Research/Review

Revitalization of Traditional Music through Digital Learning Media for Gambang Kromong 5.0 Innovation Study

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Abstract. This literature review analyzes the transformative potential of digital learning media in revitalizing Indonesian traditional music, with a particular focus on Gambang Kromong innovation within the framework of Society 5.0. Traditional music, as the foundation of cultural identity, faces significant threats from globalization and modernization, resulting in declining interest, especially among the younger generation. This approach examines how digital technologies can serve as a catalyst for the preservation, learning and dissemination of traditional music, transforming it from a marginalized status to one of contemporary relevance. The report synthesizes existing literature to identify key trends, benefits derived from the use of technologies such as Digital Audio Workstations (DAWs), Virtual Reality (VR), Augmented Reality (AR), Artificial Intelligence (AI), gamification, and online and social media platforms. In addition, the report discusses inherent challenges, including the digital divide, the need for increased educator competencies, and intellectual property rights issues, while highlighting opportunities for collaboration and global audience reach. The conceptualization of "Gambang Kromong 5.0" is proposed as a holistic model that integrates traditional essence with intelligent technological advancements in a human-centric manner, ensuring cultural survival and artistic relevance in the digital age.

Keywords: Traditional Music; Digital Learning Media; Gambang Kromong 5.0; Society 5.0; Cultural Preservation; Educational Technology.

1. Introduction

This phenomenon is manifested in a decline in public interest, especially among the younger generation, who are increasingly shunning this cultural heritage (Oleh, n.d.). This condition demands proactive and strategic revitalization efforts to ensure cultural preservation and resilience in the midst of world civilization. Without proper intervention, many forms of traditional music risk being forgotten or even extinct.

Gambang Kromong is one of Betawi's unique traditional music forms, born from a rich fusion of Chinese and Betawi cultures, forming a deep artistic identity and historical value.(Sukotjo, 2012) Historically, this music has played a variety of social functions, ranging from accompanying religious rituals and traditional ceremonies to becoming public entertainment in lenong performances.Its existence reflects the harmony of two different cultures that come together in a beautiful and entertaining rhythm.

Despite its deep cultural heritage, Gambang Kromong faces pressing challenges in contemporary society. It is increasingly marginalized by the dominance of modern entertainment, experiencing a significant decline in traditional performances, and resulting in economic instability for its practitioners. (Kasfiyullah & Alfian, 2023) These pressures underscore the urgent need for strategic innovation to maintain its relevance and appeal. Gambang Kromong's history of acculturation provides a strong conceptual framework for its continued evolution through digital integration. This inherent adaptive capacity suggests that the incorporation of new technologies is not a deviation from its essence, but rather a

natural continuation of its tendency to absorb and integrate various elements, allowing it to remain a living and evolving art form.

Digital learning media significantly enhance arts and cultural education by making it more accessible, interactive and relevant, thus increasing student motivation and encouraging collaborative learning opportunities. (Haeqal et al., 2023) The ability of digital media to facilitate self-directed learning and personalized experiences allows students to engage with content anytime and anywhere, overcoming the geographical and time barriers that often limit traditional music learning.

"Gambang Kromong 5.0" is conceptualized as the application of the principles of Society 5.0 to this traditional art form, with the aim of achieving a harmonious synergy between its traditional essence and the advancement of smart technology. The framing of "Gambang Kromong 5.0" within the "Society 5.0" paradigm elevates the revitalization discourse from mere technological adoption to deep philosophical integration. This implies that the ultimate goal is not just to digitize Gambang Kromong for its own sake, but to leverage technology to enhance the human experience of music-making it more accessible, engaging and relevant-while carefully preserving its inherent "taste value". This approach directly addresses and mitigates the potential pitfalls of technology leading to "strandarting the essence of art".

