



Scrabble-Based Classroom Intervention to Enhance Vocabulary and Spelling Mastery among Grade IV Pupils

Verly B. Jaug

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: verly.jaug@sccpag.edu.ph, ORCID ID: <https://orcid.org/0009-0002-6310-8036>

Hidaya Tataan

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: hidaya.tataan@sccpag.edu.ph, ORCID ID: <https://orcid.org/0009-0003-1221-1489>

Lita B. Maghanoy

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: lita.maghanoy@sccpag.edu.ph, ORCID ID: <https://orcid.org/0009-0000-6941-3012>

Juhani M. Dimalna

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: juhani.dimalna@sccpag.edu.ph, ORCID ID: <https://orcid.org/009-0001-3594-6512>

Ma Janice R. Gorrero

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: ma.janice.gorrero@sccpag.edu.ph, ORCID ID: <https://orcid.org/0009-0008-7851-7698>

Jessielou O. Lumactod

Saint Columban College, Pagadian City, Zamboanga del Sur, Philippines

E-mail: jessielou.lumactod@sccpag.edu.ph, ORCID ID: <https://orcid.org/0009-0005-1572-8314>

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Abstract

Background and Aim: Mastery of vocabulary and spelling is crucial for language competency, as it affects students' reading comprehension, writing capabilities, and general communication abilities. Nevertheless, numerous elementary students encounter difficulties in retaining and accurately employing new vocabulary due to insufficient practice and the persistent reliance on conventional teacher-centered methodologies. Game-based learning is acknowledged as an excellent approach for enhancing motivation, interaction, and active engagement. This study sought to assess the efficacy of a Scrabble-based classroom intervention in improving vocabulary and spelling proficiency among Grade IV students.

Materials and Methods: This research utilized a one-group pretest–posttest quasi-experimental design with twenty (20) Grade IV students from a private elementary institution in Northern Mindanao during the 2018–2019 academic year. The participants were chosen using complete enumeration. Data were collected via a validated vocabulary assessment encompassing synonyms, antonyms, and homonyms, accompanied by a standardized rubric for evaluating spelling proficiency. Pretest and pre-performance evaluations were undertaken before the intervention, whilst posttest and post-performance evaluations were executed following the organized Scrabble sessions. Descriptive statistics and paired-sample t-tests were employed to examine the data and ascertain whether significant differences existed between the students' scores prior to and following the intervention at the 0.05 level of significance.

Results: The results indicated a notable enhancement in the students' vocabulary and spelling abilities following the intervention. The average vocabulary score rose from 23.30 (SD = 5.29) in the pretest to 28.40 (SD = 6.44) in the posttest. The average spelling score rose from 9.20 (SD = 2.78) before the intervention to 13.60 (SD = 2.93) after the intervention. The paired-sample t-test indicated that the differences between the pretest and posttest scores were statistically significant ($p < 0.001$).

Conclusion: The results indicate that Scrabble is an effective classroom intervention for improving vocabulary and spelling skills among Grade IV pupils. The use of structured game-based learning activities in English instruction may enhance student engagement and foster language competency in elementary schools.

Keywords: Scrabble-based intervention; Vocabulary acquisition; Spelling mastery; Game-based learning; Grade IV pupils; Elementary education





Introduction

Vocabulary and spelling mastery are essential components of language learning because they support reading comprehension, written expression, and effective communication. In the elementary grades, pupils are expected to acquire new words, understand their meanings and relationships, and spell them correctly in oral and written tasks. However, many learners have trouble retaining unfamiliar words, identifying synonyms, antonyms, and homonyms, and producing correct spellings. These difficulties may affect their classroom participation and overall English achievement (Nation, 2022).

The need to address these difficulties is supported by literacy and assessment data. The Philippine Informal Reading Inventory (Phil-IRI) (Philippine Statistics Authority, 2020), which is used to assess learners' reading performance in basic education, highlights the importance of identifying pupils who experience difficulty in reading and related literacy skills at an early stage (Department of Education, Bureau of Learning Delivery, 2018). In addition, the Department of Education (2015) emphasized that classroom assessment should be used not only to measure learning but also to improve instruction and provide appropriate interventions. At the national level, the Philippines' low performance in reading literacy in PISA 2018 further suggests persistent challenges in language learning among Filipino learners (OECD, 2019). These concerns indicate the need for classroom-based interventions that can actively support vocabulary and spelling development in meaningful and engaging ways.

