Harmony of Language and Technology: AI-Supported Music Education through Song Lyrics

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ABSTRACT

This study explores the integration of artificial intelligence (AI) in music education as an innovative approach to enhance language learning through song lyrics. Music is widely recognised as a powerful pedagogical tool, with its lyrics offering meaningful context for vocabulary building, grammar practice, and expressive communication. By combining AI with music education, the study aims to create engaging and multidisciplinary learning experiences that foster both linguistic growth and artistic expression. The approach emphasises lyric writing, songwriting, and guided singing to improve students' vocabulary, grammar, pronunciation, and vocal skills. Learners compose original works with the help of AI tools while practising accurate English vowels, clear pronunciation, and appropriate vocal techniques. The methodology involves AI-assisted music generation, lyric composition, guided vocal practice, and peer presentations, encouraging collaboration, creativity, and reflective learning.

Findings show that students achieve notable improvements in language proficiency, confidence, and creative expression. Importantly, the accessibility of AI allows participation from all learners, regardless of prior musical training, making songwriting and performance both inclusive and enjoyable.

The novelty of this study lies in its cross-disciplinary framework that unites music education, language acquisition, vocal training, and AI technology. Results highlight how AI-supported lyric composition and guided singing enhance linguistic skills while nurturing creativity, critical thinking, and student engagement. This approach demonstrates the transformative potential of AI in education, offering new pathways where music, language, and technology converge to enrich teaching and learning.

Keywords: (Artificial Intelligence (AI); Music Education; Language Learning, Song Lyrics; Creativity

INTRODUCTION

Malaysia's education system has long emphasised "fun learning" through creative and interactive strategies, with music and singing playing central roles in classroom instruction (Saidon et al., 2021). Singing also has a great impact on developing students' communication skills. Singing enhances communication skills, which in turn leads to better performance in academics and enhanced interpersonal relations. Songs provide more than just opportunities for language practice through repetition, they also help develop listening abilities, strengthen language association and assimilation, and enhance phonological skills while creating a relaxed learning environment. By incorporating songs into English lessons, teachers can effectively recycle various linguistic features. They can also be integrated at different stages of instruction, such as warm-ups or fillers, to maintain students' interest and engagement. Their rhythmic and repetitive qualities help learners internalise linguistic patterns, while melodies and gestures enhance memory retention and predictive language processing.

Problem Statement

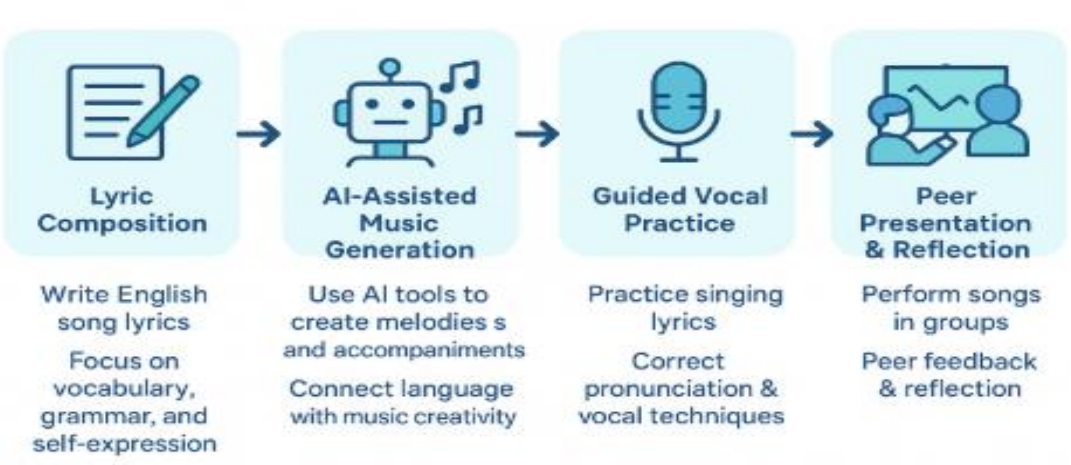
Recent research continues to affirm the role of music in language development. Aini and Purnawati (2025) reviewed song-based interventions for preschool children with language delays, finding significant improvements in vocabulary, sentence construction, and comprehension. Similarly, group musical activities cultivate social communication skills such as turn-taking, listening, and collaboration, all of which are critical for effective interaction (Pino, Giancola, & D'Amico, 2023; Linnavalli, Putkinen, Lipsanen, Huotilainen, & Tervaniemi, 2018). Hart (2015) further demonstrated that incorporating songs, chants, and nursery rhymes into kindergarten lessons enhanced phonemic awareness, vocabulary knowledge, sight-word recognition, and learner motivation, highlighting music as an effective and non-traditional approach to language teaching.

Building on this foundation, the integration of artificial intelligence (AI) offers new opportunities to advance music-supported language learning. AI can analyse song lyrics, model pronunciation, and provide personalised feedback on vowel production and articulation, helping students refine both their receptive and expressive skills. Moreover, AI-supported platforms can adapt songs to learners' linguistic levels, recommend vocabulary-rich lyrics, and guide teachers in applying evidence-based strategies. Education 5.0 goals, which prioritise innovation and creativity alongside student-centred learning, align with this technological complement to traditional music pedagogy. Thus, the harmony of language and technology through AI-supported music education presents a promising pathway for enhancing language learning outcomes while sustaining the engaging and interactive spirit of song-based instruction.

