

Whose Intelligence? Whose Music? Critical Reflections on AI in Music Education

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Abstract

This commentary critically examines the integration of artificial intelligence (AI) into music education through two guiding questions: Whose intelligence is encoded within these systems? Whose music is legitimised and reproduced through them? While often promoted as neutral and innovative, AI systems are shaped by cultural biases, economic logics, and epistemological assumptions that privilege Western classical and commercial repertoires. In doing so, they risk narrowing definitions of intelligence, standardising musical practices, and reproducing existing inequalities. Drawing on critical pedagogy and decolonial perspectives, the commentary argues that AI in music education should be approached not as a technical solution but as a contested site of knowledge production. It highlights the dangers of epistemic erasure, technocratic pedagogy, and data colonialism, while outlining pathways for transformation: decolonising datasets, cultivating critical digital literacy, reclaiming pedagogy from the logic of efficiency, and fostering alliances across disciplines and communities. By reframing AI as an object of critique and dialogue, this commentary seeks to open possibilities for more inclusive, equitable, and transformative practices in music education.

Keywords: artificial intelligence; music education; critical pedagogy; decolonial education; educational equity; digital literacy; cultural politics



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Introduction

In recent years, artificial intelligence (AI) has moved swiftly from the margins of experimental innovation to the centre of educational discourse. Advocates suggest that AI can democratise access to learning, personalise instruction, and extend creative possibilities in domains such as music education (Merchán Sánchez-Jara et al. 2024). From adaptive feedback platforms to algorithmic composition tools, its potential is often framed in terms of efficiency, accessibility, and innovation. Yet behind these optimistic narratives lies a set of questions seldom foregrounded in mainstream discussions: Whose intelligence is encoded within these systems? Whose music is legitimised and reproduced through them?

These questions are particularly urgent for music education, a field inseparable from cultural identity, aesthetic traditions, and pedagogical philosophies (Hebert 2022). Unlike mathematics or grammar, music is never neutral; it carries histories of power, belonging, and resistance. When algorithmic systems enter this terrain, they embody not only technical capacities but also the cultural biases, economic logics, and epistemological assumptions of their designers (Bryan-Kinns and Li 2024). The reliance of many tools on datasets dominated by Western classical repertoires or commercial popular music illustrates this point (Marták, Hu, and Widmer 2024). Such reliance risks narrowing what counts as “music”, marginalising indigenous, oral, and community-based traditions that resist algorithmic codification (Bryan-Kinns and Li 2024).

The policy discourse that champions AI as an emblem of innovation and modernisation adds another layer of complexity. Efficiency and equality of access are emphasised, but these narratives obscure uneven realities. Resource-poor schools often lack the infrastructure to integrate such technologies, while privileged institutions consolidate their advantage through access to cutting-edge systems. Moreover, when algorithmic platforms privilege replication and standardisation, students may be positioned as passive consumers of pre-packaged content rather than as critical creators. This tendency echoes Paulo Freire’s critique of the “banking model of education” (Freire 1970), in which learners are treated as repositories of information rather than agents capable of questioning, dialogue, and transformation.

A critical pedagogy perspective insists that these dynamics must be interrogated (Hebert 2022). Who determines which musical forms are included in training datasets? Who accrues economic and cultural benefits from the spread of algorithmic systems, and who is left behind? How might such technologies reshape the teacher’s role—from mediator of cultural exploration to operator of technological systems? And, crucially, what are the consequences for students’ ability to cultivate creativity, agency, and critical consciousness through music learning?

This commentary situates itself within the tradition of the journal, *Education as Change*, where critique is understood as a constructive and transformative act. Rather than evaluating technical capacities, the discussion foregrounds cultural, political, and

pedagogical implications. It argues that without explicit attention to questions of equity, diversity, and social justice, AI in music education risks reinforcing hegemonic canons while further marginalising alternative knowledge traditions (Bryan-Kinns and Li 2024; Shakespeare et al. 2020). The commentary therefore develops two interrelated lines of enquiry: Whose intelligence?—concerning the epistemologies and assumptions embedded in algorithmic systems; and Whose music?—concerning the cultural and pedagogical consequences of privileging certain repertoires over others (Merchán Sánchez-Jara et al. 2024). By framing AI in music education through these critical questions, the commentary seeks to open possibilities for more inclusive, dialogical, and transformative practices.

Whose Intelligence?

