

Reclaiming Somatic Intelligence:

A Sumerian Minahasan Embodied Framework for Music Education in the AI Era

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Abstract:

This study strengthens embodied musical cognition through Directional Chord Symbols (DCS), a spatial kinesthetic system synthesizing Sumerian sexagesimal principles with Minahasan cosmology, responding to concerns about diminishing human somatic intelligence as Artificial Intelligence becomes increasingly central in musical creation and performance. Music education faces institutional crisis worldwide, with UK universities closing music departments and Indonesia cutting arts funding by eight trillion rupiah, reflecting precarious institutional positioning dominated by STEM disciplines and perpetuating talent gatekeeping that excludes learners who believe they lack musical gift. The research employed Arts-Based Research integrated with Participatory Action Research to privilege embodied knowledge production through collaborative inquiry with participants and educators. Purposive mixed-ability sampling recruited eighteen middle school students (ages 12-15) from Central Java, Indonesia, including nine students with formal music training and nine self-identified non-musicians. Video analysis documented trajectory adherence and tempo maintenance, while participant reflections, focus group discussions, and educator field notes captured qualitative dimensions of embodied learning experiences. Thematic analysis employed constant comparison methods, with descriptive statistics characterizing spatial navigation patterns and triangulation across multiple data sources enhancing validity. Students achieved 92.3 percent plus minus 5.8 percent accuracy in directional trajectories and maintained tempos of 118.2 plus minus 3.9 BPM, with qualitative findings revealing talent barrier dissolution, heightened motivation, and cultural resonance among Minahasan learners associating movements with Lumimuut rotational knowledge. The study recommends positioning music departments as Embodied Cognition Centers to secure STEM alignment, institutional resilience, and relevance in the AI era while promoting epistemic justice and expanding access for diverse neurotypes.

Keywords: somatic intentionality, embodied pedagogy, Sumerian Minahasan cosmology, STEM music integration, AI human complementarity, epistemic decolonization