Vocabulary learning requires more than simple exposure to words. It becomes more effective when learners encounter words repeatedly, use them in context, and actively process their meanings (Coady, 1998; Decarrico, 2001; Laufer & Hulstijn, 2001). Similarly, spelling development involves the coordination of alphabetic, orthographic, and morphological knowledge (Bear et al., 2008). Spelling, or encoding, requires learners to retrieve sound-symbol relationships and arrange letters in the correct sequence to form acceptable written words (McKenna & Stahl, 2009). Because of these demands, both vocabulary and spelling instruction should provide repeated practice, active engagement, and immediate feedback.

However, traditional classroom approaches often depend on rote memorization and drill-based activities, which may not sustain pupils' interest or encourage active learning. In contrast, game-based strategies can increase participation, motivation, and retention. Bruner's (1966) constructivist theory explains that learners build knowledge through active discovery and interaction, while Gardner's (1983) theory of multiple intelligences suggests that learners benefit from activities that engage varied abilities. These theories support the use of interactive classroom activities that make language learning more meaningful.

One such activity is Scrabble. Scrabble requires learners to manipulate letter tiles, form words from available letters, recognize spelling patterns, and verify whether their words are correct. These mechanics directly support encoding because learners must retrieve letter-sound relationships, arrange letters accurately, and apply spelling knowledge during play. In addition, the game encourages vocabulary recall and word recognition as pupils search for possible words and connect them with prior knowledge. Because it is interactive and collaborative, Scrabble may provide a more engaging environment for developing vocabulary and spelling skills.

Previous studies have shown that game-based learning can improve learners' motivation, engagement, and language performance (Azriel et al., 2005). Some studies also suggest that games can support spelling development. For example, Mark et al. (2025) found that a gaming approach helped improve spelling proficiency among junior high school students. However, this and similar studies focus on older learners and different game formats, such as online gaming, rather than classroom-based Scrabble activities for elementary pupils. Other studies on Scrabble have often focused only on vocabulary outcomes or used non-experimental methods. Thus, there remains limited evidence on the effectiveness of a structured Scrabble-based intervention in improving both vocabulary and spelling among elementary learners, particularly in local classroom settings.

This gap in the literature provided the justification for the present study. Given the continuing literacy challenges among elementary pupils and the limited local evidence on game-based interventions for both vocabulary and spelling, it is important to examine instructional strategies that are interactive, practical, and developmentally appropriate. Therefore, this study was conducted to





determine the effectiveness of a Scrabble-based classroom intervention in enhancing the vocabulary and spelling mastery of Grade IV pupils in a private elementary school in Lanao del Norte. Specifically, it sought to compare the pupils' performance before and after the intervention. The findings of the study may help teachers design more engaging English lessons and contribute to the growing body of research on game-based language instruction in elementary education.

Objectives

This study aimed to determine the effectiveness of a Scrabble-based intervention in improving the vocabulary acquisition and spelling mastery of Grade IV pupils. Specifically, it sought to: (1) assess the pupils' pre-intervention vocabulary and spelling performance; (2) determine their post-intervention vocabulary and spelling performance after the Scrabble sessions; (3) examine whether significant differences existed between the pretest and posttest scores in vocabulary and spelling; and (4) develop an instructional enhancement program based on the findings.

Hypotheses

The following null hypotheses were tested at the 0.05 level of significance:

H₀₁: There is no significant difference between the pretest and posttest spelling scores of Grade IV pupils following the Scrabble-based intervention.

H₀₂: There is no significant difference between the pretest and posttest vocabulary scores of Grade IV pupils following the Scrabble-based intervention.

The corresponding alternative hypotheses state that significant differences exist between the pretest and posttest scores in spelling and vocabulary, indicating the effectiveness of the Scrabble-based intervention.