Objectives

1. To investigate the ways in which AI-supported lyric composition and vocal practice can improve students' language proficiency, specifically in areas such as vocabulary, grammar, pronunciation, and expressive communication.
2. To examine the effectiveness of integrating AI tools in music education as a creative and interactive approach that fosters student engagement, collaboration, and holistic learning.

PRODUCT DESCRIPTION & METHODOLOGY



The Harmony of Language and Technology Innovation introduces a structured and interactive framework for integrating artificial intelligence (AI) into music education to enhance language learning through song lyrics. In this study, a small group of eight undergraduate students participated in four sequential stages: lyric composition, AI-assisted music generation, guided vocal practice, and peer presentations with reflection.

The project followed an integrated learning process driven by AI tools. Students initiated the creative phase by utilizing ChatGPT to construct English lyrics, specifically targeting vocabulary expansion and grammar improvement through iterative refinement and language checking. Subsequently, they used Suno AI as a generative tool to produce and arrange the simple melodies for their songs. Guided vocal practice then focused on pronunciation and vocal techniques.

The final stage involved peer presentations and critiques of their original songs in groups, fostering collaboration, creativity, and reflective learning. Data were gathered through classroom observations and student reflections to assess language growth, creativity, and general learning.

POTENTIAL FINDINGS AND COMMERCIALISATION

Integration of AI in Music Composition and Creative Songwriting

The writing of lyrics encourages student imagination and creativity while increasing their vocabulary, knowledge of grammar and creative writing ability. In this method, students use ChatGPT as a tool in generating English song lyrics helping to improve language and broaden expressional capabilities. Assisted by Suno AI, users can form their spoken lyrics into full-blown musical compositions-- No instrumental skills needed. This blending enhances creativity, encourages motivation and participation while giving students a feeling of pride when their work is polished by professionals.

It is also expected that students will experiment with different types of songs to match the lyrics they have written. The freedom to select from various musical genres according to personal preferences may complement their lyric writing and encourage artistic exploration. As students engage with AI-generated music, they are likely to experience excitement and curiosity, as the tools simplify the technical aspects of composition and make music creation more inclusive.

Overall, this approach highlights the potential for AI to democratise creativity by lowering barriers to musical production. By allowing students to generate original lyrics and transform them into complete songs, the activity is anticipated to foster more profound engagement with the English language while simultaneously developing creativity and self-expression.

Guided Lyric Diction and Pronunciation in Singing

Alongside lyric writing and the use of AI-assisted music composition, careful guidance in lyric diction and pronunciation plays a key role in vocal development. Singing is more than making music—it is also a form of communication in which clarity, accuracy, and expressiveness determine how well a song's message is conveyed. To support this, students receive structured training that covers posture alignment, breath control, vocal warm-ups, articulation, and tonal precision. Together, these fundamentals build a stronger, more resonant voice and help singers enunciate their lyrics with ease.

Working with Suno AI-generated melodies, students can repeatedly listen and sing along, reinforcing diction and pronunciation. Through regular practice with such digital material, they learn to shape vowels consistently and articulate consonants cleanly, which sharpens both their musical accuracy and their spoken clarity. Simple drills—like isolating and sustaining the vowel sounds a–e–i–o–u—highlight subtle contrasts in English pronunciation, while focused consonant exercises make each lyric more distinct and engaging.

Beyond the mechanics of diction, targeted coaching in breathing, phrasing, and tone production supports vocal stamina and expressive control. Solid breath management allows singers to sustain longer lines with confidence, while thoughtful phrasing brings a natural flow and emotional depth to performances. These habits not only enrich musical interpretation but also boost confidence in everyday communication, whether in class discussions, presentations, or informal conversation.

What makes this approach distinctive is its holistic nature. Training in pronunciation and diction is not treated as a stand-alone language lesson; it is woven directly into the creative and performative experience of singing. By blending AI-supported music creation with focused vocal instruction, students take part in an active, integrated process that develops both artistic skill and communicative ability. In the long run, this combination is expected to strengthen musical proficiency and at the same time support English language development in a lively, relevant, and culturally sensitive way.

Language Development through Music & AI

To enhance English proficiency among children, singing with appropriate lyrics plays a vital role. Through music, children can easily remember words and pronounce them correctly, as musical elements aid memory and articulation. In this study, students practiced singing their songs with a strong focus on pronunciation and vocal technique. Observations revealed noticeable progress in articulation, speech rhythm, and vowel accuracy. As they rehearsed, learners became more aware of their pronunciation errors, with some even modifying their lyrics to make the words easier to sing and articulate.

The findings highlight the synergy between music and language learning, supporting Patel's (2011) view that rhythm and melody enhance phonological processing. Repetitive practice through singing served as a natural reinforcement mechanism, enabling students to internalize correct pronunciation and stress patterns more effectively.

NOVELTY AND RECOMMENDATIONS

This innovation introduces a cross-disciplinary framework that integrates music education, language learning, AI technology, and vocal training. Through AI-assisted lyric writing and melody generation, it democratizes creativity by enabling learners without prior musical experience to compose and perform songs. The approach is distinctive in combining linguistic accuracy with artistic expression, creating a highly engaging and innovative pathway for language acquisition.

It is recommended that this innovation be further developed into scalable digital platforms, such as educational apps or online modules, to maximize accessibility across diverse learning environments. Teacher training programs should incorporate this approach to equip educators with the skills to blend AI tools with creative pedagogy. Future research could also explore its adaptability across different languages and cultural contexts, ensuring broader impact and sustainability

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