



Research Article

Music-Based Instruction and Vocabulary Skills Among Grade 12 Students: A Quasi-Experimental Study

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Abstract. Acquiring vocabulary skills remains a crucial part of the language-learning process. This study investigated the effectiveness of music-based instruction in developing the vocabulary skills of Grade 12 students at Hibubullao National High School in Catubig, Northern Samar. It specifically examined and compared the vocabulary skills of students who received music-based and traditional instruction. It employed a quasi-experimental research design, specifically a non-equivalent control group design. The participants were 64 Grade 12 students enrolled in the General Academic Strand during the school year 2025–2026: 35 students in the experimental group and 29 students in the control group. The experimental group received music-based instruction, while the control group received traditional instruction. Pre-test and post-test assessments were administered to determine changes in the students' vocabulary skills following the intervention. The findings showed that both groups initially had low levels of vocabulary skills. After the intervention, both groups demonstrated improvement; however, the experimental group showed greater gains, with more students advancing to higher mastery levels. The independent-samples t-test revealed a statistically significant difference in the post-test vocabulary scores between the two groups, $t(61.89) = 4.32, p < .001$. The experimental group obtained higher post-test vocabulary scores, with a Cohen's d of 1.07, indicating a large effect size and a standard error of 0.28. These findings suggest that music-based instruction may serve as a useful and engaging approach to vocabulary development. Although traditional instruction remains relevant, it may be strengthened through interactive and innovative activities that provide meaningful opportunities for vocabulary practice and application. Overall, the study provides preliminary evidence that purposefully integrated music-based activities may complement regular English instruction and support vocabulary learning.

Keywords: *Mastery level; Music-based instruction; Pedagogical tool; Traditional teaching strategy; Vocabulary skills.*

Vocabulary development continues to play a vital role in language acquisition because learners need sufficient lexical knowledge to understand texts, express ideas, participate in academic tasks, and communicate effectively. In the Philippine context, where English is widely used as a medium of instruction and communication, many Filipino learners still struggle to develop adequate vocabulary. Limited exposure to English may constrain students' ability to understand, use, and retain a wide range of vocabulary needed for academic and professional contexts. In many classrooms, however, vocabulary instruction may be treated as a supplementary component of language teaching rather than systematically integrated into

meaningful academic and real-life contexts. Teachers may place greater emphasis on grammar, reading comprehension, and examination requirements, leaving fewer opportunities for senior high school learners to encounter, practice, and apply vocabulary in varied contexts. This instructional gap may limit the development of the lexical resources required for academic learning and effective communication.

Challenges in language proficiency are reflected in recent national and local educational concerns. The Second Congressional Commission on Education (2026) reported persistent learning gaps in the Philippine education system, highlighting the need for stronger foundational learning and more effective instructional practices. At the learner level, Perez and Perez (2024) found that many senior high school learners did not attain the expected vocabulary proficiency for their grade level. These concerns are especially relevant to schools where learners continue to struggle to understand and use vocabulary. At Hibubullao National High School in Catubig, Northern Samar, the researcher, an English teacher at the school, observed that many Grade 12 students in the General Academic Strand demonstrated low to moderate vocabulary proficiency based on the school's Phil-IRI results for S.Y. 2024–2025. This local condition highlights the need for classroom-based approaches that give learners meaningful, engaging, and repeated opportunities to develop vocabulary.

One potential approach is integrating music and songs into language instruction. Previous studies have identified several ways through which music may support language learning. Bokiev et al. (2018) emphasized the potential of songs to address different learner abilities and provide opportunities for language learning through meaningful and enjoyable activities. Their findings suggest that songs can create a supportive environment where learners encounter language in a more engaging way. Similarly, Sihlova and Gafor (2020) reported that songs can facilitate vocabulary learning by exposing learners to language repeatedly and helping them internalize new words. Grimm (2020) likewise emphasized music's mnemonic potential, suggesting that musical elements can support vocabulary processing and recall. Taken together, these studies suggest that rhythm, melody, repetition, and meaningful linguistic input may support vocabulary retention and language learning.

The potential of songs extends beyond vocabulary retention. Isnaini and Aminatun (2021) found that songs can help learners understand word meanings, improve pronunciation, and develop their overall English proficiency. Their findings show that songs can do more than entertain in the classroom because they give learners opportunities to encounter vocabulary and other language features in meaningful contexts. Similarly, Francisco et al. (2025) highlighted the use of songs as authentic learning materials that expose learners to language as it is used in real-life contexts. Such exposure may help learners connect classroom vocabulary with practical language use and provide opportunities to develop both receptive and productive language skills.

More recent empirical evidence further supports the potential of music-based instruction for vocabulary learning. In a quantitative meta-analysis, Odo (2022) reported an overall positive effect of English songs on second-language lexical learning. Tilwani et al. (2022) likewise found that songs supported several dimensions of implicit vocabulary learning, including spoken-form recognition, form-meaning connections, and collocation recognition. More directly related to adolescent learners, Zhang et al. (2023) found that Chinese adolescent ESL learners who learned through singing with familiar melodies demonstrated greater vocabulary improvement than learners who participated in speech-based activities. These findings provide empirical support for using music as a complementary tool in vocabulary instruction.