Literature review

This literature review examined scholarship related to the use of Scrabble as a classroom intervention for improving vocabulary and spelling mastery among elementary learners. It is organized into four major areas: vocabulary development, spelling development, game-based learning as an instructional strategy, and Scrabble in language instruction. The theoretical foundations and synthesis of related literature are also presented to establish the basis for the present study.

1. Vocabulary Development

Vocabulary knowledge is a fundamental component of language learning because it supports comprehension, expression, and academic performance. Learners who have limited vocabulary often experience difficulty in understanding texts, communicating ideas, and participating meaningfully in classroom tasks. Foundational scholarship has consistently shown that vocabulary growth depends not only on exposure to words but also on repeated and meaningful interaction with them (Nation, 2022; Zeng et al., 2025). This suggests that vocabulary learning is most effective when instruction moves beyond memorization and provides learners with opportunities to actively process and apply lexical knowledge.

Research further indicates that vocabulary development requires systematic instruction. In second-language contexts, learners must not only recognize a large number of words but also understand their meanings and uses across different situations. Earlier work emphasized the role of contextual exposure and active processing in lexical retention (Coady, 1998; Laufer & Hulstijn, 2001), while more recent reviews confirm that effective vocabulary instruction is strengthened by intentional design, learner engagement, and the use of appropriate strategies (Black & Wright, 2023). These findings highlight that vocabulary growth is closely tied to instructional quality.

Recent studies have also shown that vocabulary instruction benefits from interactive learning tasks. Game-based and learner-centered activities have been found to improve vocabulary performance by encouraging repeated exposure, active participation, and contextualized use of words. Evidence from recent studies suggests that such approaches are especially beneficial for young and beginner-level learners because they make language practice more engaging and less passive





(Malakouti et al., 2024; Remo & Velasco, 2022). In this sense, vocabulary mastery is best developed in learning environments that combine structure, repetition, and meaningful participation.

2. Spelling Development

Spelling is another essential aspect of literacy development and plays a critical role in written communication. Unlike simple word recognition, spelling requires learners to retrieve phoneme-grapheme correspondences, identify orthographic patterns, and arrange letters accurately in sequence. For this reason, spelling is widely regarded as a cognitively demanding process closely linked to encoding. Bear et al. (2008) explained that spelling develops across stages, reflecting learners' growing understanding of alphabetic, pattern, and meaning relationships in words. This developmental view suggests that spelling improvement requires more than rote practice; it requires structured opportunities for learners to think about how words are formed.

Research has consistently supported the value of explicit and systematic spelling instruction. Earlier studies found that structured spelling instruction contributes not only to spelling performance but also to phonological awareness and writing development (Graham & Santangelo, 2014; Wanzek et al., 2006). More recent studies reinforce this view by showing that spelling improves when learners engage in repeated practice, receive immediate feedback, and participate in interactive learning tasks. For instance, educational games have been shown to support spelling development by allowing learners to test word forms and recognize errors in a more engaging environment (Taati Jeliseh & Xodabande, 2025; Lara et al., 2025).

These findings are important for the present study because they suggest that spelling develops best in activities that require active construction of words. If learners are expected to improve spelling, they must be given opportunities to manipulate letters, examine patterns, and verify correctness during the learning process. Such conditions are closely aligned with word-based games like Scrabble, which involve direct engagement with letter arrangement and word formation.

3. Game-Based Learning as an Instructional Strategy

Game-based learning has received growing attention in education because of its potential to make learning more active, engaging, and meaningful. Rather than placing learners in a passive role, games encourage participation, decision-making, interaction, and problem-solving. This shift from teacher-centered instruction to learner-centered participation is one reason why educational games have become increasingly valued in language teaching.

Earlier research suggested that games can improve both learner motivation and academic performance by making instruction more enjoyable without reducing learning outcomes (Azriel et al., 2005). Related work also pointed out that repeated practice through interactive activities helps learners move from conscious knowledge to more automatic language use, a process referred to as proceduralization (Macedonia, 2005). These ideas remain relevant because they explain why games may support retention and transfer of learning.

