spectrum of opportunities for personalized learning, creative exploration, and expanded access. However, this technological advancement also raises profound ethical challenges that touch upon the integrity, inclusivity, and human-centered nature of music pedagogy. A review of the literature reveals that while AI tools such as adaptive tutors and generative composition systems can enhance student engagement, they may also reinforce cultural and stylistic biases embedded in their training data. As AI technologies increasingly influence human musical expression, critical questions emerge regarding the potential erosion of original creativity and the role of human agency in artistic processes. The safeguarding of student data privacy, ensuring equitable access to technological resources, and preserving the intrinsic value of human creativity are issues of paramount urgency. This paper examines these challenges from both global and Kenyan perspectives, advocating for the collaborative development of ethical frameworks involving educators, technologists, policymakers, and learners. Such frameworks must prioritize inclusivity, transparency, and pedagogical integrity to guide the responsible adoption of AI. The paper proposes guiding principles for ethical AI integration, including the co-design of AI tools with diverse stakeholders, rigorous impact assessment, and the embedding of ethical literacy in teacher training. By prioritizing ethics, inclusion, and creativity, stakeholders can harness the benefits of AI in music education while mitigating its inherent risks.

Keywords: Artificial intelligence, music education, ethics, creativity, data privacy, equity, Kenya.

Introduction

Since the dawn of the digital age, the global community has witnessed a plethora of technological advancements that have reshaped society. The ubiquity of artificial intelligence (AI) is evident in daily life, from targeted online advertisements and autonomous vehicle features to algorithmic screening of job applications (Hogenhout, 2021; World Economic Forum, 2024). The emergence of Generative AI (GenAI) has particularly disrupted all spheres of life. GenAI is an artificial intelligence technology that automatically generates content in response to prompts written in natural-language conversational interfaces (Miao & Holmes, 2023). AI models are capable of creating new content, including text, images, music, or code, based on patterns learned from training data; these systems can produce original outputs that mimic human-created content (Republic of Kenya, 2025). In the 21st century, the incorporation of AI in education is inevitable, as it opens numerous opportunities for teaching and learning. These opportunities include advancements in research and innovation, and increased teaching and learning engagement because of AI's capabilities to personalize instruction (Vincent-Lancrin & van der Vlies, 2020). In the Kenyan context, the potential applications of GenAI tools (such as AI music generators and large language models for lyric writing) are significant. However, their rise brings to the forefront key concerns such as authorship and authenticity, bias in training data, equity of access, and the impact on creativity. AI introduces controversies that touch on inclusive teaching practices, the potential for algorithmic bias, and the challenge of ensuring equitable representation (Chima et al., 2024; Mateo, 2024). Moreover, ethical questions intensify as new forms of AI emerge, creating an atmosphere of perplexity. In music education, these concerns manifest as biases in music selection and evaluation, issues of authorship and intellectual property in AI-generated compositions, and the impact of AI on the role of human educators. As Cheng (2025) notes, "The emergence of generative AI poses challenges to the ways that music is taught in schools" (p. 1). Although the National Artificial Intelligence Strategy for Kenya (2025-2030) aims to integrate AI in critical sectors like education for national development, the potential for misuse elevates these ethical complexities (Republic of Kenya, 2025; UNESCO, n.d.). This situation prompts a critical discourse on the responsible integration of AI in music education.

This paper examines the ethical complexities of emerging GenAI technologies to advocate for their responsible integration into music education, combining a global perspective with a specific focus on the Kenyan context. It contributes to the conversation on how AI's ethical challenges in music education can be navigated for conscious implementation and intentional usage by educators, learners, and other stakeholders. It is crucial to empower the music education community and content creators to safeguard the integrity of the art form for the benefit of society at large (Qing & Kee, 2025).