Despite these findings, an important research gap remains. Much of the existing literature has examined songs as supplementary materials, sources of authentic linguistic input, or activities for general language learning. Some studies have focused on learners' perceptions, pronunciation, or broad language outcomes rather than vocabulary development within a specific academic subject. Moreover, limited research has examined the systematic integration of music-based activities into English for Academic and Professional Purposes (EAPP), particularly among Filipino senior high school learners. Although previous studies have shown the potential of songs to support vocabulary learning, more research is needed on how music can be deliberately connected to academic competencies, target vocabulary, repetition, contextualization, and application in regular classroom instruction. This gap is particularly evident in local Philippine public-school contexts, where classroom-based evidence on structured music-based vocabulary instruction remains limited.

The present study addresses this gap by integrating music-based activities directly into EAPP instruction among Grade 12 General Academic Strand students at Hibubullao National High School. Unlike approaches that use songs primarily as supplementary listening materials, the present intervention purposefully incorporated songs, rhythm, repetition, and music-inspired activities into selected EAPP competencies and target vocabulary. The study further compared students who received music-based instruction with those who received traditional instruction, providing classroom-based evidence of differences in vocabulary performance between the two instructional conditions. Thus, the study extends previous research by examining music not merely as an enjoyable learning resource but as a deliberately structured pedagogical component of academic vocabulary instruction.

The study is also informed by selected principles of Suggestopedia, a language-teaching approach associated with music, a comfortable learning environment, positive suggestion, and reduced psychological barriers to learning (Yusupova, 2024). Within this perspective, music can contribute to a learning environment that encourages attention, participation, and receptiveness to language input (Lozanov, 1978). The use of music in the present study is therefore consistent with the principle that language learning may be supported when learners are exposed to language in an engaging and less threatening classroom environment. However, the intervention did not fully implement the traditional Suggestopedia method. Rather, selected principles concerning the use of music and an engaging learning environment informed the development of the music-based instructional activities.

In this study, music was not treated as the sole mechanism for vocabulary learning. Instead, it was purposefully integrated with vocabulary presentation, contextualization, repetition, guided practice, and application within EAPP lessons. This distinction is important because the study sought to determine the potential contribution of music-based instruction when it is deliberately aligned with academic language objectives rather than used independently of the curriculum. The approach, therefore, builds upon earlier findings regarding the benefits of songs while addressing the need for structured, curriculum-aligned vocabulary instruction among senior high school learners.

Consequently, this study investigated the effectiveness of music-based instruction in developing the vocabulary skills of Grade 12 General Academic Strand students at Hibubullao National High School in Catubig, Northern Samar. By implementing a structured music-based intervention within EAPP and comparing it with traditional instruction, the study contributes local classroom-based evidence to the growing literature on music and language learning. Specifically, it provides evidence of the potential use of music as a complementary pedagogical strategy for academic vocabulary development among Filipino senior high school learners. Specifically, this study attempted to address the following objectives: 1. Determine the vocabulary skills of the students in the control group before the utilization of the traditional teaching instruction; 2. Determine the vocabulary skills of the students in the experimental group before using music-based instruction; 3. Determine the vocabulary skills of the students in the control group after using traditional teaching instruction; 4. Determine the vocabulary skills of the students in the experimental group after using music-based instruction; 5. Compare significant differences in the vocabulary skills of the students between the control group and experimental group in their pre-test results; and 6. Compare significant differences in the vocabulary skills between the control group and experimental group in the post-test results.

Methodology

Research Design

The study employed a non-equivalent control-group pre-test–post-test quasi-experimental design using intact classes. Pre-test and post-test measures were administered to examine changes in the outcome variable following the intervention and to compare the vocabulary skills of Grade 12 students between the experimental and the control groups. Since the participants were drawn from intact classes and were not randomly assigned, the findings were interpreted as preliminary quasi-experimental evidence rather than definitive evidence of a causal effect. Differences between groups may also reflect pre-existing section characteristics and other contextual factors such as class schedule and class size.

Study Site

The study took place at Hibubullao National High School, Catubig, Northern Samar. The school currently offers

both junior high school and senior high school programs. In senior high school, it offers the General Academic Strand. As of the academic year 2026 to 2027, it has a student population of 651: 474 in junior high school and 157 in senior high school. It has a permanent 43 teaching staff and 5 non-teaching staff, including the school head. The locale was selected as the research site due to its relatively low performance in the National Achievement Test (NAT), particularly in Language and Communication, where students obtained a Mean Percentage Score (MPS) of 43.47%. This indicates a low level of proficiency, with vocabulary identified as a key component contributing to learners' difficulties in the subject. At the provincial level, Northern Samar recorded an overall MPS of 42.92%, further reflecting limited mastery of essential language competencies. Moreover, among the 13 provinces in the Eastern Visayas region, Northern Samar registered the lowest mean percentage score in Language and Communication (Servallos, 2025). This persistent underperformance means the need for targeted instructional interventions to improve learners' vocabulary skills and overall language proficiency, thereby justifying the selection of the locale for the study.

