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The Effect of Music on English Speech Perception in Non-Native Speakers: A Quasi-Experimental Study

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Abstract
Non-native English speakers often struggle to recognize and produce accurate pronunciation due to differences between their native phonological systems and English. This study investigates the potential impact of music on English speech perception among ESL learners at private schools in Karachi, Pakistan. Using a quasi-experimental design, pre-and post-tests were administered to 20 students following a ten-day music intervention featuring phonologically rich content. The results revealed statistically significant improvements in speech recognition and pronunciation, particularly in perceiving minimal pairs, correcting word stress, and articulating difficult consonants and vowels. The findings underscore the pedagogical value of integrating music into ESL instruction and address a critical research gap in Pakistan, where empirical studies on music and pronunciation are limited. This research offers actionable insights for educators and policymakers aiming to enhance language acquisition through innovative, learner-centred strategies.

Key Words: Speech Perceptions, Phonetic Features, Music Exposure, ESL Private School Students

Introduction

English language learners face major pronunciation and listening problems because their native languages differ from English. Non-native speakers of English face significant problems when differentiating vowel sounds, consonant differences, and stress patterns in English because their native languages usually lack these elements or present different patterns. Speaking Urdu or Punjabi presents challenges for speech pronunciation since these languages lack the sounds that appear in the English word "think" as in "th" (Bidelman & Alain, 2021). The audio system of native languages proves troublesome for non-native speakers since vowels (between "seat" and "sit") and consonants ("think" and "sink") exist differently than in their original languages (Zhang et al., 2022). The improper development of pronunciation faces obstacles because communication misunderstandings damage fluency and English-speaking intelligibility.

Music, with its rhythm, pitch, and melody, has long been suggested as a potential

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tool for improving speech perception and pronunciation. Studies have shown that music training enhances auditory discrimination abilities and can positively influence cognitive functions, including language processing (Patel, 2021). Music engages both the auditory system and cognitive processes that are fundamental for perceiving and producing speech. Through music, people can hear stress patterns alongside prosodic elements linked to rhythmic and melodic sounds that assist non-native speakers in detecting phonetic aspects that they find challenging. Musical elements that underline vowel duration, consonant pronunciation, and stress patterns can serve as transition tools to help foreign speakers learn difficult English features better.

New academic studies confirm that hearing music enhances processing capabilities alongside speech understanding, particularly during intricate listening tasks (Patel, 2021). The OPERA hypothesis confirms that musical training enhances brain processing of speech sounds and produces sounds for non-native speakers, as Patel (2021) found. Limited research exists about how non-native speakers respond to music exposure when attempting to perceive and produce challenging English phonetic features. Researching this connection will help identify ways for non-native English learners to use music to enhance their pronunciation and speech perception abilities.

The research investigates the effects of music exposure on English word pronunciation and word recognition for phonetic features, which include vowel distinctions, consonant contrasts, and stress patterns. Non-native English speakers undergo a quasi-experimental assessment of their pre-exposure and post-exposure speech performance by attending to music featuring targeted phonetic elements. The investigation of music-based speech perception improvement aims to advance research about how music-based training helps English language learners overcome their phonetic difficulties.

We conduct this investigation to determine if musical education adds capabilities in recognizing and correctly pronouncing English words for second language learners who have difficulty perceiving and pronouncing specific aspects of the language. The research introduces great importance to language education by developing an innovative interactive system for non-native English speakers to overcome phonetic learning challenges.

Research Questions

1. What is the impact of music on the pronunciation and recognition of English words by non-native speakers?
2. To what extent does music exposure lead to measurable improvements in speech perception tasks (i.e., recognizing and pronouncing target words)?

Literature Review

The Relationship Between Music and Cognitive Functions

Research has consistently highlighted a relationship between music and cognitive functions, particularly in auditory perception and language processing. Mohammad Zadeh and Sajjadi (2019) emphasized that engaging with music involves the production and perception of sounds and contributes significantly to cognitive processing, which can improve speech perception in complex auditory environments. Musical training, in particular, enhances auditory processing, resulting in better speech perception, especially in situations involving

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competing sounds. This topic holds significant importance among speakers of English as a second language due to phonetic challenges with identifying vowel distinctions, the "th" sound, and stress patterns (Zhang et al., 2022).
Musical education or musical activities support better processing of sounds in the ear and phonetic feature recognition, particularly during complex language situations. Understanding how music affects English speech perception among foreign language speakers requires immediate investigation. Educated musicians show improved speech perception in foreign language environments due to their better cognitive function in identifying speech sounds.