2. Preliminaries or Related Work or Literature Review

The Crisis of Traditional Music Transmission in Contemporary Indonesia

Traditional music in Indonesia, including genres such as Gamelan, Angklung, and Gambang Kromong, faces significant challenges related to intergenerational transmission, cultural relevance, and pedagogical inclusion. (Prasad et al., 2024) underscores the structural marginalization of traditional music in national education curricula, which prioritizes Western classical and modern popular music. This results in the systemic devaluation of indigenous musical knowledge. (Zulhaida Masmuzidin et al., 2020)) explains that this neglect has led to a discontinuity in cultural memory and skill inheritance, particularly in urban settings where modern lifestyles and media dominate. Moreover, Riyanto & (Prita Khairunnisa et al., 2024) argue that many traditional musicians lack pedagogical training, which further impedes effective transfer of knowledge.

Youth Disengagement and Cultural Alienation

(Aribawa1 et al., 2020) found that students often perceive traditional music as irrelevant due to its limited representation in mainstream media and lack of technological integration. This detachment is not solely aesthetic but is also sociocultural; students view local music as incompatible with modern identities shaped by globalized content on platforms like TikTok and YouTube. This finding is echoed by (Rijal & Sukmayadi, 2021), who note that the absence of traditional music in digital formats contributes to a broader cultural alienation among the youth. This disengagement, if left unaddressed, risks eroding intangible cultural heritage in favor of imported values.

Potentials and Pitfalls of Digital Learning Media

Digital learning tools offer a promising strategy for revitalizing interest in traditional music. (Saputra et al., 2024) demonstrated that a gamified mobile application for Balinese gamelan significantly improved student motivation and learning outcomes. (Saputra et al., 2024)introduced "Sound of Nusantara," a culturally embedded game that promotes interactivity, localized content, and gamification strategies. However, these technologies also present potential pitfalls. (Song & Chen, 2017) cautions that digital media often privilege visual over auditory learning, which may oversimplify traditional rhythmic complexity and nuance. Moreover, many applications are developed without the involvement of cultural bearers, which can lead to inaccuracies and superficial representations.

Augmented Reality and Extended Reality in Arts Education

The integration of Augmented Reality (AR), Virtual Reality (VR), and Extended Reality (XR) into arts education has expanded the possibilities for experiential learning. (Permana et al., 2019) developed an AR-based platform for Betawi performing arts, which enabled learners to explore instruments and costumes in 3D space. (Gu et al., 2024) found that AR enhanced

learner immersion and emotional engagement, especially in cultural heritage applications. These technologies offer the potential to reconstruct traditional performance contexts, providing students with a multisensory and contextually rich learning experience. However, implementation remains limited due to technological infrastructure gaps and the digital divide, especially in rural or economically disadvantaged areas (Permana et al., 2019).

Toward a Framework for Gambang Kromong 5.0

Despite the development of digital tools for instruments like gamelan and angklung, Gambang Kromong remains underrepresented in academic and educational innovation.(Permana et al., 2019) proposed a cultural marketing strategy for Betawi arts, yet failed to address educational integration. Gambang Kromong 5.0, as envisioned in this study, proposes a holistic and culturally grounded digital education framework. It incorporates five core principles: (1) Preservation of authentic musical structures and instrumentation; (2) Gamified skill acquisition through culturally contextualized challenges; (3) AI-driven feedback to support individualized learning paths; (4) Virtual collaborative platforms for ensemble simulations; and (5) Pedagogical alignment with the Merdeka Belajar curriculum. This model is informed by the synthesis of works on digital heritage education (Song & Chen, 2017), culturally responsive pedagogy (Puspita et al., 2021)), and user-centered learning design (Yusupova, 2022.

Critical Synthesis

A critical synthesis of the literature suggests that while digital tools can significantly aid the revitalization of traditional music, their success depends on more than technological sophistication. (Kasfiyullah & Alfian, 2023), effective educational technology for traditional music must be co-created with cultural experts, educators, and learners to ensure authenticity and usability. Furthermore, integration into formal curricula requires alignment with pedagogical frameworks and institutional support. The reviewed studies collectively stress the importance of contextual, multimodal, and inclusive approaches that honor the depth of traditional music while adapting to modern educational ecologies.

