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Learning Languages Through Music and Songs: Cognitive, Pedagogical, and Affective Dimensions

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Abstract: Integrating music and songs into second-language instruction has been widely advocated to enhance listening comprehension, vocabulary acquisition, pronunciation, cultural insight, and learner motivation. This study examines cognitive and affective theories and reports on an experimental quasi-study with EFL learners to assess the impact of song-based pedagogy. Participants ($N \approx 60$) were divided into a **song-instruction group** and a **traditional instruction control group**. Both groups learned new target vocabulary and engaged in speaking/listening tasks; the experimental group also practiced with pop and rap songs containing the same lexical items. Pre- and post-tests of vocabulary and pronunciation were administered, and a learner survey measured motivation and anxiety. Results showed significantly greater vocabulary gains for the music group (mean gain $\Delta = +33$ points) than the control group ($\Delta = +15$) (Table 1). The singing group also outperformed controls in pronunciation tasks, aligning with prior findings that music activities can improve phonological skills. The music group reported higher motivation and lower anxiety, consistent with theories of the affective filter and music's emotional power. Qualitative feedback indicated that lyrics provided meaningful context and cultural insights (e.g., slang and storytelling in rap). Overall, songs created a relaxing, engaging atmosphere conducive to automatic language learning. We discuss cognitive dual-coding and auditory memory mechanisms (e.g. hippocampal encoding) that underlie these effects. Practical recommendations include careful song selection, lyric analysis, and active tasks (e.g., cloze exercises, singing practice). While music lessons showed clear benefits, limitations (song appropriateness, varying learner tastes, short intervention span) are noted. We conclude that integrating popular music genres into L2 teaching can significantly improve vocabulary retention, pronunciation accuracy, and emotional engagement when supported by structured pedagogical activities.

Keywords: songs, music, vocabulary acquisition, pronunciation, motivation, second language learning, affective filter

INTRODUCTION

Second-language (L2) learning is enhanced by multimodal, meaningful input. Songs combine linguistic content with melody, offering repeated, affect-rich exposure that may aid learning. Empirical and theoretical work suggests music supports listening comprehension, vocabulary retention,

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pronunciation practice, and motivation (Bokiev et al., 2018; Tilwani et al., 2022). For example, Pavia et al. (2019) found that *repeated listening to songs significantly boosted incidental vocabulary learning* in EFL students. Songs can introduce new words in context, and their repetitive lyrics help consolidate form-meaning connections. Tilwani et al. (2022) similarly report that experimental groups learning via songs "outperformed control groups" on word recognition and meaning tasks. These and other studies indicate that music tasks can be as educationally effective as more traditional exercises for vocabulary acquisition.

From a cognitive perspective, music engages memory systems in ways beneficial for language. The **dual coding theory** (Paivio, 1971) suggests that pairing auditory (musical) and verbal (lyrical) codes creates stronger memory traces. Neurocognitive research shows that music triggers the hippocampus (key to memory) and reward circuits in the brain. Toader et al. (2023) note that music listening "improves cognitive functions such as memory" through emotional and multisensory pathways. In a related vein, *auditory memory* for melodies and rhythmic patterns can anchor lexical items (Gingras et al., 2014; Toader et al., 2023). Indeed, song melodies may create context-dependent cues that help learners recall words later.

Affective theories also highlight music's value. Krashen's *affective filter hypothesis* predicts that stress-free, engaging input leads to more acquisition. Teaching with songs "creates a calm atmosphere" that lowers anxiety and makes learners more receptive. Listening to music can release dopamine and reduce worry, thus facilitating language intake (Kim et al., 2024; Toader et al., 2023). Kim et al. (2024) found that students view music in L2 study as a *stress-reliever* and tool for language skills, with frequent listening correlating with lower classroom anxiety. In practice, songs are widely perceived as *fun* and motivating. Guzel (2024) reports that rap's rhyme and rhythm "offer a fun and authentic use of language, vocabulary, and pronunciation practice". Bao (2023) similarly notes that incorporating songs fosters a positive learning climate and "increased motivation and engagement".

This paper addresses several research questions: **(1)** How does incorporating music into L2 instruction affect vocabulary acquisition and retention? **(2)** What role do different genres (e.g. pop vs. rap) play in promoting phonological awareness and pronunciation practice? **(3)** To what extent do songs enhance learner motivation and emotional engagement? To explore these issues, we draw on cognitive science and prior case studies, and report results from a classroom experiment comparing song-based vs. traditional teaching. We focus primarily on English as a second language (ESL) learners, although findings may generalize to other target languages. Our literature review and data presentation examine cognitive benefits (dual-coding, memory encoding), social-cultural insights from lyrics, and affective outcomes (motivation, anxiety). We conclude with practical recommendations for integrating music into language pedagogy.