Musical Training and Language Processing

Academic research shows that music instruction develops hearing perception and language processing capabilities. The study presented by Patel (2021) introduces the 'OPERA hypothesis,' which stands for 'Overlap, Precision, Emotion, Repetition, and Attention.' This hypothesis claims that musical training modifies brain function for speech sound processing and enhances speech perception, particularly for non-native speakers. The hypothesis demonstrates that music is fundamental for non-native learners to modify their processing of English phonetic features, including vowel distinctions combined with consonant sounds.
Research conducted by Bidelman and Alain (2021) demonstrated that musicians perform better than non-musicians when discriminating speech in noisy conditions, which is fundamental to speech comprehension for non-native speakers. English speakers who are not native to the language require superior abilities to understand speech even when it occurs in noisy or degraded environments due to their struggles with English phonetic structures. Music training delivers new cognitive abilities to non-native language speakers, enhancing their ability to understand speech.

Cognitive Load Theory and Music

Sweller's Cognitive Load Theory (2021) demonstrates that optimal learning and performance occur when the cognitive load is at its peak. Learning English as a second language adds a significant mental burden to students due to the linguistic differences between their native sounds and English phonetics. Music, with its simplified explanations of pitch, timbre, and rhythm, can help reduce this cognitive load in speech perception. By using music as a tool, non-native English speakers can improve their perception and production of English sounds more precisely, thereby simplifying the processing of complex phonetic structures.
This research has the potential to uncover how musical training can significantly enhance the cognitive processing capabilities of non-native English speakers learning this language. The findings of this research could lead to a more profound understanding of the role of music in speech
education, offering promising implications for language acquisition and cognitive functions.

Pitch and Timbre in Speech and Music Perception

Speech and music perception base their fundamental perception on pitch and timbre elements. Proof of speaker identity and emotional tone recognition stems

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from pitch perception, while timbre perception enables the recognition of phonemes (Assmann & Summerfield, 1990; Brokx & Nooteboom, 1982; Darwin, 2008; Carlson et al., 1979; Goswami et al., 2011). Music listeners identify instrument sounds correctly because of timbre, yet need pitch to understand melodies (Grey, 1977; McAdams et al., 1995). Non-native English speakers benefit strongly from these vital acoustic indicators for comprehending speech since they face issues differentiating English vowels, vocalization frequencies, and consonant features.

According to Kraus and Ch Chandrasekaran (2010), musical training has the potential to significantly improve music and speech perception. For students who are not native English speakers, this could mean a substantial improvement in their recognition of English speech auditory components, which are fundamental to music processing, after taking music classes. This suggests that musical training, when used as an educational tool, can help non-native speakers develop superior auditory sensitivity, enabling them to better detect vital elements in spoken English.

Music and Speech Perception in Adults and Children

Research indicates that musicians can detect speech through noise better than non-musicians based on findings from Fuller et al. (2014) and Parbery-Clark et al. (2009). The impact of music on listening to speech shows diverse and unreliable results across different studies. In their study, Allen and Oxenham (2014) demonstrated that musicians shared the same risk of pitch and timbre cue conflicts in specific perception conditions as non-musicians. Research indicates musical experience improves speech perception abilities; however, musicians and non-musicians struggle with pitch and timbre cue interferences in specific tasks.

Child development studies show children perceive pitch and timbre differently than adults, which implies that age is a crucial variable in how music affects speech perception in adults. According to Crew et al. (2015), children process pitch and timbre differently than adults, and the age-related distinctions matter in evaluations of music-based speech perception among non-native speakers at different life stages. The present investigation studies speakers of different age groups, demonstrating that participants' developmental phase affects how much music instruction improves their speech perception capabilities.