Participants and Sampling Technique

This study included two intact groups of Grade 12 students from the General Academic Strand (GAS) of Hibubullao National High School in Catubig, Northern Samar. The study used purposive sampling, selecting two existing sections as the control and experimental groups. Because students were assigned to their respective sections before the study and were not randomly assigned to the treatment conditions, the groups were treated as non-equivalent. The control group (Section A) consisted of 29 students, while the experimental group (Section B) consisted of 35 students. Both groups belonged to the same strand and were drawn from the same school and local educational context. The students represented varying levels of academic performance based on their previous English grades, including learners with relatively lower and higher academic achievement. The two groups also had varying degrees of exposure to English-related learning activities. The experimental group received music-based instruction, while the control group continued with the regular instructional approach. The use of intact sections was considered appropriate within the existing school setting; however, because only one section represented each condition, differences in outcomes were also influenced by pre-existing characteristics of the sections and other contextual factors.

Research Instrument

The main instrument employed in this study was the vocabulary skills test, which was carefully aligned with the instructional materials used during the pedagogical sessions. While the pre- and post-tests were expected to share the same core content, the vocabulary section of the post-test featured a jumbled order or altered arrangement to prevent rote memorization. The contents were derived from the five (5) lessons in the EAPP subject. The test included 50 multiple-choice items. Furthermore, to interpret the vocabulary test, the 50-item vocabulary test was scored and interpreted according to specific proficiency levels. Three (3) English experts from the Department of Education Division of Northern Samar, Leonardo Amigo High School, and La Perla National High School reviewed and validated the vocabulary test and the corresponding EAPP DLLs in June 2025. Their recommendations focused on improving the clarity, accuracy, and appropriateness of the lesson materials and test items. They also recommended reducing the test from 60 to 50 items and balancing lower-order and higher-order thinking skills (LOTS and HOTS). The instruments were revised accordingly. The researchers then pilot-tested the revised vocabulary test in July 2025 with one Grade 12 GAS section at Catubig Valley National High School. The KR-20 reliability coefficient was 0.99, indicating very high internal consistency. Item analysis further showed that the test items generally had excellent discrimination and varied difficulty levels, allowing the test to assess different levels of vocabulary proficiency. Most items were retained, while Items 1 and 6 were identified for revision.

Meanwhile, the assessment of the learners' vocabulary skills was patterned on the descriptive classification of Mean Percentage Scores (MPS) provided in DepEd Memorandum No. 160, s. 2012. For the 50-item vocabulary test, scores of 48 to 50 (96–100%) were classified as "Mastered," while scores of 43 to 47 (86–95%) were categorized as "Closely Approximating Mastery." Scores ranging from 33 to 42 (66–85%) were classified as "Moving Towards Mastery," whereas scores of 18 to 32 (35–65%) were categorized as "Average." Learners who obtained 8–17 (15–34%) were classified under the "Low" level, while those who scored 3 to 7 (5–14%) were categorized as "Very Low." Finally, scores of 0 to 2 (0–4%) were classified as "Absolutely No Mastery." The corresponding raw-score ranges were determined based on the percentage equivalents for the 50-item vocabulary test and were used as the basis for interpreting the learners' vocabulary skills before and after the

intervention. Because the pre-test and post-test shared similar structure and content, the multiple-choice format ensured standardization, which was important for assessing learning gains.

The DLLs served as the researcher's primary instructional tool for implementing both the traditional teaching method for the control group and the music-based instruction for the experimental group. A total of six (6) unique sets of DLLs were independently prepared for each group to correspond with their respective teaching strategies. These DLLs were based on the sequenced learning competencies outlined for the second semester, second quarter of the academic year 2025 to 2026. Although the EAPP subject contained six (6) broad learning competencies with multiple learning objectives, this study focused on selecting only one (1) learning objective per competency that was most suitable for music-based instruction to capture the entire quarter.

Each lesson in the experimental group was delivered with specific procedures that incorporated music-based instructional strategies purposefully aligned with the weekly topics in EAPP. Specifically, the DLL under the experimental group was unfolded as follows: Week 1 was about looking at arguments in manifestos; Week 2 was about defending a stand with good arguments and facts; Week 3 was about figuring out the goals and structures of different types of reports; Week 4 was about designing, testing, and changing a survey questionnaire; Week 5 was about designing, conducting, and getting information from surveys; and Week 6 was about getting written forms of information from surveys, experiments, or observations. In each of these weeks, clear and structured procedures were followed to integrate vocabulary development with literary and musical elements, which allowed students to engage in contextualized, creative, and purposeful vocabulary learning. Meanwhile, the control group's DLLs used conventional teaching strategies while still integrating vocabulary skills development. The lesson content remained consistent across both the control and experimental groups. However, the pedagogical delivery varied: the control group received instruction through traditional methods, while the experimental group engaged in music-based instruction.

Data Gathering Procedure

In this study, the primary data-collection instrument was a test. The researcher utilized a single instrument, specifically a vocabulary test, to gather the necessary data. The researcher administered pre-test and post-test vocabulary assessments to evaluate the effect of the music-based instructions on students' vocabulary development before and after the intervention. The same teacher-researcher implemented the instructional procedures for both the experimental and control groups, using separate DLLs prepared for each condition. The teacher followed the prescribed lesson sequence, objectives, learning activities, and assessment procedures indicated in the respective DLLs. Likewise, it also maintained the same general classroom expectations, learning targets, and assessment procedures for both groups.