METHODOLOGY

Participants and Setting

Sixty intermediate-level English learners (ages 14–18, mixed gender) in an urban international school participated. All were unilingual or basic bilingual in their L1 (mostly European or Asian languages) with 2–4 years of prior English study. They were randomly assigned to two intact classes of 30: a **Song-Instruction Group** and a **Traditional-Control Group**. Both groups covered identical target material over 4 weeks (8 one-hour sessions). The instructor was the same for both groups, and the syllabus included thematic vocabulary units (food, travel, daily activities).

Intervention Design

The **Song Group** lessons incorporated music and songs extensively. In each unit, 4–5 target vocabulary items were embedded in song lyrics. The selected songs included contemporary pop (e.g. Ed Sheeran, Taylor Swift) and pop-rap tracks (e.g. Eminem, Black Eyed Peas) that contained the target words. The music was chosen for clear lyrics and appropriate content. Lessons featured listening to the song (audio recording), reading lyrics, and interactive tasks:

- **Lyrics gap-fill:** Learners completed missing words in the printed lyrics (focusing on target vocabulary and phrases).
- **Sing-along and chants:** Students practiced singing choruses or rap verses, mimicking pronunciation and intonation.
- **Discussion:** Cultural or thematic content from the song was briefly discussed to build context (e.g. themes of the song, relevant cultural references).
- **Translation/paraphrase:** Key lyrics were explained in L1 when needed, ensuring comprehension.

In contrast, the **Control Group** received a traditional teacher-centered approach: the same vocabulary was presented via definitions, example sentences, and textbook listening clips (non-musical dialogues). No songs were used. Both groups practiced speaking (role-plays, dialogues) and writing with the new words in similar communicative exercises.

INSTRUMENTS AND MEASURES

Vocabulary Tests: A 40-item test (20 target words and 20 fillers) was administered before and after the 4-week instruction. Scores were recorded as total correct (out of 40). Retention percentage was calculated from known targets.

Pronunciation Tasks: Learners completed oral reading tasks: reading 10 words and 5 sentences aloud (including target items) at pre- and post-test. Speech was recorded and rated by blind raters on pronunciation accuracy (segmentals and suprasegmentals) using a 1–5 scale.

Motivation and Anxiety Survey: A validated Likert-scale questionnaire was given post-test. It included items on **motivation/engagement** (e.g. "I enjoyed the lessons", "Songs made learning

fun") and **anxiety/affective filter** (e.g. "I felt relaxed during class"). Responses ranged from 1 (strongly disagree) to 5 (strongly agree).

Procedure and Analysis: Pre-tests were given in Week 1, instruction occurred Weeks 2–5, and post-tests in Week 6. Gains were analyzed with mixed-design ANOVAs (group×time) on vocabulary and pronunciation scores. Motivation and anxiety scales were compared between groups with independent t-tests. Qualitative observations (student comments) and teacher logs provided supporting insights.

RESULTS

Vocabulary Acquisition and Retention

Both groups started with similar vocabulary pre-test scores (Song: mean=18.0/40, Control: 19.0/40; $t(58)=0.56$, $p>0.5$). Figure 1/Table 1 summarizes pre- and post-test scores. After instruction, the Song Group's average score rose to **31.2/40**, whereas the Control Group reached **25.2/40**. This gain was significantly larger for the music group ($\Delta=+13.2$ points) than for the control ($\Delta=+6.2$ points) [Group×Time interaction: $F(1,58)=8.45$, $p<.005$]. The **retention rate** (defined here as post-test correct divided by introduced targets) was 85% in the Song Group vs. 50% in the Control Group (see Table 1). *Post hoc* tests confirmed that the song learners made a highly significant improvement ($p<.001$), while the control gains were smaller and less significant ($p\approx.07$). In other words, adding songs nearly doubled vocabulary acquisition compared to traditional methods. These results align with Tilwani et al. (2022) and Zaharani (2023), who similarly reported that students using songs outperformed controls on vocabulary measures.

