



The Impact of Technology on Music Education and Performance Practices at Nnamdi Azikiwe University, Awka

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Abstract

Digital technologies are reshaping pedagogy, performance, and creative practice in higher music education. This study investigates how digital audio workstations, notation software, online learning platforms, and studio technologies are transforming teaching and professional training at the Department of Music, Nnamdi Azikiwe University (UNIZIK), Awka. Using a mixed-methods case study, data were gathered through questionnaires, interviews, and performance observations involving students, lecturers, and technical staff during the 2025/2026 academic session. Findings show that while technology expands access to music production and enhances creative possibilities, it also generates tensions between traditional musicianship and industry-oriented digital skills. Curriculum analysis of courses such as MUS 880 (Studies in Music Production and Management) and MUS 882 (Musical Acoustics), alongside relevant literature, highlights key challenges at UNIZIK, including inadequate infrastructure, unstable power supply, and uneven digital literacy. The study concludes that technology acts as a creative catalyst, fostering a hybrid “digital artistry” that merges conventional musical values with technological fluency. It recommends targeted staff training, functional digital laboratories, industry collaboration, sustainable power investment, and curriculum reforms that embed technology while preserving the cultural and aesthetic foundations of music education.

Keywords: Awka, Impact of Technology, Music Education, Nnamdi Azikiwe University, Performance Practices



Introduction

Music has always existed at the corners of art and craft; a disciplined form of creative self-expression shaped by cultural heritage, theoretical mastery, and years of practice. (Nzewi, 2007). Music was art in its purest sense: intimate, embodied, and humanly situated. Yet the advent of digital technology in the latter decades of the twentieth century introduced a new dimension to this longstanding duality, one in which the tools of production became as significant as the traditions of practice.

As Burgess (2014) observes, the emergence of the producer-as-artist archetype in the late twentieth century signalled a fundamental reconstitution of musical authorship, one enabled almost entirely by advances in recording and digital production technology. The recording studio, once an ancillary service space, became a compositional instrument in its own right. These developments are a result of the continuous shift of day-to-day practices towards technology. Erhigweke et. al. posit that “the world is evolving, and every aspect of day-to-day existence is evolving with it. One aspect of such evolution is the introduction of information technology (I.T.), which has in no small measure transformed the world.

The department’s evolution from a programme rooted in classical musicianship and ethnomusicological study to one increasingly engaged with DAW-based production, digital notation, and online pedagogy mirrors, in microcosm, the broader transformation occurring across Nigerian music education.

On one hand, technologies such as Cubase, Pro Tools, Logic Pro, Ableton Live, and Sibelius have made professional-quality music production accessible to students and independent artists in ways inconceivable two decades ago. On the other hand, the dominance of these tools in commercial music, particularly in Afrobeats and Amapiano, genres that have achieved remarkable global prominence, has thus created pressure on programmes like UNIZIK’s to prioritize industry-relevant technical skills at the potential expense of broader artistic and theoretical formation.

The challenge of integrating digital music technology into this layered pedagogical inheritance is acute. Yet it is also urgent. Nigeria’s thriving Afrobeats industry, a global cultural force, is built almost entirely on DAW-based production, and the graduates of university music departments increasingly enter a professional landscape that demands fluency in both traditional musicianship and digital craft.

This study focuses on the Department of Music at Nnamdi Azikiwe University (UNIZIK), Awka, Anambra State, one of Nigeria’s foremost university music programmes. With an established undergraduate and postgraduate curriculum that includes specialist courses in music production, management, and acoustics, UNIZIK’s Music Department offers a productive site for examining how technology is being



theorised, institutionalised, and experienced within an African university music context. The central research questions guiding this inquiry are:

- How have advances in music technology shaped the curricula and pedagogical practices of the UNIZIK Music Department?
- What impact has technology had on the performance practices of students and faculty?
- What tensions and possibilities emerge at the interface of artistic tradition and technological craft in this specific institutional setting?

Literature Review

Technology and the Transformation of Musical Practice

The scholarly literature on music technology and its educational implications is extensive, though its geographic focus has remained disproportionately weighted toward Euro–American contexts. Théberge (1997) provided a foundational analysis of how the commodification of musical technology reshaped the relationship between musicians and their tools, arguing that the proliferation of synthesisers, samplers, and sequencers in the 1980s fundamentally altered the economics and aesthetics of popular music production. Katz (2010) extended this analysis to the domain of performance, demonstrating how recording technology changed not only how music was captured but how it was conceived, rehearsed, and delivered.

The Digital Audio Workstation represents the apex of this technological trajectory. As Moorefield (2005) argues, the DAW transformed the studio from a site of documentation into a site of creation, enabling composers and producers to achieve unprecedented sonic control without the institutional resources of a professional recording facility. This democratisation narrative– the notion that DAW technology places professional-grade music production within reach of individuals previously excluded from formal industry structures recurs prominently across the literature (Milner, 2009; Zagorski–Thomas, 2014; Cunningham, 2021).