Artificial intelligence in education is frequently celebrated as the embodiment of “intelligence” made accessible to learners (Merchán Sánchez-Jara et al. 2024). Promotional narratives describe AI as neutral, objective, and universally applicable. Yet such claims obscure a fundamental reality: Intelligence is never culturally innocent. It is always shaped by the data that feed algorithmic systems, the epistemologies that inform their design, and the institutional agendas that govern their deployment (Bryan-Kinns and Li 2024). To ask “Whose intelligence?” is to interrogate the cultural and political assumptions encoded within technologies now entering the sphere of music education (Marták, Hu, and Widmer 2024).

Algorithmic Knowledge and Cultural Bias

Most AI systems used in music education are built on large-scale datasets of digitised scores, audio recordings, and metadata (Marták, Hu, and Widmer 2024). These datasets are rarely transparent, yet what is known suggests they are overwhelmingly dominated by Western classical repertoires and commercial popular music catalogues (Bryan-Kinns and Li 2024). As a result, AI-assisted composition tools tend to reproduce harmonic progressions, rhythmic structures, and stylistic conventions associated with a Eurocentric canon. For students engaging with these systems, such repertoires are implicitly positioned as the normative reference point against which all musical creativity is measured (Henry et al. 2024).

This raises profound epistemological concerns. If intelligence is equated with the ability to predict, reproduce, and evaluate within narrowly defined stylistic parameters, then AI redefines “musical intelligence” in ways that marginalise alternative traditions. Improvisational practices from African diasporic musics, cyclical forms from East Asian traditions (Bryan-Kinns and Li 2024), or oral and ritual-based knowledges from indigenous communities become invisible within the algorithmic frame (Hebert 2022). In this sense, AI enacts what decolonial theorists call epistemic injustice: the privileging of certain ways of knowing while erasing others (Bryan-Kinns and Li 2024).

Education and the Standardisation of Intelligence

When AI platforms are introduced into classrooms, their embedded biases translate into pedagogy. Systems that automatically grade compositions on the basis of harmonic “correctness” or rhythmic “accuracy” assess students not as creative agents but as conformists to algorithmic norms (Merchán Sánchez-Jara et al. 2024). Far from broadening horizons, such practices narrow the very definition of musical competence.

From a critical pedagogy perspective, this dynamic reproduces what Paulo Freire termed the “banking model of education” (Freire 1970), where knowledge is deposited into students as unquestionable content. Automated assessment tools intensify this model by presenting evaluations as objective fact, leaving little scope for dialogue or contestation. Students learn not to interrogate the system but to align themselves with its logic. In such contexts, “intelligence” becomes synonymous with compliance to algorithmic authority (Merchán Sánchez-Jara et al. 2024; Shank et al. 2023).

The Politics of Data and Ownership

The question of “Whose intelligence?” also extends to ownership and control. Many AI systems in education are developed by private corporations whose business models depend on data extraction (Zuboff 2019). Each time students generate outputs—compositions, performances, recordings—for automated feedback, their creative labour is folded back into datasets that refine commercial algorithms (Henry et al. 2024). In this way, students’ work contributes to the accumulation of corporate intelligence rather than to collective educational empowerment.

This process reflects broader critiques of digital capitalism. As Zuboff (2019) argues in her account of surveillance capitalism (Zuboff 2019), user interactions are systematically commodified to consolidate corporate power. In music education, the consequences are not only economic but also cultural: Corporate platforms increasingly define the contours of legitimate musical knowledge, determining which practices are visible and which are consigned to obscurity (Shakespeare et al. 2020).

The Risk of Technocratic Pedagogy

Uncritically embraced, the integration of AI risks advancing a technocratic pedagogy where intelligence is equated with algorithmic efficiency (Merchán Sánchez-Jara et al. 2024). Teachers may be reduced to facilitators of software use rather than critical mediators of cultural meaning. Students, in turn, are rewarded for aligning with pre-set standards rather than for developing agency, imagination, or resistance. The educational aim of nurturing diverse musical intelligences—emotional, social, improvisational, communal—becomes subordinated to the narrow logic of computational prediction.

Critical pedagogy urges resistance to such reduction. Musical intelligence cannot be confined to what machines recognise or reproduce. It must include embodied,

communal, and affective dimensions that escape algorithmic capture (Hebert 2022). To foreground these dimensions is not to reject AI wholesale but to insist that its use in education be guided by values of plurality, equity, and dialogue rather than efficiency and standardisation (Merchán Sánchez-Jara et al. 2024).