More recent scholarship has strengthened the case for game-based learning in language education. Xiong et al. (2024), in a review of digital game-based vocabulary learning, found sustained evidence that games promote vocabulary acquisition, learner engagement, and interactive language practice. Similar trends have been reported in studies showing that game-based approaches improve participation and support repeated language exposure in various learning settings (Alfares, 2025; Palandi et al., 2024). Although much of this recent work focuses on digital formats, the literature suggests that the effectiveness of games lies less in the technology itself than in the learning conditions they create. Repetition, immediate feedback, active participation, and collaboration are all features that can also be found in non-digital or board-based games. Therefore, game-based learning remains a promising instructional strategy for vocabulary and spelling development, even in traditional classroom settings.

4. Scrabble in Vocabulary and Spelling Development

Scrabble is a word-formation board game that requires players to create words using letter tiles. As an instructional activity, it is particularly relevant to vocabulary and spelling because it combines lexical retrieval with orthographic decision-making. Learners must recall words, test possible letter combinations, recognize acceptable spelling patterns, and verify whether their





responses are correct. These actions require attention to both meaning and form, suggesting that Scrabble may support vocabulary growth and spelling accuracy at the same time.

Earlier literature has identified Scrabble as a useful language-learning activity because it promotes vocabulary enrichment, strategic thinking, and orthographic awareness during play (Rogers, 2012; Klimova, 2015). In addition, recent studies continue to support the educational value of word-based games. Farich and Wahyuni (2025), for example, concluded that Scrabble-based learning has a positive effect on English vocabulary mastery. Related findings from spelling-focused game research also suggest that interactive word-building tasks can improve spelling performance when learners repeatedly construct and evaluate words in collaborative settings (Taati Jeliseh & Xodabande, 2025).

However, the literature on Scrabble also shows several limitations. Many available studies focus primarily on vocabulary outcomes and pay less attention to spelling as a related but distinct learning target. Other studies involve older learners, such as secondary or tertiary students, rather than elementary pupils whose literacy skills are still developing. In some cases, research on game-based spelling interventions has focused on digital formats rather than board-based classroom activities. For example, Mark et al. (2025) found positive effects of online gaming on spelling proficiency, but the study involved junior high school students and did not examine a classroom-based Scrabble intervention. Moreover, some previous studies have used descriptive or classroom-action designs, which provide useful classroom insights but offer weaker evidence of intervention effects.

Taken together, these limitations indicate that the role of Scrabble in improving both vocabulary and spelling among elementary learners remains insufficiently examined. While the existing literature suggests that Scrabble has educational potential, there is still a need for more focused evidence using a structured design and a younger learner population.

5. Theoretical Foundations

This study is anchored in three theoretical perspectives that help explain the instructional value of Scrabble in language learning.

Constructivist Theory (Bruner, 1966).

Constructivist theory views learning as an active process in which learners build knowledge through interaction, discovery, and experience. This perspective is relevant to Scrabble because the game requires pupils to test possible words, revise choices, and solve problems collaboratively. Rather than receiving language knowledge passively, learners actively construct understanding through gameplay.

Vocabulary Learning Perspective (Coady, 1998).

Coady emphasized that vocabulary acquisition is strengthened when learners engage actively with words and encounter them in meaningful contexts. This perspective supports the use of Scrabble because the game provides repeated exposure to word forms and encourages learners to retrieve and apply vocabulary during play. In this way, lexical learning becomes more active and contextualized.

Multiple Intelligences Theory (Gardner, 1983).

Gardner proposed that learners possess different forms of intelligence that influence how they learn. Scrabble may appeal to a range of these abilities by engaging linguistic intelligence through word formation, logical-mathematical intelligence through scoring and strategy, spatial intelligence through tile placement, and interpersonal intelligence through peer interaction. Although this theory serves as a supporting lens rather than the main explanatory framework, it helps explain why Scrabble may be effective for diverse learners.