More recently, scholars have interrogated the limits of this narrative. Wolfe (2020) cautions against conflating access with expertise, noting that the proliferation of low-cost DAW platforms has not automatically generated high-level music production competence. Similarly, Hugill (2012) points to the risk of "technology-led pedagogy," wherein curriculum design becomes structured around tool availability rather than educational intent. These critiques are especially pertinent for developing-world university contexts where infrastructure constraints intersect with pedagogical ambitions.



Music Technology Education in Africa

The literature specifically addressing music technology education in sub-Saharan Africa remains comparatively sparse, though a growing body of work has begun to address this gap. Nzewi (2003) and Agordoh (2011) have documented the tensions between indigenous African musical epistemologies and Western institutional frameworks in African university music departments, arguing that curricula have often uncritically imported Euro-American models without adequate attention to local musical knowledge systems. Okafor (2005) examined the structural challenges facing Nigerian university music programmes, including resource constraints, faculty training deficits, and the gap between institutional music education and the thriving informal music economy.

More recently, Omibiyi-Obidike (2017) and Ekwueme (2019) have drawn attention to the productive tension between Nigeria's oral musical traditions and the demands of technology-integrated music curricula, arguing that digital tools can serve as bridges between indigenous and global forms of musical knowledge when deployed with pedagogical intentionality. Adeyemi (2022) specifically examined the adoption of DAWs in selected Nigerian university music departments, finding that while interest in music technology instruction was high, implementation was hampered by inadequate infrastructure, limited faculty expertise, and ambiguous institutional policy.

The Hybrid Musician-Practitioner

A key theoretical construct emerging from recent scholarship is the figure of the "hybrid musician-practitioner," a musical professional who combines traditional performance and theoretical expertise with competency in digital production tools (Lebler, 2010; Savage, 2012). This construct has significant implications for music education curriculum design. Rather than treating technology courses as supplementary to a core musicianship curriculum, the hybrid model proposes their integration as co-equal components of professional musical identity. Green (2008) contributed a complementary perspective through her concept of informal music learning, noting that many of the skills associated with DAW proficiency, self-directed exploration, and aural imitation, and peer collaboration align more closely with informal than formal musical learning traditions. This raises productive questions about whether university-based music technology instruction should seek to formalise what has historically been informal knowledge.

Theoretical Framework

This study is grounded in a constructivist epistemology that regards knowledge as actively constructed through practice rather than passively received through instruction (Vygotsky, 1978; Dewey, 1938). Within this framework, music technology is understood not as an inactive set of tools but as a set of affordances that shape and are shaped by the pedagogical and creative contexts in which they are



deployed (Gibson, 1979; Norman, 1988). The concept of technological affordance is central: the same DAW platform can function as a compositional sketchpad, a mixing environment, a performance controller, or an educational simulation depending on the intentions and competencies of its user.

The study additionally draws on Activity Theory (Engeström, 1987) as an analytical lens for understanding how technology mediates the relationship between the subject (the music student or educator), the object (musical learning or creative production), and the community of practice (the university music department). Activity Theory directs attention to the contradictions and tensions that arise when new tools are introduced into established educational systems, precisely the dynamics that characterise technology integration in the UNIZIK context.

A third theoretical strand informs the paper's engagement with questions of cultural specificity: postcolonial music education theory (Nzewi, 2003; Campbell, 2018). This perspective insists that technology adoption in African music education contexts must be evaluated not only in terms of technical functionality but in terms of its implications for the preservation, transformation, and projection of African musical identities. The UNIZIK Department of Music, as an institution negotiating between Igbo musical heritage, pan-Nigerian popular culture, and global professional standards, is a productive site for this kind of analysis.

Institutional Context: The Department of Music, Unizik

Nnamdi Azikiwe University, Awka, established in 1992 and named in honour of Nigeria's first president and pre-eminent nationalist intellectual, is a federal university situated in Anambra State in Nigeria's South-East geopolitical zone. The Department of Music, housed within the Faculty of Arts, is among the more established music programmes in Eastern Nigeria, offering undergraduate and postgraduate degrees in music with specialisations that span performance, music theory, ethnomusicology, and music production.

The department's postgraduate curriculum includes MUS 880 (Studies in Music Production and Management) and MUS 882 (Musical Acoustics), among other courses, reflecting a deliberate effort to integrate technical and scientific dimensions of music into graduate-level study. The MUS 880 course, in particular, engages students with DAW platforms including Pro Tools, Logic Pro, Ableton Live, Cubase, and FL Studio, as well as with industry topics such as music copyright, music business models, and professional studio practice. MUS 882 covers the physics of sound production, room acoustics, psychoacoustics, tuning systems, and the acoustical properties of both Western and African musical instruments.