The Problem

The impact of AI on human life in the 21st century is ubiquitous. The integration and application of AI technologies, a trend accelerated by the global shift to remote learning during the COVID-19 pandemic, has greatly influenced teaching and learning experiences in education. According to the United Nations Sustainable Development Goal 4 (SDG 4), quality education should provide all learners with an opportunity to acquire the knowledge and skills needed to promote sustainable development and lifestyles by 2030 (UNESCO, 2018). Target 4.7 specifically envisions an education that promotes human rights, gender equality, a culture of peace, global citizenship, and an appreciation for cultural diversity (The Global Goals, n.d.). Unethical or inequitable integration of AI poses a direct threat to achieving this goal.

In this respect, Kenya is preparing to become a regional leader in AI research and development, innovation, and commercialization while ensuring responsible and ethical AI adoption that benefits all its citizens (Republic of Kenya, 2025; UNESCO, n.d.). This initiative reinforces national digital transformation efforts such as the Digital Literacy Program. The application of AI in education has the potential to address several longstanding challenges faced by the Kenyan education system, such as limited resources, teacher shortages, and inequitable access to quality education (Owidi, 2025). Despite this ambition, significant systemic barriers threaten to impede the process. A systematic review by Owidi (2025) highlights the stark realities on the ground: disparities in infrastructure between urban and rural areas, limited digital literacy among teachers and students, and accessibility issues for students with disabilities create formidable obstacles. The uneven distribution of resources and inadequate teacher training impede the full utilization of AI technologies. This analysis reveals a critical tension: while Kenya's AI strategy envisions an acceleration into a technologically advanced future, historical and current data suggest a risk of accelerating over foundational problems. Without first addressing the persistent challenges of infrastructure and teacher training, the push for AI integration could inadvertently create a two-tiered educational system, deepening the very inequalities it aims to solve.

In formal music education, AI poses both profound opportunities and significant challenges (Cheng, 2025). This paper examines these challenges from global and Kenyan perspectives,

advocating for the collaborative development of ethical frameworks involving educators, technologists, policymakers, and learners. These frameworks must prioritize inclusivity, transparency, and pedagogical integrity to ensure that AI serves as a tool for empowerment rather than exclusion.

Objectives

This paper examines emerging GenAI technologies in music education and explores their ethical implications, combining a global perspective with the Kenyan context. This is expected to contribute to conscious implementation and intentional usage by music educators, learners, and other stakeholders. The specific objectives are:

- i. To examine emerging GenAI technologies and their pedagogical applications in music education.
- ii. To analyse the principal ethical challenges raised by the integration of GenAI in music education, including bias, equity, and data privacy.
- iii. To propose a framework of responsible strategies for integrating GenAI into music education, tailored to address both global principles and the specific context of Kenya.

Literature Review

To analyse how music educators might integrate GenAI, this paper adopts a dual theoretical lens that combines a pragmatic framework for technological implementation with a moral framework for ethical decision-making. The first is the Technological Pedagogical Content Knowledge (TPACK) framework, developed by Mishra and Koehler (2006). Building on Shulman's (1986) concept of Pedagogical Content Knowledge (PCK), TPACK posits that effective teaching with technology requires more than isolated knowledge of technology, pedagogy, or content. Instead, it lies at the complex intersection of these three domains (Mishra & Koehler, 2006). A music teacher must not only understand musical concepts (Content Knowledge) and effective teaching methods (Pedagogical Knowledge) but also how specific AI tools (Technological Knowledge) can embody and enhance those concepts and methods. The application of TPACK means, for example, choosing AI music generators that align with curriculum goals, designing activities where AI supports rather than replaces student creativity, and developing assessment methods that account for AI-assisted work.