Synthesis of Literature

The literature reviewed in this chapter shows that vocabulary and spelling are closely related literacy skills that develop through repeated exposure, active engagement, and meaningful use of words. Studies on vocabulary development emphasize the need for systematic instruction and opportunities for learners to process and apply lexical knowledge. Likewise, research on spelling highlights the importance of explicit practice, pattern recognition, and feedback-supported word production. These findings suggest that both skills require learning environments in which pupils interact actively with language rather than receive it passively.

The literature also indicates that game-based learning can provide these instructional conditions. Across both earlier and recent studies, educational games have been associated with increased





motivation, active participation, repetition, and collaboration. Although much recent scholarship has focused on digital game-based learning, the evidence suggests that the effectiveness of games depends more on the quality of learner engagement and task structure than on the digital format itself. This implies that analog word games such as Scrabble may also serve as effective language-learning tools when they promote active retrieval, immediate feedback, and repeated interaction with words.

However, the review also reveals several gaps in the existing literature. Studies on Scrabble often focus more on vocabulary than spelling, frequently involve learners older than those in elementary school, and commonly rely on descriptive or classroom-action research designs. In addition, there remains limited local evidence on the quasi-experimental use of Scrabble as a classroom intervention for improving both vocabulary and spelling among Grade IV pupils. For this reason, the present study was conducted to determine whether a structured Scrabble-based intervention can significantly enhance vocabulary and spelling mastery among elementary learners in a local classroom context.

Conceptual Framework

This study is grounded in the proposition that a structured Scrabble-based classroom intervention can improve pupils' vocabulary mastery and spelling performance by engaging them in repeated, meaningful, and interactive word-learning experiences. The framework assumes that language development becomes more effective when learners actively construct knowledge, retrieve words from memory, manipulate letter forms, and receive immediate feedback within a collaborative learning environment. In this study, the Scrabble-based classroom intervention serves as the independent variable, while vocabulary mastery and spelling performance serve as the dependent variables.

The framework is primarily informed by Bruner's (1966) Constructivist Theory, which explains learning as an active process of discovery, interaction, and problem-solving. This perspective is relevant because Scrabble requires pupils to explore possible word combinations, test responses, and refine their choices through interaction with peers and with the structure of the game. The study is also supported by the vocabulary learning perspective of Coady (1998), which emphasizes that vocabulary acquisition is strengthened through active engagement, repeated exposure, and meaningful use of words. These principles are reflected in Scrabble, where learners repeatedly retrieve and form words during gameplay. In addition, Gardner's (1983) Theory of Multiple Intelligences serves as a supporting lens by showing how the intervention may engage diverse learner abilities, particularly linguistic, logical-mathematical, spatial, and interpersonal skills. However, the principal explanatory basis of the framework lies in constructivist learning and in the view that vocabulary and spelling develop through active word processing.

Conceptually, the study assumes that the Scrabble-based intervention influences vocabulary and spelling through several key learning mechanisms: repeated exposure to words, active word retrieval, letter manipulation, recognition of spelling patterns, collaborative interaction, and immediate feedback. These processes are expected to strengthen vocabulary mastery by helping pupils recall and understand lexical relationships such as synonyms, antonyms, and homonyms. At the same time, they are expected to improve spelling performance by requiring learners to arrange letters accurately, recognize acceptable orthographic patterns, and produce correct word forms. In this way, the framework presents Scrabble not merely as a motivating activity but as an instructional strategy that directly engages the cognitive processes involved in vocabulary acquisition and spelling development.

The framework also recognizes the role of assessment in establishing the effect of the intervention. Pupils' vocabulary mastery and spelling performance are measured before and after the Scrabble-based activities to determine whether meaningful improvement occurs following the intervention. The comparison of pre-intervention and post-intervention performance provides the empirical basis for evaluating the instructional value of Scrabble in the elementary English classroom.

A further component of the framework is the development of a proposed instructional enhancement program. This element is conceptually linked to the findings of the intervention rather than treated as a separate or independent output. Specifically, the framework assumes that if the



Scrabble-based intervention yields significant improvement in vocabulary and spelling, then the instructional features that contributed to this improvement—such as guided word formation, repeated word exposure, collaborative engagement, and immediate corrective feedback—can be identified as validated components of effective practice. These components may then be translated into a proposed program to support the structured integration of game-based language instruction in elementary English classes.