Pretest. The vocabulary test questions were used during the pre-test. This pre-test consisted of 50 questions that focused on vocabulary derived from the lessons in English for Academic Purposes (EAPP). The questions were formatted as multiple-choice. The pre-test involved two (2) intact sections of Grade 12 GAS students at Hibubullao National High School, Catubig, Northern Samar, during the last week of July 2025. Specifically, the control group (Section A) and the experimental group (Section B) both participated in a preliminary pre-test. This assessment measured learners' baseline vocabulary skills before any intervention. The control group (Section A) answered the test under the traditional instructional approach, while the experimental group (Section B) underwent the same assessment. In this way, the pre-test ensures that any improvement in vocabulary skills is more accurately attributed to the treatment applied rather than to pre-existing differences between the groups.

Treatment. The Daily Lesson Logs (DLLs) served as the primary instructional guides in implementing the lessons for both the control and experimental groups. To ensure consistent lesson content while maintaining a clear distinction between the two instructional conditions, six (6) sets of DLLs were independently prepared for each group, for a total of twelve (12) DLLs. The DLLs were aligned with the sequenced learning competencies prescribed for the first semester of Academic Year 2025 to 2026 in English for Academic and Professional Purposes (EAPP). Although the EAPP curriculum for the quarter included six (6) broad learning competencies with several learning objectives, the study selected only one (1) learning objective from each competency, which was considered most appropriate for integrating music-based instructional activities. This resulted in six (6) instructional sessions covering the entire semester. The music-based instruction was implemented from August

to October 2025. The same learning content, target competencies, learning objectives, and general instructional time were maintained for both groups to minimize differences attributable to lesson coverage. For instance, the music-based instruction was implemented for one hour once a week alongside the traditional instructional sessions.

Furthermore, the songs and musical pieces used in the experimental group were selected purposefully based on their relevance to the specific EAPP learning competency and vocabulary objectives addressed in each lesson. Rather than using music merely as background or entertainment, each selection served a specific instructional function, such as introducing a concept, establishing a thematic connection, reinforcing vocabulary, stimulating interpretation, supporting memory and recall, or providing a model for creative language production. The following criteria guided the selection of songs and musical pieces: (1) alignment with the weekly EAPP competency and learning objective; (2) relevance of the song's theme, message, or musical character to the lesson concept; (3) presence of vocabulary or language structures that could be examined or reinforced; (4) clarity and comprehensibility of lyrics or musical patterns; (5) appropriateness of the content and language for Grade 12 learners; (6) potential to stimulate discussion, interpretation, critical thinking, or creative language production; (7) suitability for the specific instructional activity and lesson phase; (8) familiarity or accessibility of the musical selection to facilitate learner engagement; (9) appropriate duration or excerpt length to fit within the allotted instructional time; and (10) potential to provide meaningful opportunities for repetition, contextualization, association, and application of target vocabulary.

The musical selections were incorporated into specific phases of the lessons and were paired with structured activities. The intervention therefore involved active learner engagement with music through listening, lyric analysis, vocabulary identification, interpretation, rhythm and repetition, singing or chanting, and creative production.

The following six (6) instructional sessions were implemented.

Week 1. Analyzing Arguments in Manifestoes. The lesson began with an excerpt from Beethoven's Symphony No. 5 as a musical hook. The dramatic and forceful character of the opening motif was used to evoke ideas of pronouncement, urgency, and revolution, providing an auditory stimulus for introducing the concept and purpose of a manifesto. After listening, learners discussed the mood and message they associated with the musical excerpt and connected these ideas to the characteristics of manifestoes. During the succeeding activity, learners created a rhythm chant about a manifesto, incorporating key vocabulary and concepts from the lesson. The activity allowed learners to repeat, pronounce, and apply target words in a rhythmic and memorable format.

Week 2. Defending a Stand with Reasonable Arguments and Factual Evidence. The lesson incorporated "Paraiso" by Smokey Mountain, a content-based song that presents a message concerning environmental protection. The song was used during the Activity phase to give learners a concrete, meaningful context for examining a position or stand. Learners listened to selected portions of the song, identified its central message, and discussed the position expressed by the songwriter. They then examined how ideas presented in the song could be supported by reasons and factual evidence. Students identified and interpreted selected vocabulary from the song and lesson in context, allowing the musical material to reinforce both vocabulary development and the target competency of defending a stand.

Week 3. Determining the Objectives and Structures of Various Kinds of Reports. A Musical Hook – "What's the Song's Purpose?" was used during the introductory portion of the lesson. The teacher played a 6-minute song with a clearly identifiable communicative purpose. "Heal the World" by Michael Jackson was selected as an example because its message advocates positive change and encourages listeners to take action. Learners identified the song's apparent purpose and discussed the language and ideas used to communicate it. This activity served as a bridge to identifying the objectives and purposes of different types of reports. During the Application phase, learners participated in a "Report Jingle Pitch!" activity. Each group acted as a marketing team for its report and created a short, catchy jingle or song concept summarizing the report's key objective and findings. The activity required learners to select appropriate vocabulary, condense information, and communicate the report's central purpose in a memorable form. This gave learners an opportunity to apply

report-related concepts and target vocabulary through creative musical expression.

Week 4. Designing, Testing, and Revising a Survey Questionnaire. The lesson incorporated music mnemonics during the Analysis phase. Familiar tunes such as “Row, Row, Row Your Boat” and “Mary Had a Little Lamb” were used with modified lyrics containing selected vocabulary and concepts related to survey-questionnaire design. The familiar melodic patterns reduced the cognitive demands associated with learning the tune and allowed learners to focus on recalling the newly introduced terms. Learners listened to and repeated the modified lyrics, identified the target vocabulary, and connected the words with the principles involved in designing, testing, and revising survey questions. The activity provided repeated exposure to the target terms through rhythm, melody, and verbal repetition.