Implications for Non-Native English Speakers

The perception of English phonetic elements proves challenging to non-native speakers because they do not exist or differ from those in their first language. Non-native learners benefit from music training because both mediums focus on core phonetic elements, allowing improved speech perception and production. The research findings suggest that non-native English speakers can significantly enhance their speech perception and production through music training, particularly in areas where their native language differs from English, as shown by Zhang et al. (2022).

The research analyzes how music instruction helps non-native speakers who learn English by improving their abilities to detect and produce English sounds. This research investigates how non-native speakers can enhance their English speech perception through musical training by studying the impact of such

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training on complex auditory perception of pitch and timbre.
Numerous studies confirm that music links cognitive functions, auditory perception, and language processing systems. Music training improves perception abilities for listening to music and spoken speech while processing sound in difficult conditions. The challenge of English phonetic characteristics for non-native speakers leads them to use music as an instrumental tool to develop their speech perception ability in English. The present study adds value to scientific investigations about how musical education affects linguistic processing while enhancing foreign language acquisition among non-native English speakers.

Theoretical Framework

The research used cognitive load theory, which examines the mental effort required to perform a task and examines non-native English speakers' speech perception capacity (Sweller, 2021). According to the theory, task performance achieves its highest level when the mental effort, or cognitive load, required for the task is managed efficiently. High cognitive load, or mental strain, makes it difficult for listeners to understand and memorize speech-related information in the context of speech perception. English language learners experience additional mental strain when listening and speaking English phonetic elements, which their native tongues do not include (Zhang et al., 2022). English language acquisition for second-language learners requires significant mental effort because they struggle to identify vowels, consonants, and stress patterns in the English phonological structure.
The rhythm, pitch, and melody musical elements were predicted to simplify the cognitive speech perception process by highlighting certain phonetic features. Musical sounds help decrease mental work when processing complicated sounds through their structured presentation method (Patel, 2021). The research showed that music intervention decreased mental workload by letting students understand vocal characteristics, most notably vowel extension (e.g., the difference between 'bit' and 'beat') and consonant clarity (e.g., the difference between 'pat' and 'bat'), and stress placement in the conversation. Music listening among subjects decreased their cognitive processing demands, thus leading to improved speech delivery and detection skills. The research data showed that music serves as an auditory instrument to simplify the mental operations for non-native speakers to understand better and use English speech sounds (Bidelman& Alain, 2021).
Our application of Cognitive Load Theory to the research has provided compelling evidence for the positive effects of musical exposure on language acquisition. By reducing the mental workload for speakers learning a foreign language, music can significantly improve speech perception and speaking clarity, particularly in the case of challenging English phonetic elements. These findings confirm the potential of music as a language-learning tool and provide a solid foundation for further research and application in this area (Kraus & Chandrasekaran, 2010).

Methodology

Research Design

This study applied a quasi-experimental pre-test/post-test design to investigate

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the impact on non-native speakers' pronunciation and recognition of English words when listening to music. Quasi-experimental design was adopted due to logistical constraints in assigning participants in their natural environment within the school setting, as well as to mimic real-life classroom situations in which intervention is normally applied to intact groups. The design focuses on within-subject comparisons that allow one to measure improvement in speech perception and pronunciation after intervention.

Sampling Method

The sampling design utilized in this study was non-probability purposive sampling. Utilizing this sampling technique was due to it being suitable for selecting participants known to possess certain attributes concerning the purposes of the study. The researcher purposefully selected 20 non-English speaking children between 11-12 years old from two state schools, where all possessed equivalent linguistic backgrounds (e.g., Punjabi, Urdu, Pashto, Balochi), had not undertaken musical or phonic training previously, and were at CEFR levels A1-A2 in English. The selection was also done on teachers' recommendations as well as administrative consent, to ensure that participants represented an accurate educational environment in which music-based interventions might realistically have an application. Use of this purposive design allowed for the researcher to focus on one particular subset of learners likely to benefit from intervention while maximizing internal validity for the study, but acknowledging that such non-randomized studies have limitations for use in all circumstances.