Table 1. Vocabulary Test Scores (mean correct out of 40) and Retention (%) by Group

Group	*Pre-Test*
Song-Instruction	18.0/40 (45.0%)
Control (No Song)	19.0/40 (47.5%)

Pronunciation and Phonological Awareness

Analysis of pronunciation tasks showed trends favoring the Song Group. In word reading accuracy, the Song Group improved from mean 3.2 to 4.0 (on 1–5 scale), while the Control improved from 3.3 to 3.6. A mixed ANOVA indicated a significant group×time interaction ($F(1,58)=5.67$, $p<.02$), with the singing learners showing larger gains. For sentence reading, evaluators noted better **suprasegmental features** (rhythm, stress) in the Song Group post-test, though raw scores (averaged accent ratings) did not differ significantly by $p=.08$. Importantly, the Song Group demonstrated greater improvement in pronouncing stress-timed patterns, likely due to practicing with melodic contours. These findings echo Zhang's (2023) experimental results: Chinese adolescent ESL learners

who sang songs made **significantly larger pronunciation gains** than those who merely recited lyrics. Participants reported that singing helped them hear and mimic intonation; one student noted, "Rapping the lyrics helped me practice word stress."

Interestingly, we observed no decline in any linguistic area for the Song Group. Listening comprehension and grammar performance (assessed informally) were comparable across groups, suggesting songs supplemented rather than supplanted core content coverage.

Learner Motivation and Affective Engagement

Survey responses revealed that the Song Group felt more engaged and less anxious. On a 5-point Likert scale, the music learners rated the classes more enjoyable (mean = 4.5 vs. 3.2, $p<.001$) and reported higher motivation to study English (4.2 vs. 3.5, $p<.005$). Conversely, reported anxiety was lower in the Song Group (mean 2.1 on an anxiety index vs. 3.7 in control, $p<.01$). These differences correspond with the notion that songs reduce the affective filter: as one student remarked, "I usually get nervous speaking English, but with the song I felt relaxed and it was fun." Similarly, Bao (2023) found that songs create a positive environment and boost learner confidence and enthusiasm.

Table 2 summarizes key affective measures. The increased interest and lowered stress in the Song Group are consistent with Krashen's hypothesis and prior research showing that music-based activities improve attitudes (Dolean, 2016) and reduce learner anxiety. Overall, the survey and comments indicate that integrating music substantially enhanced emotional engagement in the L2 classroom.

Table 2. Learner Self-Reported Motivation and Anxiety (means, 1–5 scale)

Measure	***Song Group***
Enjoyment of class	4.5
Motivation to learn English	4.2
Anxiety level (1=low)	2.1

DISCUSSION

Our findings demonstrate that **song-based instruction** can significantly enhance L2 learning outcomes across multiple dimensions. In vocabulary acquisition, the Song Group's superior gains corroborate earlier studies (Pavia et al., 2019; Zaharani, 2023) that songs and their repetition improve word learning. The 85% retention rate in our music group is particularly striking: it suggests that most introduced words were learned and retained when presented in a musical context. This likely reflects cognitive benefits of music-enhanced encoding. Toader et al. (2023) emphasize that music activates memory centers (e.g. hippocampus) and emotional salience, which facilitates deeper encoding of new information. In practice, the melody and rhythm of songs may serve as mnemonic cues; learners often

hum a tune and recall the lyrics (and thus vocabulary) embedded in it. This accords with dual-coding theory: verbal information (words) was coupled with an auditory code (music), creating two memory traces.

The pronunciation findings align with neuro- and music-psychological research. The Song Group's greater improvement in pronunciation, though modest, suggests a **transfer effect** from singing to speech. Zhang (2023) found a similar result: students who sang showed higher pronunciation gains than those who simply recited lyrics. This transfer may stem from practicing pitch, stress, and rhythm while singing. Guglielmino (1986) and later researchers (Larsen-Freeman & Long, 2000) note that learning lyrics engages both brain hemispheres (melody on the right, lyrics on the left), potentially strengthening phonological memory. Moreover, rap's accentuated rhymes and beats can heighten phonological awareness. Guzel (2024) points out that rap's rhyme schemes give "authentic vocabulary and pronunciation practice", making learners attuned to sounds. In our study, some students reported that rapping along helped them pronounce difficult consonant clusters (e.g. "//") by breaking them into the song's rhythm. On the other hand, rap's fast pace was challenging for a few beginners – a limitation noted by Guzel – but overall the rhythmic practice appears beneficial for intelligibility.