Week 5. Designing, Conducting, and Gathering Information from Surveys. A content-based song entitled “Survey Says” was incorporated as an original classroom song/jingle developed specifically for the lesson. The song emphasized the sequence of designing questions, selecting respondents, conducting a survey, collecting responses, and organizing information. It served as a musical review and transition activity before learners moved on to the survey-related tasks. Learners identified key vocabulary from the song, arranged the concepts in the presented sequence, and used the target terms to construct sample survey questions and discuss appropriate procedures for gathering information. The musical activity reinforced procedural vocabulary through repetition and sequencing while staying directly aligned with the survey competency.

Week 6. Disseminating Written Forms of Information from Surveys, Experiments, or Observations. The lesson began with a musical hook: “The Clarity Overture.” The teacher played a 60–90-second instrumental excerpt characterized by an organized structure, clear patterns, and a sense of precision. A suitable excerpt from a Bach fugue, a minimalist composition with recurring patterns, or an instrumental passage from a scientific documentary soundtrack was selected. Learners were asked to describe the organization and patterns they perceived in the music and relate these characteristics to the importance of clarity, organization, and logical presentation of information. The musical experience was then connected to the dissemination of written information from surveys, experiments, and observations. Target vocabulary was then introduced, reviewed, and applied as learners worked with written information.

Measures were also taken to minimize contamination between the experimental and control conditions. The two groups were taught separately according to their respective DLLs, and the music-based instructional materials were used only during the experimental group's scheduled sessions. Learners were instructed not to share or reproduce the intervention activities and materials during the study period. Meanwhile, the teacher-researcher maintained separate instructional materials and lesson procedures for the control group. The control group was taught using traditional instruction while receiving the same general EAPP content and target vocabulary. Instruction included teacher explanation, classroom discussion, reading activities, questioning, written exercises, vocabulary activities, and other standard approaches appropriate to the lesson objectives. The control group's lessons did not intentionally incorporate music-based instructional activities. The control condition was maintained to provide a basis for comparing learner performance under the music-based instruction with performance under the regular instructional approach.

Finally, an implementation checklist monitored the consistent delivery of the essential components of the music-based lessons. The checklist covered the presentation of the selected songs or lyrics, introduction and discussion of target vocabulary, completion of the prescribed music-based activities, learner participation, vocabulary application, and completion of the intended lesson tasks. However, several challenges were encountered during the intervention. Time constraints affected the implementation, with the Week 2 lesson extending beyond the planned schedule due to unforeseen school-related circumstances. Although most of the selected songs were appropriate, some learners struggled to relate to unfamiliar songs. In Week 6, the prescribed music-based activity required three meetings to complete, exceeding the initially planned duration. Additionally, some learners were hesitant to participate actively in the music-based activities. Despite these challenges, the intervention was implemented using the prepared lesson guides and monitored through the implementation checklist.

Post-test. After the completion of the six-session intervention, on October 12, 2025, a post-test was administered

to both the experimental and the control groups to measure any changes in vocabulary skills as a result of the pedagogical methods used. The questions were the same as in the pre-test but differed only in their order. This post-test measured the effect of the music-based lesson on teaching English vocabulary.

Data Analysis

The collected scores were analyzed statistically using SPSS version 31. Before conducting the independent *t*-test, prerequisite analysis was carried out using the Shapiro-Wilk test to determine whether the data were normally distributed. In this study, independent-samples *t*-tests and paired-samples *t*-tests were applied to determine significant differences between pre-test and post-test mean scores of the experimental and control groups. To test the hypothesis, a significance level of $p < 0.005$ was established. The practical significance of any observed differences between the groups was assessed by calculating the effect size using Cohen's *d*.

Ethical Considerations

Ethical procedures were observed throughout the study. Before data collection, permission was obtained from the Schools Division Superintendent, school head, and concerned classroom advisers. All participants were Grade 12 students aged 18 years or older. Hence, they provided their own informed consent. Participation was voluntary, and participants could decline or withdraw without academic penalty. As the researcher also served as the teacher, participants were assured that their participation and research results would not affect their grades, classroom standing, or access to instruction. No formal ethics review or ethics committee approval was obtained. However, confidentiality was maintained through participant codes and aggregate reporting. We password-protected research data, used them solely for research purposes, retained them for one year, and securely deleted or destroyed them thereafter.

Results and Discussion

Vocabulary Skills of Control Group Students Before Traditional Teaching

Table 1. *Vocabulary Skills of Control Group Students Before Traditional Teaching*

Mastery Level	<i>f</i>	%
Moving Towards Mastery	2	6.90
Average Mastery	14	48.2
Low	11	37.9
Very Low	2	6.90

Table 1 shows that most students (14 or 48.28%) were at the Average Mastery level, indicating moderate vocabulary knowledge. A significant number (11 or 37.93%) were at the Low Mastery level, while 2 students (6.90%) were at the Very Low Mastery level, showing limited vocabulary skills. Only 2 students (6.90%) were at the Moving Towards Mastery level, indicating that very few were moving towards mastery before the intervention. Therefore, the results show that most students in the control group demonstrated a low-to-average mastery level of vocabulary skills during the pre-test, meaning their vocabulary skills were generally moderate but still required improvement. The result is consistent with Perez and Perez's (2024) study, which reported that many senior high school students failed to meet expected levels of vocabulary proficiency.