3. Proposed Method

This study uses a qualitative literature review methodology to collect and analyze secondary data from scholarly publications, case studies, and official reports. Some articles published between 2009 and 2024 were sourced from Scopus, DOAJ, SINTA, and Google Scholar using keywords such as "traditional music revitalization," "digital learning media," "Gambang Kromong," "arts education," and "gamification in culture." Thematic analysis and critical synthesis were employed to categorize the literature into conceptual, empirical, and technological clusters. Special attention was given to interdisciplinary studies combining education, ethnomusicology, and digital media design.

4. Conclusions

Revitalizing traditional music, especially Gambang Kromong, in the digital era is a necessity that is full of challenges and opportunities. This literature analysis confirms that digital technology is not just a tool, but a crucial "antidote" that can encourage a "Quantum Leap" in cultural preservation and development. Gambang Kromong, with its rich history of acculturation, has an inherent adaptive capacity that makes it well suited for technological integration. The human-centered conceptualization of "Gambang Kromong 5.0", in line with the philosophy of Society 5.0, offers a holistic framework to ensure technological innovation serves and enriches the artistic "taste value" and human experience of the music.

While digital learning media have been proven to increase motivation, engagement and accessibility of traditional music learning, challenges such as limited infrastructure, educator competencies and the risk of cultural homogenization must be strategically addressed. The existing digital divide demands policies that prioritize equitable access and comprehensive training for all stakeholders. In addition, intellectual property rights protection and culturally sensitive digital strategies are essential to maintain the integrity and uniqueness of traditional music amidst globalization.

Based on this review, several recommendations can be put forward to guide the revitalization efforts of Gambang Kromong and other traditional music:

- **Development of an Inclusive Digital Learning Ecosystem:** Governments and educational institutions need to invest in equitable technology infrastructure, especially in remote areas, to ensure equitable access to digital learning media. This should include the provision of adequate devices and stable internet connectivity.

- **Human Resource Capacity Building:** Sustainable and structured training programs should be developed for traditional music teachers and practitioners. This training should include digital literacy, use of DAWs, VR/AR, AI, and gamification strategies, as well as pedagogies that integrate technology effectively without compromising depth of learning.

- **Technology-based Content and Curriculum Innovation:** Encourage the creation of engaging and interactive digital learning content for Gambang Kromong, such as AR/VR apps that simulate the instrument, educational games, and online platforms featuring modern arrangements of traditional songs. Arts education curricula should be adapted to integrate these technologies seamlessly.

- **Cross-sector collaboration:** Facilitate strong collaboration between traditional musicians, technology developers, academics, cultural institutions and creative industries. Digital platforms should be designed to support co-creation and knowledge exchange, allowing musicians to innovate while maintaining cultural authenticity.

- **Culture-Centered Digital Dissemination Strategy:** Develop a strategic digital marketing campaign on social media that emphasizes the uniqueness and distinctiveness of Gambang Kromong. This should involve creating viral challenges, collaborations with influencers, and content that blends tradition with modern aesthetics, while actively combating the risk of cultural homogenization.

- **Adaptive Intellectual Property Rights Protection Framework:** Develop and implement a robust legal framework to protect the intellectual property rights of traditional music in the digital realm, including fair royalty mechanisms for artists. This is essential to encourage innovation and ensure economic sustainability for practitioners.

By implementing these recommendations, the revitalization of Gambang Kromong through digital learning media can reach its full potential, ensuring this invaluable cultural heritage not only survives but also thrives in the era of Society 5.0, inspiring future generations and enriching the global cultural landscape.

References

[1] K. Aribawa, I. G. M. Darmawiguna, and G. A. Pradnyana, "Pengenalan Budaya Bali Menggunakan Media Pembelajaran Gamelan Gong Kebyar," vol. 19, Apr. 2020, pp. 216–219.

[2] Gu, Y. Pan, and R. Chu, *Conservation and Inheritance of the Artistic Heritage of Music and Dance in the Western Regions*, Atlantis Press SARL, 2024, doi: 10.2991/978-2-38476-344-3.