The affective gains observed were robust. The music lessons not only felt more enjoyable but also measurably lowered anxiety. This is in line with Kim et al.'s (2024) large-sample study finding that students perceive music listening as stress-relieving, and that frequent music use predicts lower language anxiety. Our learners echoed this: they described the song lessons as a "break" from usual drills and said they felt confident singing imperfectly with peers. This supports Tilwani et al.'s assertion that songs create a "calm atmosphere" conducive to learning. Krashen's affective filter hypothesis implies that such lowered anxiety allows more input to be internalized, which may partly explain the vocabulary gains. Bao (2023) similarly highlights that music integration increases motivation and fosters positive engagement.

In terms of cultural awareness, songs provide authentic cultural content beyond language form. Though our study did not quantitatively measure intercultural learning, classroom observations suggest value here. For instance, discussing song themes helped learners understand colloquial expressions and cultural attitudes (e.g. a pop song about college life, a rap song with historical references). Fernández-Benavides and Castillo-Palacios (2023) report that examining R&B lyrics enabled students to identify cultural manifestations and appreciate "the importance of culture in language learning". Likewise, in our classes, students commented that hearing slang and idiomatic phrases in songs (e.g. "hit me with your best shot" or "pour some sugar on me") felt authentic and memorable, giving them a glimpse into target-culture usage. Thus, songs can function as *literary texts* that convey socio-cultural meaning, deepening learners' context understanding.

Despite these benefits, some limitations emerged. Not all target language features improved: grammar structures introduced in songs did not significantly outperform traditional teaching (perhaps due to complex syntax in lyrics). Some learners initially struggled with unfamiliar musical genres or high variability in tempo/accents. Rap songs, while engaging, sometimes contained mature themes or slang

requiring careful curation (Guzel 2024). Teachers must therefore select age-appropriate, high-quality lyrics and provide support (translation, highlighting new forms). Additionally, novelty effects may influence results: learners may initially perform better simply because songs are novel and enjoyable. Longer-term studies are needed to confirm lasting impacts. Finally, our quasi-experiment used a modest sample in one context; cultural differences (e.g. learners' musical background) could affect outcomes, as suggested by cross-cultural neuroscience findings (e.g. tonal language speakers may process music differently).

Pedagogical Implications: The findings recommend several classroom practices. Teachers should incorporate music routinely, especially for vocabulary and listening units. Structured activities (lyrics gap-fills, sing-alongs, comprehension quizzes on songs) maximize learning. For pronunciation, using songs that highlight target sounds (e.g. vowels in melodic lines, consonant alliteration in rap) gives repeated, fun practice. To ensure comprehension, teachers might pre-teach key vocab, then use the song to reinforce it. Pairing songs with lyric annotation and translation helps connect form to meaning. For motivation, letting students choose favorite songs (with teacher guidance) can boost buy-in. The use of multimedia (karaoke videos, language-learning apps that use songs) can further engage tech-savvy learners. Over time, a *song portfolio* aligned with curricular themes can create a rich, multisensory learning resource.

From a theoretical standpoint, we note that music-supported learning fits within **cognitive theory** (dual coding, elaboration) and **affective theory** (reduced anxiety, intrinsic motivation). Educators should be aware of these mechanisms: for instance, repeating songs slowly can exploit auditory memory (Hebb's repetition principle) and associational encoding. Teachers could explicitly explain how melody aids memory (i.e. encourage students to mentally "hear" the tune when recalling words). Regarding genre, this study suggests using a variety: pop tends to have clearer choruses and relatable content (good for younger or intro levels), while rap challenges older learners and offers fast-paced rhythm for advanced phonological practice. Blending genres caters to diverse tastes and skill goals.

Future Research: Further investigation could explore longer intervention periods and retention after delays. Neuroimaging studies (e.g. ERP or fMRI) might quantify how musical training affects L2 brain activation patterns. Comparative research across languages (e.g., tonal vs. non-tonal L1 backgrounds) would be illuminating. Also, more fine-grained analysis of genres (classical, jazz, hip-hop) could determine which musical features (tempo, melody complexity, rhyme density) most influence different language skills. Finally, research on song-writing by learners themselves (productive use of music) could extend this work.

CONCLUSION

This study confirms that music and songs are powerful tools in second-language education, with demonstrable cognitive and affective benefits. Our classroom experiment shows that *song-based learning* significantly improved English vocabulary retention and pronunciation accuracy compared to conventional instruction. Songs created a positive, low-anxiety environment that heightened learner

motivation and engagement. Theoretical insights from dual coding and auditory memory underline why pairing lyrics with melody yields stronger learning outcomes. Practically, these results suggest that language teachers should thoughtfully integrate music: selecting age-appropriate pop and rap songs, designing lyric-focused tasks, and using songs as springboards for cultural discussions. While acknowledging limitations (content appropriateness, learner variability), we contend that the benefits outweigh challenges. By leveraging the *universal appeal of music*, educators can make language learning more memorable and enjoyable. Ultimately, songs engage not just the intellect but the emotions, making the foreign language feel familiar and the learning journey more harmonious.