The second framework is the Ethics of Care, which originated in feminist philosophy, most notably in the work of Nel Noddings (1984). The Ethics of Care emphasizes empathy, relationships, and

contextual judgment in moral decision-making, standing in contrast to abstract, rule-based ethical systems (Noddings, 1984). In an educational setting, it implies that technology use should prioritize the well-being of students and the caring relationships between teachers and learners. For GenAI in music education, an ethics-of-care perspective prompts critical questions: How does this technology affect the teacher–student relationship? Does it support students’ creative development and respect their cultural identities? Does it introduce risks or accessibility issues that could alienate some students? The framework insists that ethical AI use must nurture each student’s holistic growth within their specific context. In combination, these frameworks create a powerful analytical lens. While TPACK guides the analysis of *how* to effectively integrate AI tools from a technical and pedagogical standpoint, the Ethics of Care provides the essential moral compass, compelling a focus on *why* such integration is being pursued and ensuring it prioritizes the holistic well-being and creative growth of every student. This dual approach allows for a balanced, context-sensitive analysis that enhances learning while maintaining empathetic, student-centered values.

Methodology

This study employed a systematic literature review to examine the ethical complexities of AI integration in music education. This approach was chosen to minimize bias and ensure that the findings and recommendations are evidence-based. A research plan was developed to structure the paper's argument, aligning with the stated objectives. The selection method included scholarly articles, conference proceedings, policy documents, and industry reports that were directly related to the topic. Multiple databases were searched, including RILM Abstracts of Music Literature, ERIC, JSTOR, Music Index, Semantic Scholar, and legal databases such as HeinOnline. Search terms included combinations of artificial intelligence, generative AI, music education, ethics, creativity, data privacy, equity, and Kenya.

To ground the global literature in a specific context, the review also included an analysis of Kenyan education policy documents, such as the National Artificial Intelligence Strategy (2025-2030) and the National Digital Master Plan (2022–2032), alongside international reports on AI in education from organizations like UNESCO and the OECD. Data from the selected sources were analyzed and synthesized thematically in accordance with the paper's objectives, allowing for a structured presentation of emerging technologies, their ethical implications, and proposed strategies for responsible integration.

Discussion

The following review of literature is structured around the paper's objectives, unveiling the prevailing GenAI technologies and their impact on music education with a focus on ethical issues and the prospects for responsible integration.

Emerging GenAI Technologies and Applications in Music Education

Rapid technological advancements are greatly influencing both music education and the broader music industry. A wide range of AI applications are already being used in music creation and consumption worldwide, spurring reflection on the need for curricula revisions to equip learners with the knowledge and skills to navigate a new job market.

Globally, powerful GenAI tools are democratizing music creation. Models like Google's MusicLM, which generates songs from textual descriptions, and Meta's MusicGen make it possible for amateurs to compose high-quality music automatically (Cheng, 2025). Large-scale transformer models, such as OpenAI's Jukebox, can generate raw-audio songs with coherent melodies and vocals, pushing the boundaries of music production (Dhariwal et al., 2020). Concurrently, pedagogical applications have emerged that harness GenAI for personalized instruction, adaptive feedback, and automated assessment. In music education, the use of GenAI ranges from intelligent tutoring systems and composition assistants to interactive ear-training applications that collectively foster more engaging and inclusive learning experiences (Sánchez-Jara et al., 2024).

AI-powered personalization tools can generate customized exercises, such as chord recognition drills from any audio track, and create adaptive method books that align with individual interests and skill levels, thereby reducing cognitive load and promoting sustained motivation (Sanganeria & Gala, 2024). These emerging technologies promise to reshape pedagogical practice and industry workflows alike, driving new opportunities for creativity, accessibility, and collaboration.

In formal music education, scholars are beginning to study how GenAI affects teaching and learning. A recent review by Cheng (2025) argues that AI-enabled composition tools encourage innovative pedagogical approaches and can make music creation more accessible to students. For instance, voice-cloning AI could allow students to experiment with singing techniques they otherwise could not access. Educational technology commentators note that AI can personalize learning, act as a tutor, and free teachers to focus on higher-level concepts. As Vincent-Lancrin and van der Vlies (2020) describe, AI systems can adapt pedagogical materials to the level of individual students, make predictions about the next steps in the learning process, and assist learners in mastering subjects at their own pace.