This curricular architecture reflects a considered institutional response to the dual demands facing music graduates in Nigeria: competency in traditional musicianship and theoretical knowledge expected of university-trained musicians, and fluency in the technological platforms that define contemporary



professional music practice. The department thus occupies a particularly instructive position within the broader landscape of Nigerian music education.

Methodology

This study employs a qualitative case study methodology (Yin, 2018) with the UNIZIK Music Department as the bounded unit of analysis. Data were gathered through three primary methods: (i) analysis of departmental curriculum documents, including course syllabi, lesson notes, and assessment frameworks for technology-related undergraduate and postgraduate courses; (ii) structured interviews of about twenty minutes each with eight faculty members across diverse disciplinary specialisations (performance, theory, music technology, ethnomusicology); and (iii) focus group discussions with two students enrolled in music production and acoustics courses. A total of ten people participated in this study.

Interview and focus group data were recorded with participant consent, transcribed verbatim, and subjected to thematic analysis following the framework proposed by Braun and Clarke (2006). Curricular documents were analysed using document analysis methodology (Bowen, 2009), with particular attention to the epistemic assumptions embedded in learning objectives, recommended readings, and assessment tasks. The analysis was guided by the theoretical frameworks outlined above, with particular attention to contradictions, tensions, and sites of productive dialogue between traditional and technology-mediated musical knowledge.

Findings And Discussion

Curriculum Transformation: Integrating Technology into the Music Canon

Analysis of the UNIZIK Music Department's undergraduate and postgraduate curriculum reveals a significant and deliberate effort to incorporate music technology into graduate-level musical training. The syllabi for MUS 880 and MUS 882 engage with DAW platforms and acoustic science at a level of depth comparable to that found in specialised music technology programmes in Euro-American institutions. Critically, these courses are integrated into a curriculum that retains strong emphases on music history, music theory, African music, and performance practice, suggesting a hybrid rather than substitutive curricular philosophy.

Faculty interviews reinforced this impression, with several respondents emphasising that technology courses were designed to complement rather than replace traditional musicianship training. As one lecturer observed: "We want our students to be able to walk into a professional studio and know what they are doing. But we also want them to have ears (real musical ears), not just ears trained by



algorithms." This comment captures the central pedagogical tension evident across the data: the aspiration to produce graduates who are simultaneously artistically literate and technologically proficient.

A notable feature of the curriculum is its engagement with the full signal chain of digital audio production, from microphone selection and placement through Analogue to Digital Conversion/Digital to Analogue conversion (ADC/DAC), MIDI sequencing, and mixing to mastering. This reflects the influence of key texts in the field, including works by Burgess (2014), Moylan (2012), and Owsinski (2014), whose frameworks provide the theoretical scaffolding for course content. The inclusion of music business, copyright law, and professional ethics within the production curriculum further evidences a commitment to preparing graduates for the full ecology of the contemporary music industry.

Technology and Performance Practice

The impact of technology on performance practice at the departmental level is complex and multidirectional. Faculty and students reported that digital tools had enriched performance preparation in several significant ways. The use of DAW-based playback and analysis tools, for example, enabled students to study professional recordings with a level of sonic detail previously unavailable; isolating individual instruments, analysing spectral balance, and studying production aesthetics that inform contemporary performance norms. Several students noted that their engagement with DAW platforms had deepened their understanding of timbre, spatial positioning, and dynamic shaping in ways that enriched their live performance practice.

At the same time, faculty respondents identified concerns about technology's potential to displace the cultivation of foundational performance skills. Several noted that students who had been immersed in DAW-based production from an early age sometimes exhibited weaknesses in sight-reading, ensemble listening, and real-time musical decision-making; competencies that remain essential in professional performance contexts. One professor of performance articulated this concern with clarity: "Technology gives you control, but it can also give you false confidence. A student who can produce a perfect-sounding track may still struggle to perform that material live, in front of an audience, in real time." This observation resonates with Katz's (2010) analysis of the tensions between the recorded and the performed in contemporary musical culture.

Technology has also introduced new performance forms that are themselves distinctly digital in character. Live electronic performance, laptop-based improvisation, and hybrid acoustic-digital performance formats have emerged as legitimate performative modes within the department's concert culture. These formats require performance skills of a genuinely different order from those demanded by conventional instrumental or vocal performance, including real-time audio processing, algorithmic improvisation, and audience engagement in technologically mediated environments.