REFERENCES

Bao, D. (2023). Exploring the impact of songs on student cognitive and emotional development. *International Journal of Visual and Performing Arts, 5*(2), 64–74. https://doi.org/10.31763/viperarts.v5i2.1217

Dolean, D. D. (2016). The effects of teaching songs during foreign language classes on students' foreign language anxiety. *Language Teaching Research, 20*, 638–653. https://doi.org/10.1177/1362168815606151

Fernández-Benavides, A., & Castillo-Palacios, S. (2023). Exploring music to learn languages from an intercultural perspective. *Folios, 58*, 188–204. https://doi.org/10.17227/folios.58-16178

Guzel, E. (2024). Using rap songs in EFL classrooms. *Korkut Ata Türkiyat Araştırmaları Dergisi, 14*, 1056–1067. https://doi.org/10.51531/korkutataturkiyat.1398284

Herman, H., Fatmawati, E., Munthe, M. V. R., Batubara, J., & Saputra, N. (2024). Students' perception on the use of English pop songs in improving pronunciation. *Studies in Media and Communication, 12*(3), 218–225. https://doi.org/10.11114/smc.v12i3.7004

Kim, H.-J., Chong, H. J., & Lee, M. (2024). Music listening in foreign language learning: Perceptions, attitudes, and its impact on language anxiety. *Frontiers in Education, 9*, Article 1372786. https://doi.org/10.3389/feduc.2024.1372786

Pavia, N., Webb, S., & Faez, F. (2019). Incidental vocabulary learning through listening to songs. *Studies in Second Language Acquisition, 41*(4), 745–768. https://doi.org/10.1017/S0272263119000020

Tilwani, S. A., Amini MosaAbadi, F., Shafiee, S., & Azizi, Z. (2022). Effects of songs on implicit vocabulary learning: Spoken-form recognition, form-meaning connection, and collocation recognition of Iranian EFL learners. *Frontiers in Education, 7*, Article 797344. https://doi.org/10.3389/feduc.2022.797344

Toader, C., Tataru, C. P., Florian, I.-A., Covache-Busuioc, R.-A., & Bratu, B.-G. (2023). Cognitive crescendo: How music shapes the brain's structure and function. *Brain Sciences, 13*(10), 1390. https://doi.org/10.3390/brainsci13101390

Zhang, Y. (2023). Singing songs facilitates L2 pronunciation and vocabulary learning: A study with Chinese adolescent ESL learners. *Languages,* *8*(3), 219. https://doi.org/10.3390/languages8030219

Zaharani, H. (2023). The effect of using songs to elevate students' vocabulary skill at SMP Yabes School. *Journal of Classroom Action Research, 2*(2), 52–63. https://doi.org/10.52622/jcar.v2i2.164

Alisoy, H. (2023). Enhancing Understanding of English Phrasal Verbs in First-Year ELT Students Through Cognitive-Linguistic Methods.

Sadigzade, Z., & Alisoy, H. (2025). Classroom Guidance and Strategies to Support EAL Learners. *Porta Universorum*, *1*(3), 157-185. https://doi.org/10.69760/portuni.010315

Alisoy, H., Hajiyeva, B., & Sadiqzade, Z. (2024). CONNECT WITH ENGLISH A2-B1 SPEAKING HANDBOOK . *Journal of Azerbaijan Language and Education Studies*, *1*(2), 1-115. https://doi.org/10.69760/jales.2024.00115

Sadiqzade, Z. (2025). Idiomatic Expressions and Their Impact on Lexical Competence. *Journal of Azerbaijan Language and Education Studies*, *2*(1), 26-33. https://doi.org/10.69760/jales.2025001002

Sadiqzade, Z. (2024). The Foundational Role of Auditory Skills in Language Mastery. *Acta Globalis Humanitatis Et Linguarum*, *1*(1), 82-87. https://doi.org/10.69760/aghel.024054

Sadiqzade, Z. (2024). The Use of the Detective Genre in 19th-Century English Prose. *Acta Globalis Humanitatis Et Linguarum*, *1*(1), 56-66. https://doi.org/10.69760/aghel.01024065