These tools are reshaping personalized music instruction and accessibility. Platforms can create tailored exercises and challenges that improve student motivation, while co-creative platforms like Calliope and ComposeOn position AI as a creative partner that lowers cognitive load, enabling students to focus more on musical ideas. Furthermore, AI production tools such as LANDR and Moises mirror real-world music industry workflows, freeing educators to focus on mentoring and critical thinking (Ruiz, 2025). This alignment with professional practice equips students with practical, industry-relevant skills.

Enhancing Accessibility and Inclusion through AI

A particularly promising application of GenAI is its potential to expand inclusive access for learners with disabilities and those from marginalized backgrounds, who have historically

encountered barriers in traditional music education settings. Recent innovations are creating new pathways for musical expression and participation. Gaze-controlled interfaces like the EyeHarp demonstrate how individuals with severe motor impairments can learn, perform, and compose music using only eye movements, unlocking expressive potential that was previously inaccessible (Vamvakousis & Ramirez, 2016). The powerful impact of such technology is exemplified in the case of Alexandra Kerlidou, a young harpist with cerebral palsy who performs using gaze-tracking software, highlighting the transformative effect on both skill development and self-confidence (Kyvrikosaios, 2021).

Systematic reviews of Accessible Digital Musical Instruments (ADMIs) underscore a growing ecosystem of customizable, multimodal tools (ranging from gesture-tracking apps to adaptive controllers) that facilitate participation for visually impaired, physically disabled, and neurodiverse students alike (Frid, 2019). As Vincent-Lancrin and van der Vlies (2020) note, AI can provide extensive support for students with special needs. AI-powered wearables can assist visually impaired students in reading books and recognizing faces, while augmented and virtual reality (AR/VR) technologies can support the learning and engagement of students with health impairments. For example, students with autism can improve social skills by interacting with virtual characters in a safe, controlled environment. Furthermore, AI-based diagnosis tools are now used in many countries to detect special needs such as dyslexia, dyscalculia, or Attention Deficit Hyperactivity Disorder (ADHD), enabling earlier and more targeted interventions (Drigas & Ioannidou, 2013). These advances signal a shift towards genuinely inclusive pedagogies that center learner diversity. By involving disabled users in the design phase, as demonstrated by tools like EyeHarp, technology can be developed to ensure that all students can access, create, and enjoy music on their own terms.

GenAI in the Kenyan Context

Although Kenya is actively developing its AI ecosystem, significant challenges remain. The nation is working on a national AI strategy and has foundational laws like the Data Protection Act (2019) to govern data and AI (UNESCO, n.d.). However, the country also faces a stark digital divide. According to UNESCO data, only 17% of rural Kenyans have internet access, compared to 44% in urban areas (UNESCO, n.d.). While Kenyan university students show high rates of GenAI adoption in their studies, many schools lack the basic infrastructure to incorporate these tools into classrooms (Owidi, 2025). Historically, technology use in Kenyan music education has been limited. A seminal study by Achola (2007) found that while computer technology had become an integral tool for musicians globally, Kenyan music curricula remained focused on traditional instruments. The study observed a lack of qualified music teachers trained in technology and a scarcity of computers or electronic keyboards in schools; technology beyond educational broadcasting was rare. This research established a crucial baseline, indicating that even before the advent of advanced AI, foundational ICT integration was a major challenge.

Today, Kenya has introduced significant technology policies, including the National Artificial Intelligence Strategy (2025-2030), launched in March 2025 (TechAfrica News, 2025). This landmark strategy sets a formal roadmap for the development, adoption, and governance of AI, with a key objective being the creation of a robust legal framework for ethical and responsible deployment (Republic of Kenya, 2025; UNESCO, n.d.). The nation's Digital Economy Blueprint (2019) and Digital Masterplan (2022–2032) further emphasize the development of ICT skills and digital infrastructure nationwide. Despite these forward-looking policies, the systemic issues identified by Achola (2007) nearly two decades ago persist. A recent systematic review by Owidi (2025) confirms that inadequate infrastructure, insufficient teacher training, and inequitable access continue to hinder the effective use of technology in education. This situation presents a significant risk: attempting to leapfrog from a weak ICT foundation directly to advanced AI integration may not be just ambitious but perilous. Such a move could result in AI tools being accessible only to an urban elite with existing infrastructure and digital literacy, thereby using a technology intended for development to instead deepen and entrench existing socio-economic inequalities.