Table 1: Demographic Characteristics of Participants (N = 20)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	12	60%
	Female	8	40%
Grade Level	Grade 6	10	50%
	Grade 7	10	50%
Regional Language	Sindhi	5	25%
	Punjabi	7	35%
	Pakhtoon	2	10%
	Balochi	1	5%
	Urdu	5	25%
Age Group	11–12 years	20	100%

Two instruments were employed to test speech perception and pronunciation: (1) a musical stimulus and (2) an original passage test designed by the researcher. “Thank You” by Dido was selected as the musical stimulus for use due to its slow rhythm, clear pronunciation, and richness in terms of phonetics. Its lyrics included numerous phonetic difficulties such as variations in vowel length, consonant clusters, and natural stress. Its emotional connotation and repetitiveness also maximized the chances for cognitive attention, retention for phonemes, and mimicry practice—characteristics in accord with the OPERA hypothesis by Patel (2021). The second instrument, an original passage called "The Unexpected Journey," was designed for this research to use as both a

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listening test and a speaking test. The passage included sophisticated sentence constructions, contrastive features in terms of sounds (e.g., /θ/ vs. /s/, /v/ vs. /w/, /p/ vs. /b/), stress placement variations, and vocabulary suitable for learners at an 11- to 12-year-old's level. The passage's topic was appealing to learners at this level and pushed learners to their limitations to process speech under load, in alignment with both Cognitive Load Theory (Sweller, 2021) as well as learning objectives in this study.

The instrument (song + passage) was pretested on five students with demographic profiles that were as close as possible to those in the study sample. Internal consistency was tested on the results from the pilot using Cronbach's Alpha, which gave acceptable levels for both sub-tasks on recognition and pronunciation reliability coefficient for the speech recognition test was α = .82, and for the pronunciation rubric-based scoring was α = .86, indicating strong internal consistency and tool appropriateness for further implementation.

Table 2: Reliability of the Measurement Instruments (Cronbach's Alpha)

Instrument	Number of Items	Cronbach's α
Speech Recognition Test	20	.82
Pronunciation Rubric	5 (criteria)	.86

Reliability analysis was based on pilot testing with 5 students. Acceptable α threshold = .70 (Nunnally, 1978).

During the intervention phase, participants were exposed to the selected song daily over ten consecutive days for 20 minutes per session. Each session involved listening to the song while reading lyrics on screen, followed by choral repetition and guided pronunciation practice of selected lines. Sessions were conducted in a controlled classroom environment free from external distractions. The reading passage was used before and after the intervention to assess changes in speech recognition (through listening + multiple choice) and pronunciation (through oral reading scored using a 5-point Likert scale rubric). Raters scored pronunciation based on clarity, stress, rhythm, and articulation. All responses were recorded for accuracy and rater verification.

Quantitative data collected from pre- and post-tests were analysed using paired sample t-tests to determine the statistical significance of the differences. Pronunciation improvements were measured through average rubric scores, while recognition improvements were derived from percentage accuracy in listening tasks. Inter-rater reliability for pronunciation was ensured through double-blind scoring, and disagreements were resolved through mutual consensus.

Ethical clearance was obtained from the school administration, and written consent was provided by all participants' guardians. Participants were informed of their right to withdraw at any point. Confidentiality of student data was maintained throughout the study.

Results and Findings

To determine the effect of music exposure on students' English speech recognition abilities, a paired-sample t-test was conducted comparing scores from the pre-test and post-test. The results revealed a statistically significant improvement in speech recognition following the intervention, $t(19) = 7.13$, $p <$