Whose Music?

If Part I posed questions about whose intelligence is embedded in algorithmic systems, Part II turns to the cultural consequences of these technologies: Whose music is being recognised, valued, and reproduced through AI-mediated education (Bryan-Kinns and Li 2024)? Unlike many other school subjects, music is not simply a skill to be mastered. It is a cultural practice that carries histories, identities, and struggles. When digital technologies enter this space, they inevitably participate in defining what counts as legitimate music and whose voices are amplified—or silenced—within educational contexts (Hebert 2022).

Algorithmic Amplification of Dominant Genres

Most AI music platforms—whether designed for composition, accompaniment, or recommendation—are trained on datasets that privilege large, digitised, and commercially profitable repertoires (Henry et al. 2024; Marták, Hu, and Widmer 2024). Consequently, Western tonal harmony, commercial pop structures, and globalised mainstream genres are disproportionately represented. Students who engage with such systems are introduced to musical norms already filtered by corporate and cultural priorities (Shakespeare et al. 2020).

This dynamic parallels the logic of streaming platforms such as Spotify, YouTube, or TikTok, whose recommendation algorithms steer users towards globally dominant genres at the expense of local or minority traditions (Henry et al. 2024). In classrooms, such algorithmic amplification risks narrowing students’ understanding of musical diversity. The implicit lesson is that “real” music is that which circulates most readily through digital infrastructures: standardised, monetisable, and globally recognisable. By contrast, the community song, the indigenous lullaby, and the experimental improvisation are rendered marginal, if not invisible (Bryan-Kinns and Li 2024).

The Classroom as a Site of Musical Standardisation

When AI tools enter schools, they do not merely support existing practices; they reshape them. A classroom that employs AI accompaniment software may privilege tonal repertoires over modal or microtonal traditions, since the latter resist algorithmic processing (Marták, Hu, and Widmer 2024). Automated grading tools that assess pitch accuracy or rhythmic precision reward alignment with Western notational norms, while undervaluing improvisation, collective participation, or embodied knowledge.

For marginalised communities, this carries particular weight. Rural or indigenous students may discover that their musical heritage is excluded from AI-mediated curricula, signalling that their traditions are less valuable than globalised mainstream repertoires (Bryan-Kinns and Li 2024). In this way, AI risks perpetuating what decolonial theorists call epistemic erasure—the silencing of non-dominant ways of knowing and being (Hebert 2022). A space that could affirm cultural identity becomes instead a mechanism for assimilation into algorithmically sanctioned norms.

Cultural Authority and the Politics of Recognition

To ask “Whose music?” is also to engage questions of cultural authority. Music education has long wrestled with the politics of canon formation: which composers, genres, and practices merit inclusion, and which are excluded (Bryan-Kinns and Li 2024). AI adds a new dimension by embedding these decisions into technical infrastructures. An algorithm trained to “recognise” music defines the boundaries of the repertoire accessible to learners. What lies beyond its recognition—whether regional folk traditions or experimental sound practices—risks being treated as irrelevant or even non-musical (Marták, Hu, and Widmer 2024).

Here the politics of recognition become intertwined with questions of power. Decisions about which repertoires to include in training datasets are rarely made by educators or communities but by corporations and developers motivated by efficiency and profit (Henry et al. 2024). This reflects what Couldry and Mejias (2019) describe as data colonialism: the appropriation of cultural resources through digital infrastructures, redefined for global markets (Bryan-Kinns and Li 2024). Within music education, the authority to define music shifts from teachers and communities to algorithms engineered in distant corporate centres.

Student Identities and the Formation of Musical Subjectivities

Music education shapes not only skills but also identities. Students learn who they are—and who they might become—through the musical practices they encounter (Hebert 2022). When AI narrows the field of legitimate music, it also reshapes students’ subjectivities. Learners immersed in local traditions may find those practices absent or devalued in AI-supported classrooms. Others may come to see themselves as musicians only insofar as they reproduce algorithmically approved sounds (Merchán Sánchez-Jara et al. 2024).

This raises pressing concerns about agency. Rather than cultivating critical musical subjectivities—students capable of interrogating and reimagining cultural forms—AI platforms risk producing compliant learners attuned to mainstream norms (Bryan-Kinns and Li 2024). The threat lies not only in the homogenisation of repertoires but also in the suppression of students’ capacity for cultural critique and innovation. In such contexts, music education risks shifting from transformation to reproduction of dominant logics.