Overall, the conceptual framework presents a direct and testable relationship between the Scrabble-based classroom intervention and pupils' vocabulary and spelling outcomes. It further explains how the empirical findings of the study may inform the design of an evidence-based instructional enhancement program. Thus, the framework provides both the conceptual logic of the study and the basis for its practical instructional implications.

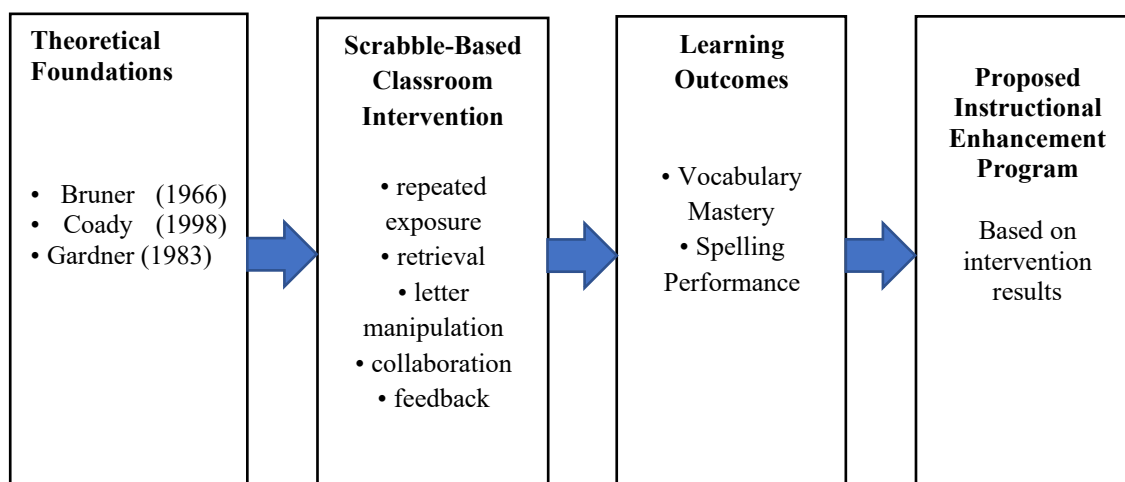


Figure 1. Conceptual Framework of the Study

Figure 1 presents that the Scrabble-based classroom intervention is the independent variable expected to influence pupils' vocabulary mastery and spelling performance. Guided by constructivist learning, vocabulary learning, and multiple intelligences perspectives, the intervention operates through repeated exposure, active retrieval, letter manipulation, collaboration, and immediate feedback. The empirical findings from the pretest and posttest assessments then provide the basis for identifying the most effective instructional elements of the intervention. These validated elements are used in designing the proposed instructional enhancement program for elementary English instruction.

Methodology

Research Design

This study employed a one-group pretest-posttest quasi-experimental research design to determine the effectiveness of Scrabble as a classroom intervention in enhancing vocabulary and spelling mastery among Grade IV pupils. A quasi-experimental design was appropriate because the study involved the implementation of an instructional intervention in an intact classroom setting without random assignment to control and experimental groups.

In this design, pupils' baseline vocabulary mastery and spelling performance were first measured through **pretests**. Following these baseline measurements, structured Scrabble sessions were conducted during regular English instruction. After the completion of the intervention, posttests were administered using the same instruments to determine changes in pupils' language competence.

The comparison of pre-intervention and post-intervention scores allowed the researcher to evaluate whether the Scrabble-based instructional strategy produced statistically significant improvements in vocabulary and spelling performance. Although the study did not include a control



group, efforts were made to minimize threats to internal validity, particularly history and maturation effects, by conducting the intervention within a defined time frame during the second grading period, under consistent classroom conditions, and with the same participants, procedures, teacher, and assessment tools throughout the study. Regular English instruction continued during the intervention period; however, no separate instructional program specifically targeting vocabulary and spelling was implemented concurrently.