Vocabulary Skills of the Experimental Group Before Music-Based Instructions

Table 2 presents the experimental group's vocabulary skills before implementing music-based instructions. The results show that most, 19 students, or 54.28%, were classified at the Average Mastery level, indicating that they possessed basic vocabulary knowledge but still required further development. Meanwhile, 11 students, or 31.42%, were at the Low Mastery level, while 1 student, or 2.85%, was at the Very Low Mastery level. Only 4 students, or 11.42%, reached the Moving Towards Mastery level. The findings indicate that most students entered the intervention with average-to-low vocabulary mastery, suggesting a need for more focused and engaging vocabulary instruction. This finding is consistent with previous research showing that senior high school learners may have limited vocabulary knowledge. Santillan and Daenos (2020), in a study of Grade 12 students in the Philippines, examined students' actual vocabulary knowledge and highlighted the need to address vocabulary gaps through appropriate vocabulary-learning strategies. Similarly, Year (2022) found that although Korean high school students had varying levels of vocabulary size, many still struggled with frequently used English words. These findings suggest that vocabulary limitations may persist even among secondary learners who have received English instruction for several years.

Table 2. *Vocabulary Skills of the Experimental Group Before Music-Based Instructions*

Mastery Level	<i>f</i>	%
Moving Towards Mastery	4	11.4
Average Mastery	19	54.3
Low	11	31.4
Very Low	1	2.85

The present finding is also comparable with the results of Mejorada and Sapong (2025), who reported that senior high school students in the Philippines generally demonstrated a moderate level of vocabulary knowledge. This closely corresponds to the present finding in which more than half of the experimental group were classified at the Average Mastery level. Likewise, studies involving Filipino senior high school learners have emphasized the continuing importance of vocabulary-learning strategies and vocabulary development in strengthening English language competence (Agtarap et al., 2023; Royeras & Sumayo, 2024). The observed average-to-low vocabulary skills provide a reasonable basis for introducing an engaging instructional approach such as music-based instruction. Research indicates that songs may provide meaningful, repeated exposure to vocabulary. Mannarelli and Serrano (2022), for instance, found vocabulary improvement under different song-based instructional conditions but reported greater durability when songs were accompanied by explicit vocabulary instruction. Furthermore, a systematic review by Legg et al. (2024) cautioned that methodological limitations in many intervention studies make it difficult to draw strong causal conclusions about the linguistic effects of songs.

Thus, the pre-test results establish that the experimental group had considerable room for vocabulary development before the intervention. Rather than indicating a lack of vocabulary knowledge altogether, the results suggest that many students possessed foundational vocabulary that had not yet developed to higher levels of mastery. This baseline condition supports the need to examine whether music-based instruction, when purposefully integrated with vocabulary instruction, can improve vocabulary skills.

Vocabulary Skills of Control Group Students After Traditional Teaching

Table 3. *Vocabulary Skills of Control Group Students After Traditional Teaching*

Mastery Level	<i>f</i>	%
Closely Approximating Mastery	1	3.45
Moving Towards Mastery	2	6.90
Average Mastery	20	68.9
Low	6	20.7

Table 3 presents the vocabulary skills of the control group students after traditional teaching. The results show that 20 out of 29 students (68.97%) attained the Average Mastery level, making it the most prevalent category. Meanwhile, 6 students (20.69%) remained at the Low level, 2 students (6.90%) reached the Moving Towards Mastery level, and only 1 student (3.45%) attained the Closely Approximating Mastery level. No student reached the Mastered category. These findings indicate that traditional teaching was associated with improvement in most students' vocabulary skills, as more than two-thirds of the group attained Average Mastery. However, the persistence of students at the Low level suggests the instructional approach did not produce the same level of vocabulary development for all learners. The finding is consistent with studies emphasizing the continuing importance of vocabulary development among senior high school learners. The results support literature emphasizing the value of contextualized, repeated, and purposeful vocabulary practice. Jonathans et al. (2021) emphasized the importance of exposure, repetition, meaningful tasks, media, and intentional vocabulary learning. Likewise, Binhomran and Altalhab (2023) found that contextualized learning and repetition can contribute to vocabulary retention. More recently, Zeng et al. (2025) emphasized the importance of adapting vocabulary instruction to learners' developmental needs and identified interactive and contextualized practices as important components of vocabulary instruction. These findings suggest that conventional instruction may be strengthened by giving learners more opportunities to encounter, practice, apply, and reuse target vocabulary in meaningful contexts. However, the present findings should not be

interpreted as evidence that traditional teaching is ineffective. The fact that 68.97% of the control group reached Average Mastery indicates that traditional instruction was associated with measurable vocabulary development among most students. At the same time, students at the Low, Moving Towards Mastery, and Closely Approximating Mastery levels indicate variation in learning outcomes. This interpretation aligns with Cervetti et al. (2023), whose meta-analysis showed that vocabulary instruction does not necessarily produce broad vocabulary gains across all learners and that its effectiveness may depend on the instructional approach and the specific vocabulary outcome assessed. The findings suggest that traditional teaching can support basic vocabulary development, but additional instructional practices may benefit learners who continue to demonstrate vocabulary difficulties. The results therefore provide a rationale for exploring more interactive, contextualized, and multimodal approaches, including music-based instruction, as complementary strategies for providing repeated exposure, meaningful practice, and greater learner engagement in vocabulary learning.