Resisting the Homogenisation of Music

Critical pedagogy insists that education must equip learners not only to inherit dominant culture but to question and transform it (Freire 1970). In the case of AI and music education, this means resisting the homogenising tendencies of algorithmic systems. Teachers and students should treat algorithmic outputs not as authoritative judgements but as provocations for dialogue (Merchán Sánchez-Jara et al. 2024). For example, when an AI accompaniment tool fails to recognise a local scale or rhythm, this absence can become a starting point for asking: Why is this tradition invisible? What does this reveal about the politics of technology and culture (Bryan-Kinns and Li 2024)?

Such practices reframe AI not as a neutral tool but as a contested site of knowledge production. By encouraging students to interrogate whose music is represented, whose is erased, and how these dynamics relate to broader struggles for recognition and justice, educators can foster more inclusive and transformative pedagogies (Hebert 2022; Merchán Sánchez-Jara et al. 2024).

Educational Implications: Critical Pedagogy and AI

The questions of “Whose intelligence?” and “Whose music?” point towards a broader set of pedagogical challenges. If AI in music education risks narrowing definitions of intelligence and standardising repertoires, how should educators, students, and institutions respond (Merchán Sánchez-Jara et al. 2024)? A critical pedagogy perspective does not call for the wholesale rejection of technology. Instead, it seeks to transform the conditions of learning so that AI can be interrogated, resisted, and reimagined in ways that contribute to more equitable and emancipatory education (Freire 1970).

Rethinking the Role of Teachers

One immediate implication concerns the role of the teacher. In many AI-driven educational imaginaries, teachers are positioned as facilitators of pre-programmed systems, ensuring that students interact with software correctly. Such a conception reduces teachers’ authority as cultural mediators, casting them instead as technicians (Merchán Sánchez-Jara et al. 2024). Yet music education has long relied on teachers not only to transmit technical skills but also to connect these skills with cultural meaning, aesthetic values, and social practices (Hebert 2022).

From a critical pedagogy standpoint, teachers must reclaim this role by positioning AI as an object of dialogue rather than as a replacement for professional judgement. Instead of uncritically adopting algorithmic feedback, teachers can invite students to interrogate its assumptions: Why does the system evaluate rhythm in this way? Why does it privilege tonal harmony over modal improvisation (Bryan-Kinns and Li 2024; Marták, Hu, and Widmer 2024)? Such questions reposition teachers as interpreters of culture

and restore their central role in ensuring that technology serves pedagogy rather than displacing it.

Student Agency and Critical Digital Literacy

If teachers are to act as critical mediators, students must likewise be equipped to engage AI reflectively. This requires more than technical proficiency; it demands what scholars term critical digital literacy (Henry et al. 2024). Students must learn to interrogate datasets, algorithms, and the corporate logics that shape their educational tools.

In music education, this might involve comparing AI-generated compositions with local traditions to reveal what is excluded, or collaborative projects where students critique the biases of recommendation algorithms and design repertoires that highlight underrepresented forms (Bryan-Kinns and Li 2024; Merchán Sánchez-Jara et al. 2024). Such practices cultivate learners not merely as musicians but as critical citizens capable of questioning the technologies mediating their cultural lives. Here, agency means not simply the ability to use AI but the power to resist being defined by it, to contest its authority, and to imagine alternative futures for music and education.

Interdisciplinarity as a Site of Transformation

The integration of AI underscores the necessity of interdisciplinary approaches. Music educators alone cannot address the ethical, technical, and cultural complexities of algorithmic systems (Merchán Sánchez-Jara et al. 2024). Collaboration with computer science, cultural studies, and critical data studies opens new pathways for transformative pedagogy.

For instance, joint initiatives could involve students in training small-scale models on diverse repertoires, thereby demystifying technology while foregrounding cultural plurality. Partnerships with community organisations could ensure that local and indigenous traditions are included in AI platforms, disrupting the hegemony of commercial datasets (Bryan-Kinns and Li 2024). Through interdisciplinary collaboration, educators can counterbalance homogenising tendencies and create spaces where diverse intelligences and musics are not merely tolerated but actively celebrated (Hebert 2022).

Resisting the Technocratic Logic of Efficiency

Underlying many applications of AI is an instrumental logic that promises faster, cheaper, and more scalable learning (Henry et al. 2024). While efficiency has value, critical pedagogy warns against allowing it to dominate educational aims. Music education is about cultivating imagination, sensitivity, and social connection—qualities irreducible to algorithmic optimisation (Freire 1970; Merchán Sánchez-Jara et al. 2024).