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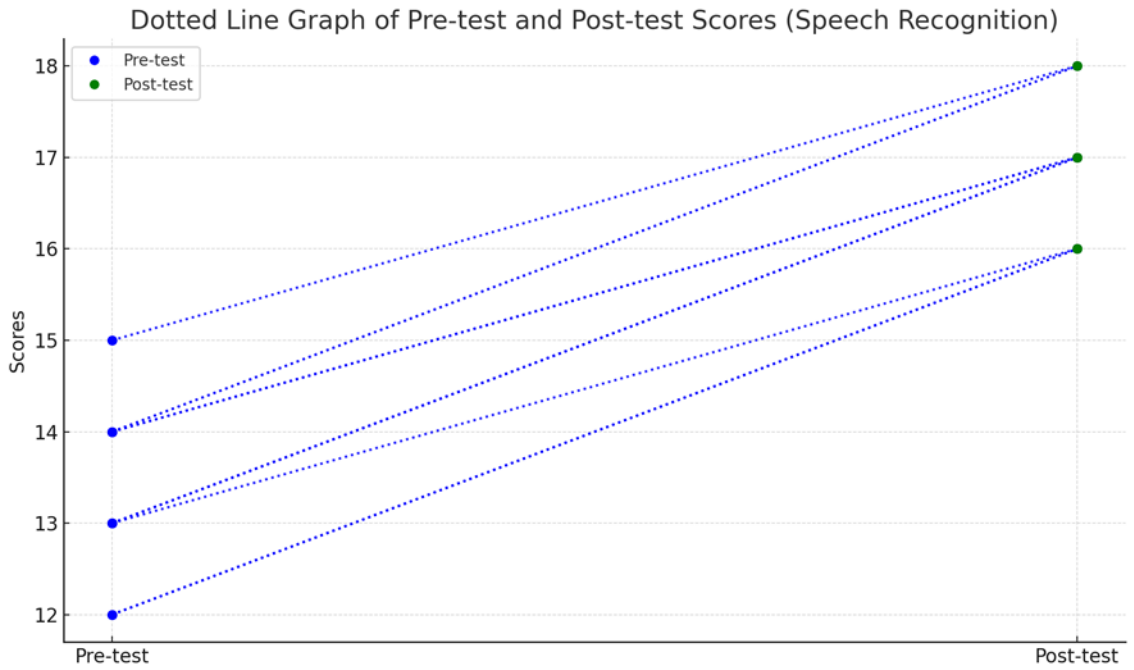
.001, with a large effect size (Cohen's d = 1.59).
Participants demonstrated higher scores on the post-test (M = 16.8, SD = 1.3) than on the pre-test (M = 13.6, SD = 1.9), indicating that the music-based intervention had a meaningful and positive impact on learners' ability to recognize English words with difficult phonetic structures.
These results suggest that exposure to music, especially when designed to emphasize phonetic contrasts such as vowel length, consonant distinctions, and syllabic stress, can substantially improve auditory word recognition among non-native English speakers.



The dotted line graph visually represents the changes in individual participants' speech recognition scores from pre-test to post-test. Each dotted line connects a student's score before and after the 10-days music intervention.

- The x-axis shows two points: *Pre-test* and *Post-test*.
- The y-axis reflects the score out of 20 for the speech recognition task.
- Each blue dotted line shows one student's progress. A rising line indicates an increase in performance, while a flat or declining line would suggest no change or a drop.

As shown, virtually all lines point upwards from left (pre-test) to right (post-test), similarly indicating that most students enhanced their English word recognition ability following music-based intervention. This figure confirms statistical results reported via a paired t-test and is intuitive evidence of individual-level gains.
The graph introduces an intriguing layer to the results in that it illustrates not just group means but also individual learning paths, which are needed to understand educational treatments.

Pronunciation Scores
In addition to speech recognition, the impact of the intervention on pronunciation performance was evaluated using a second paired-sample t-test.

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The findings revealed a statistically significant increase in pronunciation scores after the music-based intervention, $t(19) = 5.34$, $p < .001$, with a large effect size (Cohen's $d = 1.19$).

The mean pronunciation score increased from $M = 3.2$ ($SD = 0.7$) in the pre-test to $M = 4.1$ ($SD = 0.6$) in the post-test. These scores were derived from open-ended spoken tasks in which participants were evaluated on their articulation of English sounds, accuracy of syllabic stress, and overall speech intelligibility.

These results strongly support the hypothesis that musical elements such as melody, rhythm, and phonetic repetition can act as cognitive and auditory scaffolds for improving pronunciation in non-native learners. The intervention appeared particularly effective in enabling students to produce clearer vowel contrasts and to apply stress appropriately in polysyllabic words.

Table 3: Paired Sample t-Test Results for Pronunciation Scores

Measure	Pre-test M (SD)	Post-test M (SD)	t	df	p	Cohen's d
Pronunciation Score	3.2 (0.7)	4.1 (0.6)	5.34	19	< .001	1.19

The findings of this study clearly demonstrate that music-based interventions significantly enhance both speech recognition and pronunciation abilities in non-native English-speaking students. The high effect sizes in both domains ($d > 1.0$) suggest that the improvement was not only statistically significant but also educationally meaningful.