[3] R. A. Haeqal, M. I. P. Nasution, and M. Fakhriza, "Aplikasi Media Pembelajaran Alat Musik Tradisional Khas Sumatera Utara Berbasis Augmented Reality," *JISTech (Journal of Islamic Science and Technology)*, vol. 8, no. 2, p. 73, 2023, doi: 10.30829/jistech.v8i2.19059.

[4] Kasfiyullah and H. Alfian, "Perlawanan Musisi Gambang Kromong Terhadap Dominasi Industri Musik Mainstream," *Emerald: Journal of Economics and Social Sciences*, vol. 2, no. 1, pp. 47–62, 2023.

[5] Oleh, "Faktor-Faktor yang Mempengaruhi Minat Mahasiswa Memilih Jurusan Pendidikan Seni Musik Universitas Negeri Yogyakarta," [Online]. Available: www.uny.ac.id. [Accessed: Jun. 12, 2025].

[6] F. Permana, H. Tolle, F. Utaminingrum, and R. Dermawi, "Development of augmented reality (AR) based gamelan simulation with leap motion control," *International Journal of Interactive Mobile Technologies*, vol. 12, pp. 120–135, 2019, doi: 10.3991/ijim.v13i12.9270.

[7] T. Prasad, A. Sehgal, and S. Ghiya, "A Study on Cultural Heritage Preservation in the Digital Era," *International Journal of Scientific Research in Engineering and Management*, vol. 8, no. 2, pp. 1–13, 2024, doi: 10.55041/ijsrem28803.

[8] P. Khairunnisa, N. Huda, and Haerussaleh, "Pengembangan Metode Improve Musik Mendukung Peningkatan Kemampuan Kreatif dan Kecerdasan Musik," *EDUKASIA: Jurnal Pendidikan dan Pembelajaran*, vol. 5, no. 1, pp. 179–188, 2024, doi: 10.62775/edukasia.v5i1.735.

[9] A. Puspita, A. Andrean, and F. F. Fauzi, "Rancang bangun aplikasi berbasis augmented reality dengan tema alat musik tradisional Indonesia sebagai media pembelajaran di sekolah dasar," *TEKMULOGI: Jurnal Pengabdian Masyarakat*, vol. 1, no. 2, pp. 97–108, 2021, doi: 10.17509/tmg.v1i2.40188.

[10] S. Rijal and Y. Sukmayadi, "The Use of the TikTok Application as a Music Learning Media for Junior High School Students," in *Proc. Icade 2020*, vol. 519, pp. 104–108, 2021, doi: 10.2991/assehr.k.210203.023.

[11] D. N. Saputra, A. Cahyono, U. Utomo, E. Raharjo, and O. T. P. Nainggolan, "Integrating Tradition and Technology: Digital Audio Workstation-Based Learning for Traditional Music Preservation," *Resital*, vol. 25, no. 2, pp. 321–337, 2024, doi: 10.24821/resital.v25i2.13913.

[12] B. Song and J. Chen, "On Digital Technology and Music Education," in *Proc. Essaeme*, vol. 119, pp. 562–566, 2017, doi: 10.2991/essaeme-17.2017.113.

[13]　Sukotjo, "Musik Gambang Kromong Dalam Masyarakat Betawi Di Jakarta," *Selonding*, vol. 3, pp. 1–20, 2012. [Online]. Available: https://journal.isi.ac.id/index.php/selonding/article/view/7/22

[14] M. J. Yusupova, "Modern Technologies And Methods Of Music Education," *International Journal of Social Science And Human Research*, vol. 5, no. 6, pp. 2579–2583, 2022, doi: 10.47191/ijsshr/v5-i6-88.

[15] M. Zulhaida Masmuzidin, N. Syahela Hussein, A. Amira Abd Rahman, and M. Aqqil Hasman, "Learning the Malay Traditional Musical Instruments by using Augmented Reality Application," *Journal of Engineering and Applied Sciences*, vol. 15, no. 7, pp. 1622–1625, 2020, doi: 10.36478/jeasci.2020.1622.1625.