Teachers and students must therefore resist framing AI primarily as a tool of efficiency and instead orient its use towards dialogue, creativity, and cultural awareness. This is

not to deny the practical benefits of AI, but to subordinate them to broader educational purposes. The challenge is to ensure that AI supports transformation rather than reproduction, amplifies marginalised voices rather than silencing them, and expands rather than contracts the horizons of musical imagination.

Conclusion: Towards a Transformative Future

The discussion has shown that AI in music education is far from neutral. By privileging particular forms of intelligence and specific repertoires, algorithmic systems risk narrowing the horizons of musical learning and reinforcing existing inequalities (Bryan-Kinns and Li 2024; Marták, Hu, and Widmer 2024). Yet critique does not mean rejection. As critical pedagogy reminds us, critique is most powerful when it generates possibilities for transformation (Freire 1970). The key question is not whether AI should enter music education, but how it can be reimagined to serve more equitable, diverse, and emancipatory ends (Hebert 2022; Merchán Sánchez-Jara et al. 2024).

Decolonising AI in Music Education

There is an urgent need to decolonise the datasets and repertoires on which AI systems rely (Bryan-Kinns and Li 2024). Current models overwhelmingly reflect Western classical and commercial traditions, excluding vast bodies of musical knowledge. A transformative approach would deliberately incorporate indigenous, local, and community-based repertoires into training sets. Such efforts would broaden the scope of musical intelligence recognised by AI while affirming the value of traditions historically marginalised in formal education (Bryan-Kinns and Li 2024; Hebert 2022). Collaborations among educators, technologists, and communities are essential to ensuring that AI becomes a site of cultural inclusion rather than exclusion (Merchán Sánchez-Jara et al. 2024).

Cultivating Critical Digital Literacy

Equally vital is the cultivation of critical digital literacy. Students must be enabled not only to use AI but to interrogate its assumptions, datasets, and biases (Henry et al. 2024). Within music education, this means treating AI outputs as cultural artefacts to be analysed and debated, not as authoritative truths. Such practices foster agency, equipping learners to resist being defined by algorithmic norms and to imagine alternative ways of creating and understanding music (Bryan-Kinns and Li 2024).

Reclaiming Pedagogy from Efficiency

Educators must also resist the instrumental logic that often accompanies AI. Music education cannot be reduced to efficiency or scalability; its deeper purpose lies in fostering creativity, empathy, and cultural understanding (Merchán Sánchez-Jara et al. 2024). Teachers should therefore reclaim pedagogy from technocratic discourses, using AI not to accelerate standardisation but to provoke dialogue, imagination, and reflection. This requires the courage to question institutional pressures, to insist on the value of

slow and dialogical learning, and to foreground music's transformative potential as a practice of freedom (Freire 1970).

Building Alliances and Shared Responsibility

The future of AI in music education must be approached as a collective responsibility. No single teacher, institution, or developer can resolve the cultural and political issues at stake (Bryan-Kinns and Li 2024; Hebert 2022). Alliances across disciplines and communities are required. Musicians, educators, technologists, and policymakers must work together to ensure that AI reflects diverse cultural perspectives and serves public rather than corporate interests. Crucially, students themselves should be recognised as co-creators, shaping the very technologies that will define their educational futures (Bryan-Kinns and Li 2024; Merchán Sánchez-Jara et al. 2024).

Concluding Reflections

To ask “Whose intelligence? Whose music?” is to insist that AI in education be accountable to equity, diversity, and transformation. Without such accountability, AI risks becoming another instrument of cultural reproduction and inequality (Henry et al. 2024; Marták, Hu, and Widmer 2024). With it, however, AI can serve as a site of experimentation, inclusion, and critical engagement.

Music education has always been more than the acquisition of skills; it is about identity, community, and the pursuit of meaning. As AI becomes part of this landscape, educators face a choice: to allow algorithms to determine what counts as music and intelligence, or to reimagine these technologies so that they expand, rather than constrain, human possibility (Bryan-Kinns and Li 2024; Merchán Sánchez-Jara et al. 2024). The path forward is neither simple nor straightforward, but it is necessary. By engaging AI critically and creatively, music education can contribute to a future in which intelligence is plural, music is diverse, and education is genuinely transformative.

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