These results support the broader theoretical claims of the OPERA hypothesis and Cognitive Load Theory, which posit that structured musical input can reduce cognitive strain and enhance speech perception. The dual benefit observed—improvement in auditory recognition and speech production—provides compelling evidence that music can serve as an effective tool in second language phonetic training.

Discussion

The primary objective of this study was to determine whether exposure to English music, specifically through the song "Thank You" by Dido, could significantly improve the pronunciation and recognition of English words among non-native speakers aged 11–12 years. The hypothesis posited that music with phonetic exaggeration—emphasizing vowels, consonants, and stress patterns—would lead to measurable improvements in speech perception and production. The findings from this quasi-experimental study strongly support the stated hypothesis and align with prior theoretical and empirical literature.

The results revealed a statistically significant improvement in both speech recognition and pronunciation scores post-intervention. Participants demonstrated higher accuracy in identifying phonetic elements and produced clearer, more intelligible English words. Specifically, the mean speech recognition score increased from 13.6 to 16.8 (out of 20), and pronunciation rubric scores improved from an average of 3.2 to 4.1 out of 5. These results confirm that music exposure played a meaningful role in enhancing participants' ability to process and articulate difficult English phonemes. The large effect sizes

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observed (Cohen's d > 1.0) further underscore the practical significance of the findings.

The improvements in pronunciation can be attributed to the consistent repetition, melody, and rhythmic reinforcement present in the selected music. Repetition and patterning in music are known to reinforce phonological memory and enhance phonemic awareness (Patel, 2021). Additionally, the controlled exposure to the song "Thank You" allowed learners to repeatedly encounter and mimic target phonetic forms in a non-threatening, enjoyable context—an approach that aligns with affective learning theories and the OPERA hypothesis.

The findings of this study are consistent with previous research exploring the impact of music on language acquisition. Patel's (2021) OPERA hypothesis suggests that musical training enhances speech processing in the brain by engaging overlapping auditory networks and increasing motivation. While this study did not involve formal musical training, the structured exposure to a music-based intervention provided similar benefits by targeting difficult phonetic contrasts in a controlled auditory format.

Similarly, Bidelman and Alain (2021) found that musicians performed better in speech-in-noise tasks than non-musicians due to enhanced auditory discrimination abilities. The significant improvement in speech recognition scores in the current study suggests that even non-musicians can benefit from musical input when the material is phonetically rich and pedagogically tailored. This supports the idea that music can train the auditory system in ways that parallel formal speech training.

In terms of pronunciation improvement, the results resonate with Zhang et al. (2022), who identified vowel length, dental fricatives (/θ/, /ð/), and stress patterns as major hurdles for non-native English speakers. The customized reading passage "The Unexpected Journey," which was used for pre- and post-testing, deliberately incorporated these elements to evaluate improvement in high-risk phonetic areas. Post-test readings showed that students not only improved in producing these features but also demonstrated greater fluency and prosodic control. This validates the theoretical proposition that exposure to phoneme-rich music reinforces articulatory habits and facilitates the internalization of challenging sound patterns.

Furthermore, the study aligns with Sweller's (2021) Cognitive Load Theory, which postulates that reducing extraneous cognitive load can improve learning outcomes. Music provided a scaffolded, emotionally engaging way to highlight phonetic elements, which likely reduced cognitive burden and allowed students to focus on sound discrimination and articulation. This may explain the higher post-test performance in both recognition and production, particularly for phonemes not present in the learners' native languages.

A unique contribution of this study lies in the integration of emotional content in the intervention. The song "Thank You" features a personal, emotionally resonant narrative, which likely enhanced student engagement. Emotional arousal has been shown to improve memory encoding, especially for auditory and language stimuli (Bidelman & Alain, 2021). The passage used in the test, "The Unexpected Journey," also included suspenseful and relatable elements, prompting deeper cognitive engagement. Emotional involvement may have acted as a catalyst for retention, as students not only heard but *felt* the language, making it more memorable.