In summary, Kenya provides an informative case of a country eager to adopt AI and digital learning but one that must first address systemic inequities in access, training, and cultural relevance. As in other contexts, Kenyan educators will need robust guidance on integrating GenAI ethically so that all students can benefit without unintended harm.

Ethical Issues raised by GenAI in Music Education

While the use of GenAI is gaining prominence in music education, its application is largely in an experimental stage, resulting in many ethical complexities. As Ruiz (2025, p. 1) states, “AI has revolutionized how music is created, distributed, and consumed,” but this revolution is not without its challenges. Experts emphasize the need for trustworthy AI principles, urging that the success of any educational innovation is ultimately determined by human behavior and guided by established ethical frameworks (Miao & Holmes, 2023).

Core Ethical Dilemmas in Practice

GenAI is increasingly shaping the music industry, influencing composition, production, performance, and education. Despite numerous advantages, its integration raises significant ethical concerns related to transparency, fairness, accountability, and privacy (Qing & Kee, 2025).

Bias, Equity, and Access

One of the most pressing ethical issues is algorithmic bias. AI models trained predominantly on Western music corpora may fail to represent global musical diversity, potentially reinforcing cultural stereotypes or marginalizing non-Western traditions (Cheng, 2025). This can lead to a homogenization of musical output, narrowing students' understanding of what constitutes ‘good’ music. This problem is compounded by issues of equity and access. As an emerging technology, GenAI is not universally accessible. Paywalls for advanced tools and the need for high-performance hardware and reliable internet risk widening existing inequalities, creating a digital

divide where only affluent students and schools can fully benefit (Chima et al., 2024; Cheng, 2025).

Data Privacy and Security

The reliance on AI in music education poses significant challenges related to data privacy. Educational institutions collect and analyse vast amounts of student data to personalize learning, but this practice raises concerns about security and potential misuse (Sywelem & El-sayed Mahklouf, 2024; Ugogi, 2025). In the absence of established, transparent, and accountable practices, the collection of sensitive student data for performance tracking and assessment creates vulnerabilities. This is a particularly salient issue in Kenya, where the Data Protection Act (2019) provides a legal framework that must be carefully navigated (UNESCO, n.d.).

Creativity, Authorship, and Deskilling

The proliferation of GenAI tools that create music from simple prompts has democratized creativity but also raised questions about originality and the value of human artistry. Educators caution that overreliance on GenAI could undermine the development of fundamental musicianship skills, potentially stifling students' creative confidence and demotivating them from exploring ideas beyond what an algorithm can offer (Cheng, 2025). Furthermore, complex issues of authorship and intellectual property arise with AI-generated compositions, creating uncertainty for both students and educators. As Qing and Kee (2025) note, navigating this new landscape requires a clear understanding of the ethical and legal boundaries of AI-assisted creation.

Teacher Autonomy and Professionalism

Finally, the integration of AI impacts the role of the human educator. While AI can be a powerful tool for augmenting teaching (automating administrative tasks and providing data-driven insights) it also carries the risk of mechanizing the profession. As Williamson (2023) argues, an overreliance on AI for lesson planning, assessment, and feedback could "robotize" the role of the human teacher, diminishing their professional autonomy and the crucial human-to-human connection that lies at the heart of effective pedagogy.

Responsible Ethical Strategies for Integrating GenAI into Music Education

Addressing these ethical challenges requires proactive, human-centered governance. UNESCO's guidance on GenAI calls for the protection of data privacy and the ethical validation of AI tools before their use in the classroom (Miao & Holmes, 2023; UNESCO, 2023). This ensures that future generations of music professionals are prepared to "navigate the ethical landscape of AI and foster responsible and beneficial uses of this transformative technology within their chosen field" (Qing & Kee, 2025, p. 1225). Similarly, the OECD's Digital Education Outlook highlights the need for frameworks that balance innovation with student safety as nations formulate policies on GenAI in education (Vincent-Lancrin & van der Vlies, 2020).