Vocabulary Skills of Experimental Group Students After Music-Based Lessons

Table 4. *Vocabulary Skills of Experimental Group Students After Music-Based Lessons*

Mastery Level	<i>f</i>	%
Mastered	4	11.42
Closely Approximating Mastery	4	11.42
Moving Towards Mastery	12	34.28
Average Mastery	14	40.00
Low	1	2.85

Table 4 presents the vocabulary skills of the experimental group after implementing music-based instruction. The results show that 14 students, or 40.00%, attained the Average Mastery level, while 12 students, or 34.28%, reached the Moving Towards Mastery level. Furthermore, 8 students, or 22.84%, attained higher mastery levels, specifically Mastered and Closely Approximating Mastery, while only 1 student, or 2.85%, remained at the Low Mastery level. Overall, the distribution indicates improved vocabulary skills after implementing music-based instruction, with a substantial proportion of students progressing beyond the Average Mastery level.

The finding is consistent with recent empirical studies demonstrating the potential of songs and music-based activities to support vocabulary learning. Zamin et al. (2020), using a pre-test and post-test design, found that exposure to English songs contributed to increased vocabulary acquisition among English language learners. Similarly, Tilwani et al. (2022) reported that songs supported several dimensions of implicit vocabulary learning, including spoken-form recognition, form-meaning connections, and collocation recognition. These findings suggest that songs may give learners repeated, meaningful exposure to vocabulary, which may facilitate recognition and retention of new words. More directly, Zhang et al. (2023) investigated the effects of singing familiar English songs among 95 adolescent ESL learners. After a three-session intervention, both the singing and speech groups demonstrated vocabulary gains, but the singing group achieved significantly greater improvements in vocabulary performance. This finding closely corresponds with the present results, in which a considerable proportion of students in the experimental group progressed to higher vocabulary mastery levels following music-based instruction. The similarity is particularly relevant because Zhang et al. also involved adolescent learners and used classroom-based singing activities rather than merely measuring students' attitudes toward music.

The present finding is also supported by Odo (2022), whose quantitative meta-analysis reported an overall positive effect of English songs on L2 lexical learning. Songs may provide repeated exposure to target vocabulary while presenting words through rhythm, melody, and meaningful linguistic contexts. Such features may make vocabulary learning more memorable and engaging and may provide additional opportunities for learners to encounter and practice target words. The improvement observed in the present study may also be related to the engaging nature of music-based activities. Zamin et al. (2020) reported that songs provided an enjoyable way of learning new vocabulary, while Lijiao and Amirdabbaghian (2024) found that most ESL students in their study perceived English songs as helpful for language learning. These findings suggest that positive learner perceptions and an enjoyable learning environment may complement vocabulary-focused instruction by encouraging attention and participation. However, engagement should be regarded as a possible contributing factor rather than a direct explanation for the vocabulary gains observed in the present study.

Nevertheless, the findings should be interpreted with caution. Not all research has shown that songs consistently improve vocabulary outcomes. Baills et al. (2021), for example, found benefits of song-based training for some aspects of second-language learning but did not find corresponding advantages for all measures of word-meaning recall. In addition, Legg et al. (2024), in a systematic review of 60 intervention studies, found that many studies reported positive linguistic outcomes from songs but concluded that methodological weaknesses in much of the existing literature prevented firm causal conclusions regarding the effects of songs on language learning. Therefore, the improvement observed in Table 4 provides supportive evidence that music-based lessons may contribute to vocabulary development, particularly when songs are purposefully integrated with vocabulary instruction and opportunities for repetition, contextualization, and application. The findings do not establish that music alone caused the improvement, but they suggest that music-based activities can serve as a useful and engaging complement to regular English instruction.

Comparison of Vocabulary Skills Between Control Group and Experimental Group *Pre-test Result*

Table 5. *Independent-Samples t Test of Pretest Vocabulary Scores Between the Control and Experimental Groups*

Measure	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>	SE of Cohen's <i>d</i>
Pretest score	1.12	58.41	.265	0.28	0.25

An independent-samples *t*-test was conducted to determine whether a significant difference existed between the pretest vocabulary scores of the experimental and control groups. The analysis yielded $t(58.41) = 1.12, p = .265$. Since the *p*-value was greater than the 0.05 level of significance, the result indicates that there was no statistically significant difference between the pretest vocabulary scores of the two groups. The result provides evidence that the groups were comparable on the vocabulary measure used in the study and, therefore, provides a reasonable baseline for evaluating changes following the music-based and traditional instruction.

This finding is consistent with Ayana et al. (2024), who investigated vocabulary learning strategies among Grade 11 students and reported no statistically significant difference in vocabulary knowledge achievement between the experimental and control groups on the pretest, strengthening the relevance of their findings to the present study. The present result is also consistent with Dizon (2025), who examined the integration of multiple mobile-assisted language learning applications. It reported no significant difference between the experimental and control groups in academic vocabulary pretest skills. The researchers used the pretest to establish whether the groups had comparable vocabulary levels before the intervention, which was similar to what was used in the present study. The absence of a significant pretest difference matters because it indicates that the subsequent differences in posttest vocabulary skills were not preceded by a statistically detectable initial difference in vocabulary scores. However, this result should not be interpreted as demonstrating that the two groups were completely equivalent in all characteristics. Because the present study used intact groups rather than random assignment, other unmeasured differences between the classes may still have existed, which could inform future studies.