Infrastructure, Access, and Equity

A recurring theme across both faculty and student interviews was the challenge of infrastructure. While the department has made meaningful progress in acquiring technology-oriented resources (including computer workstations equipped with DAW software), the gap between institutional provision and the demands of a fully technology-integrated curriculum remains significant. Reliable internet connectivity, essential for accessing software updates, online music libraries, and cloud-based collaboration tools, was identified as a persistent constraint. Power supply instability, a systemic challenge across Nigerian institutions, was also cited as a disruptive factor in technology-dependent teaching and learning.

Student access to personal computing resources varied considerably, creating equity differentials within the student cohort. While some students possessed personal laptop computers with DAW software installed, others relied entirely on departmental facilities whose availability was limited by shared demand and institutional scheduling. This inequity of access complicates the democratisation narrative associated with DAW technology, suggesting that the democratic potential of digital tools is only realised under conditions of adequate infrastructure and equitable access; conditions that cannot be assumed in all institutional contexts.

African Musical Heritage and Technological Innovation

A particularly productive set of findings concerns the relationship between digital technology and indigenous African musical knowledge within the department's pedagogical culture. Several faculty members described ongoing efforts to use DAW platforms as tools for the documentation, analysis, and creative transformation of Igbo and other Nigerian musical traditions. One lecturer in ethnomusicology described student projects in which field recordings of traditional Igbo ritual music were processed, layered, and rearranged using DAW platforms, projects that simultaneously developed technical production skills and deepened students' engagement with their own musical heritage.

This convergence of technological craft and cultural heritage represents one of the most compelling dimensions of UNIZIK's music technology programme. It suggests that the "art to craft" transition need not entail the displacement of indigenous musical knowledge by global technological norms but can instead serve as a vehicle for the renewal, dissemination, and creative reinvention of local musical traditions in digital form. This finding aligns with and extends the arguments advanced by Omibiyi-Obidike (2017) and Ekwueme (2019) regarding the potential of technology to serve as a bridge between traditional and contemporary African musical forms.



Towards a Hybrid Pedagogical Model

The findings of this study suggest that the most productive response to the challenges and opportunities of music technology integration in the UNIZIK context is the deliberate development of what we term a "hybrid pedagogical model," a framework that treats artistic intuition and technological craft not as opposing orientations but as mutually reinforcing dimensions of musical competence.

Such a model would be structured around four interlocking principles. First, technological integration should proceed from musical intent: technology courses should be designed so that tool acquisition is always in service of musical goals, with DAW exercises grounded in real compositional, analytical, or performative challenges. Second, indigenous musical knowledge should be positioned as a resource and object of study within technology curricula, rather than as a domain separate from or in tension with digital production. Third, faculty development in music technology must be treated as an ongoing institutional priority, given the rapid pace of technological change and the need for pedagogically sophisticated technology instruction. Fourth, infrastructure investment must be pursued systematically, with attention to equitable access across the student cohort, reliable power supply, and connectivity that supports full participation in global digital music cultures.

The hybrid musician–practitioner model proposed by Lebler (2010) and Savage (2012) provides a useful template for this approach, but it requires contextualisation for the Nigerian and specifically the UNIZIK setting. The hybrid model must accommodate not only the familiar axis of art and craft, but also the axes of global and local, formal and informal, digital and acoustic that structure musical life in contemporary Nigeria. The goal is graduates who can navigate these multiple axes with fluency, creativity, and cultural confidence.

Conclusion

This paper has examined the impact of advances in music technology on education and performance at the Department of Music, Nnamdi Azikiwe University, Awka, Nigeria. Through analysis of curricular documents and qualitative engagement with faculty, undergraduate and postgraduate students, it has mapped a landscape of significant curricular innovation, genuine pedagogical creativity, and persistent infrastructural challenge. This integration of digital technology captures a real and ongoing tension within the department and the broader Nigerian music education context: the tension between the cultivation of musical artistry as a form of cultural inheritance and the mastery of technological craft as a form of professional preparation.

Rather than resolving this tension in favour of either pole, the study argues that productive engagement with it through hybrid curricula, culturally grounded technology pedagogy, and sustained institutional investment represents the most promising path forward. The UNIZIK Music Department, with



its distinctive combination of scholarly rigour, indigenous musical engagement, and growing technology orientation, is well-positioned to contribute to the development of pedagogical models that are both globally competitive and rooted in the musical cultures of Nigeria and the African continent.

Future research should expand the comparative base of this inquiry to include other Nigerian university music programmes and should pursue longitudinal engagement with the career trajectories of technology-trained music graduates, tracking how hybrid competencies translate into professional outcomes in Nigeria's dynamic and demanding music economy. As digital tools continue to evolve at pace, the challenge of curriculum relevance will remain central, and the scholarly community has a vital role to play in supporting institutional actors as they navigate this challenge with wisdom, creativity, and cultural integrity.

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