Several frameworks have been proposed to guide this process. Ruiz (2025) introduces the ART-Official Framework, a holistic model designed specifically for music education. It is built on four guiding principles:

- **Yield:** Embrace AI as a collaborative partner that enhances, rather than replaces, human creativity.
- **Humanity:** Place originality and emotional authenticity at the forefront, resisting algorithmic conformity.
- **Virtue:** Promote ethical practices, ensuring fairness, inclusivity, and respect for creators' rights.
- **Harmony:** Recognize the value of imperfection as essential to artistic growth.

This framework provides a philosophical and practical guide for educators to integrate AI while preserving the human aspects of artistry.

More broadly, the ethical integration of AI in education can be guided by a set of well-established principles. As synthesized by Sywelem and El-sayed Mahklouf (2024) and reflecting principles outlined by Floridi et al. (2018) and the European Commission (2019), these include:

- **Beneficence and Non-maleficence:** AI technologies should be implemented to maximize benefits for students while minimizing potential harm.
- **Transparency and Accountability:** Stakeholders must have a clear understanding of how AI is used and be able to hold decision-makers accountable.
- **Equity and Inclusion:** AI should promote access and opportunity for all students, addressing the digital divide and algorithmic bias.
- **Privacy and Data Governance:** Student privacy must be protected through responsible data management, adherence to data protection laws, and informed consent.
- **Educator Professionalism and Autonomy:** Educators must be supported with the training and resources needed to integrate AI effectively while preserving their professional judgment.
- **Continuous Reflection and Improvement:** Stakeholders should critically and continuously assess the ethical implications of AI integration and adapt their practices accordingly.

These frameworks, when applied in concert, offer a robust approach to navigating the complexities of AI in music education. The following table provides a comparative analysis to clarify their distinct contributions.

Table 1

Comparative Analysis of Ethical Frameworks for AI in Music Education

Framework Name	Core Principle(s)	Primary Focus	Practical Implication for Music Educators
UNESCO Human-Centered Approach	Human rights, inclusion, transparency, accountability	Governance and policy	Advocate for school policies on data privacy, equitable access to technology, and the ethical vetting of AI tools.
Ruiz's ART-Official Framework	Yield, Humanity, Virtue, Harmony	Pedagogical practice and student artistry	Design lessons where AI is a creative partner, not a replacement; facilitate discussions on authorship and cultural bias with students.
Noddings' Ethics of Care	Relational responsibility, empathy, contextual judgment	Teacher-student relationship and student well-being	Evaluate AI tools based on whether they foster connection, support individual student growth, and enhance caring pedagogy, rather than just efficiency.

Table 1 compares three major ethical frameworks applicable to AI in music education, outlining their core principles, primary focus, and practical implications for educators in the classroom. By prioritizing these ethical standards and values throughout the integration process, stakeholders can promote the responsible and beneficial use of AI in education.

Recommendations and Areas for Further Study

Based on the synthesis of global literature and the specific context of Kenya, the following recommendations are proposed for the ethical integration of GenAI into music education:

Develop AI Literacy Programs for Music Teachers: Implement comprehensive professional development focused on AI tools in music. This training should cover technical understanding (how AI music generators work), pedagogical design (how to incorporate AI into lessons), and ethical considerations (data privacy, attribution, bias). This aligns with the TPACK framework's goal of building teachers' integrated Technological and Pedagogical Knowledge and addresses the critical need for teacher preparedness identified in the Kenyan context (Mishra & Koehler, 2006; Owidi, 2025).

Integrate AI Ethics into the Curriculum: Explicitly teach students about the ethics of AI in music. Lessons should address copyright, authorship, cultural representation, and algorithmic bias. Guided by an Ethics of Care, educators should foster empathy by having students reflect on how their creative choices with AI impact communities and artists. This ensures students develop critical digital citizenship and creative integrity (Noddings, 1984; Ruiz, 2025).