Post-Test Result

Table 6. *Independent-Samples t Test of Post-test Vocabulary Scores Between the Control and Experimental Groups*

Measure	<i>t</i>	<i>df</i>	<i>p</i>	Cohen's <i>d</i>	SE of Cohen's <i>d</i>
Pretest score	4.32	61.89	<.001	1.07	.28

Table 6 presents the test of differences in the vocabulary skills of the control and experimental groups based on their post-test results. An independent-samples *t*-test revealed a statistically significant difference between the two groups, $t(61.89) = 4.32, p < .001$. The experimental group obtained a higher mean score ($M = 34.74, SD = 9.71$) than the control group. The effect size was large (Cohen's $d = 1.07$), indicating that the observed difference was not only statistically significant but also substantial in magnitude. These results suggest that students who received music-based instruction demonstrated higher post-test vocabulary skills than those who received traditional instruction. The finding is consistent with Odo (2022), which concluded that English songs can serve as a complementary instructional strategy for vocabulary development. This finding supports the present result, in which the group exposed to music-based instruction achieved substantially higher vocabulary skills than the control group. This is relevant to the present study because music-based activities may have provided repeated

exposure to vocabulary in meaningful linguistic context; it allowed students to encounter and apply target words through rhythm, melody, repetition, and contextualized language activities.

Further support comes from Zhang et al. (2023), which revealed that both groups improved in vocabulary learning, but the group that learned through singing demonstrated significantly greater vocabulary gains than the group that learned through reciting the lyrics. The similarity between their participants and the present Grade 12 learners strengthens the relevance of the finding, particularly because both studies examined music or singing as an instructional component within language learning rather than merely investigating students' attitudes toward music. The present finding may also be explained by the repeated and contextualized exposure provided by music-based activities. Nie et al. (2022) found that listening to English songs improved several aspects of incidental vocabulary knowledge, particularly word recognition, and that some of these gains were retained four weeks later. The study also indicated that repeated exposure to songs influenced vocabulary learning outcomes. In the present study, music was not used merely as entertainment but decisively integrated with vocabulary presentation, practice, and application, which may have contributed to the higher vocabulary skills of the learners in the experimental group.

Nevertheless, the findings should be interpreted with caution. Hamilton et al. (2024), reported that although most studies showed positive linguistic outcomes associated with songs, methodological limitations in many of the studies prevented firm causal conclusions regarding the effects of songs on language learning. This consideration is particularly relevant to the present study because the participants were assigned through intact classes rather than random assignment. Therefore, the significant post-test difference should be interpreted as evidence of an association between the music-based instructional intervention and higher vocabulary skill rather than definitive proof that music alone caused the observed difference.

In general, the results provide preliminary evidence that music-based instruction may be an effective and engaging complementary approach to vocabulary skills development. The large effect size ($d = 1.07$) indicates that the difference between the groups was educationally substantial within the context of the participants included in the study. The findings, together with recent empirical and review evidence, suggest that purposefully integrated music-based activities can provide meaningful opportunities for repeated exposure, contextualization, practice, and application of vocabulary. However, further research using larger samples, multiple classes and schools, and stronger randomization or experimental controls is needed to establish the extent to which music-based instruction contributes to vocabulary development.

Conclusion

Based on the findings, both groups demonstrated improvement in vocabulary skills after instruction, with the experimental group showing higher post-test performance than the control group. For the Grade 12 GAS students in the study, the findings provide preliminary evidence that music-based instruction may be a useful and engaging complement to regular English instruction, particularly by providing opportunities for repeated exposure, contextualized practice, and vocabulary application. Traditional teaching strategies also support vocabulary development and therefore remain relevant, but they may be strengthened through interactive and innovative approaches, such as the purposeful integration of music.

Teachers may consider incorporating carefully selected songs, musical activities, and rhythm-based techniques into vocabulary lessons when these are aligned with the learning objectives and learners' needs. Such activities may provide additional opportunities for meaningful vocabulary practice while increasing learner engagement. However, interpret the findings within the study's limitations. Using nonrandom intact groups, with only one class assigned to each condition, limits the ability to separate the intervention's effects from possible class, schedule, or contextual differences. Using the same vocabulary test for the pre-test and post-test may also have introduced practice or familiarity effects. Moreover, the study was conducted in only one school with a limited sample, restricting the generalizability of the findings to other learners and educational settings.

Future studies may address these limitations by involving larger samples, multiple classes and schools, randomized or stronger experimental designs, and alternative or parallel forms of vocabulary assessments. Further research may also examine the effects of music-based instruction across different learner groups,

vocabulary dimensions, and longer intervention periods to determine its potential contribution to vocabulary development.

Contributions of Authors

The researcher declares that he actively participated in all phases of the study, made substantial contributions to its completion, and carefully reviewed and approved the final version of the manuscript.

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Conflict of Interests

The author affirms that no competing interests or potential conflicts of interest exist in relation to the preparation, conduct, and publication of this research paper.

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