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The results of the pilot study using Cronbach's Alpha established that the instruments used were reliable. The internal consistency of the speech recognition tool (α = .82) and pronunciation rubric (α = .86) confirms that the tests consistently measured the intended constructs. This reliability strengthens the argument that the observed improvements were due to the intervention rather than measurement error.

These findings have several implications for English language teaching, especially in multilingual or resource-constrained settings. First, incorporating music into language curricula can serve as an effective and low-cost tool for phonetic training. Second, age-appropriate and phonetically rich passages can be used to complement musical input for assessing progress in a controlled manner. Finally, emotionally engaging content should be prioritized in lesson design to increase learner motivation and focus.

Limitations of the Study

While the results of this study provide valuable insights into the role of music in enhancing English speech perception among non-native speakers, several limitations must be acknowledged. Firstly, the sample size was relatively small, comprising only 20 participants, which limits the statistical power and generalizability of the findings. The use of a quasi-experimental design without a control group further restricts the ability to attribute improvements exclusively to the music intervention, as other uncontrolled variables (such as classroom exposure or peer influence) may have contributed.

Secondly, the study focused on a specific age group (11–12 years) and linguistic background (primarily South Asian languages), which may not reflect the experiences of learners from other age brackets or language groups. Furthermore, the intervention duration—limited to five consecutive days—may not capture the long-term effectiveness of music-based learning. Retention of phonetic improvements over time was not assessed, which is critical for evaluating the lasting impact of the intervention.

Another limitation lies in the subjective nature of pronunciation scoring, despite employing two trained raters and a validated rubric. While efforts were made to ensure inter-rater reliability, subtle variations in scoring could still occur. Lastly, the study utilized only one song and one passage, which may not represent the full diversity of phonetic challenges encountered in authentic English speech.

Recommendation

Based on the findings and observed limitations, several recommendations are proposed for future research and pedagogical practice. First, future studies should include a larger, more diverse sample to increase the generalizability of results across different age groups, linguistic backgrounds, and educational contexts. Implementing a randomized controlled trial (RCT) design with a control group would help isolate the specific effects of music on speech perception and pronunciation.

Second, the duration of the intervention should be extended and followed by longitudinal assessments to evaluate the retention of phonetic gains over time. It would be beneficial to assess whether periodic reinforcement through music continues to support sustained improvements in speech processing.

Third, future studies should explore the impact of different genres of music,

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including rap, classical, and folk, to determine whether certain musical elements (tempo, pitch, lyrical density) are more effective in highlighting phonetic features. Researchers could also experiment with interactive digital tools that blend music, phonetics, and gamification for a more immersive experience.

In classroom practice, educators are encouraged to integrate music-based activities into phonetics instruction, especially for difficult sounds such as /θ/, /ð/, /v/, and long-short vowel distinctions. The use of custom passages that align thematically with the music can provide contextual reinforcement and allow learners to practice pronunciation in meaningful ways. Training language teachers to assess speech using standardized rubrics and to use music strategically can enhance the overall effectiveness of second language instruction.

Conclusion

The purpose of this study was to see whether learning music in English could impact learners' pronunciation and recognition of English words by non-native learners. The outcome confirms the hypothesis considerably, indicating that music-based intervention is an effective tool that can considerably boost learners' production and perception skills in speech. Learners gained considerably in perceiving phonetically challenging words as well as in producing them more correctly after listening to one song multiple times that contained over-emphasized phonetic features. The outcomes align with such prevailing arguments, such as that presented by the OPERA hypothesis (Patel, 2021) as well as Cognitive Load Theory (Sweller, 2021), essentially reaffirming that music is not simply an aesthetic tool but even an effective pedagogical device. Integrating emotional arousal, practice, alongside phonetic stress, music presents an easy but an effective means to acquire language, especially in multilingual and resource-constrained learning environments. Although limited in scope and design, this research contributes to an ongoing body of research on employing innovative, multimodal second language acquisition approaches. Further research using more robust methodologies will be needed to advance our understanding of the role that music plays in learning to speak and inform best practice in language teaching. In sum up, this study verifies that music is not simply an adjunct to traditional language training—it is an effective central approach to developing auditory discrimination and correct pronunciation in non-native speakers

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