Ensure Equitable Access: Allocate resources to improve ICT infrastructure in all schools, with a strategic focus on underserved rural and marginalized areas. Government and private sector partners should collaborate to provide affordable hardware (computers, tablets) and explore offline or low-bandwidth AI solutions where internet connectivity is unreliable. This directly addresses the digital divide highlighted as a primary barrier in Kenya and prevents AI from becoming a privilege of affluent schools only (Owidi, 2025; UNESCO, n.d.).

Create Clear Institutional Usage Guidelines: Schools and ministries of education should develop and adopt clear policies governing the use of AI in assignments, assessments, and creative projects. These guidelines should define acceptable versus unacceptable uses of AI-generated content, establish protocols for disclosure and citation, and provide a framework for academic integrity. This tackles concerns about plagiarism and fairness, providing clarity for both students and educators (Miao & Holmes, 2023; Ruiz, 2025).

Foster Culturally Relevant AI: Encourage the development and use of AI models trained on diverse musical traditions, including Kenyan genres such as Benga, Isukuti, and Taarab. Partnerships between technology developers, local musicians, and cultural heritage institutions could create AI datasets that honor and preserve indigenous music. This would counteract the Western-centric bias prevalent in current tools and support Kenya's rich cultural diversity (Cheng, 2025; Mwita & Owino, 2025).

Promote Collaborative Learning Communities: Establish communities of practice where music teachers can share AI-integrated lesson plans, discuss challenges, and co-create pedagogical strategies. This peer network approach embodies the relational spirit of the Ethics of Care by emphasizing mentorship and mutual support, while also building a collective TPACK as teachers learn from one another's experiences with AI (Noddings, 1984).

Monitor and Evaluate Continuously: Institute ongoing research and evaluation of AI initiatives in music classrooms. Collect qualitative and quantitative feedback from teachers and students to identify issues early, assess pedagogical impact, and adapt approaches. Policymakers should treat

AI integration as an iterative process, continually balancing innovation with ethical safeguards and student well-being (Panigrahi, 2020). Implementing these steps can help ensure that GenAI becomes a valuable ally rather than a threat in music education. By investing in people (through training, ethical guidance, and supportive communities) as much as in technology, educational systems can achieve the human-centered vision advocated by global and local stakeholders.

Conclusion

Generative AI holds transformative potential for music education worldwide, enabling new forms of creativity, personalization, and engagement. However, this study demonstrates that realizing these benefits ethically requires conscious, context-sensitive implementation. The Kenyan case illustrates both the enthusiasm for AI as a means to democratize music creation and the profound caution required to address its risks, from plagiarism and deskilling to the exacerbation of inequality. These findings echo global analyses: without robust ethical guardrails, AI can amplify existing biases and create new dilemmas. To balance innovation with responsibility, educators must be equipped with both technical knowledge and ethical insight. The TPACK framework reminds us that technology is only effective when it is thoughtfully integrated with sound pedagogy and deep content expertise. Concurrently, an Ethics of Care perspective urges us to place students' well-being, relationships, and holistic growth at the center of all technological choices. In practice, this means building AI literacy, crafting clear and equitable policies, and fostering caring, critical learning environments.

Ultimately, the integration of GenAI in music education must be intentional and reflective, not haphazard. As UNESCO guidance emphasizes, a human-centered approach is crucial. For Kenya and similarly positioned countries, this entails a concerted effort to bridge digital divides, value and incorporate local musical traditions in AI tools, and actively involve teachers in the co-creation of AI-rich curricula. When implemented thoughtfully, GenAI can enhance students' musical engagement and expand educators' pedagogical toolkit. By proactively addressing the ethical complexities identified in this paper, policymakers and educators can ensure that AI becomes a positive force for creativity and inclusion in music education, rather than a source of unintended harm.

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Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Licensing Statement

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