Population and Sample

The respondents of the study were Grade IV pupils enrolled during the School Year 2018–2019 in a private elementary school in Lanao del Norte, Northern Mindanao. These pupils were actively engaged in classroom-based English instruction and participated in regular language development activities.

A total of twenty (20) Grade IV pupils from one identified section comprised the sample of the study. A total enumeration sampling technique was employed, wherein all pupils in the section were included as participants. This ensured complete representation of the class and allowed the researcher to examine the impact of the intervention within an intact classroom setting.

Research Instruments

The study utilized a demographic profile form, a frequency-of-play questionnaire, a researcher-developed vocabulary test, and a spelling test scored using a structured rubric to gather the necessary data. These instruments were used to describe the respondents' background characteristics and to measure their vocabulary mastery and spelling performance before and after the Scrabble intervention.

Part I: Demographic Profile

A demographic profile form was used to gather basic information about the respondents, particularly their age and gender.

Part II: Frequency-of-Play Questionnaire

A short questionnaire was administered to determine how frequently the respondents played Scrabble before the intervention. This instrument provided background information regarding pupils' prior familiarity with the game.

Part III: Vocabulary Assessment

Vocabulary mastery was measured using a researcher-developed test consisting of **35 items** distributed across three content areas: 12 items on synonyms, 12 items on antonyms, and 11 items on homonyms. The same test was administered as both a pretest and posttest to determine changes in pupils' vocabulary performance following the Scrabble intervention.

Scores were interpreted using the following mastery level classifications:

- 28–35 = Mastered
- 20–27 = Nearing Mastery
- 10–19 = Least Mastered
- 0–9 = Not Mastered

Part IV: Spelling Performance Rubric

Spelling performance was evaluated using a structured scoring rubric. The rubric assessed accuracy in letter sequencing, word construction, and correct spelling. The same rubric was used in both the spelling pretest and posttest to ensure consistency in scoring.

Scores were interpreted using the following mastery level classifications:

- 15–20 = Mastered
- 10–14 = Nearing Mastery
- 5–9 = Least Mastered
- 0–4 = Not Mastered

The research instruments were reviewed for content validity, clarity, relevance, and appropriateness to the objectives of the study. Revisions were made to improve item wording and ensure suitability for Grade IV pupils.

Pilot Testing and Reliability





A pilot study was conducted to ensure the clarity and consistency of the vocabulary test and spelling rubric. Ambiguous items were revised based on pilot results to enhance precision and comprehensibility.

The reliability of the instruments was examined during pilot testing to determine their internal consistency. The pilot results indicated that the vocabulary test and spelling rubric were acceptable for research use. However, the exact Cronbach's alpha coefficients for each instrument were no longer retrievable from the available records.

Data Collection Procedure

Data were collected during the second grading period of the School Year 2018–2019.

The procedure consisted of three phases:

Pre-Intervention Phase

The respondents were first given a frequency-of-play questionnaire to determine their prior exposure to Scrabble. This was followed by the administration of the vocabulary pretest and spelling pretest to establish baseline levels of pupils' language competence.

Intervention Phase

Structured Scrabble sessions were conducted during regular English classes. The intervention emphasized word formation, vocabulary expansion, collaborative learning, and reinforcement of correct spelling patterns. To minimize potential threats to internal validity, such as history and maturation effects, the intervention was implemented within a short and controlled time frame under consistent classroom conditions. No additional instructional strategies specifically targeting vocabulary and spelling were introduced during the conduct of the study.

Post-Intervention Phase

After completion of the Scrabble sessions, the vocabulary posttest and spelling posttest were administered using the same instruments to measure changes in performance.

Participants were informed of the study's objectives, confidentiality was assured, and voluntary participation was observed. Clear instructions were provided throughout the data collection process to ensure consistency and minimize response errors.

Data Analysis

Descriptive Statistics

Frequency, percentage, mean, and standard deviation were used to summarize pupils' demographic characteristics, vocabulary mastery in terms of synonyms, antonyms, and homonyms, as well as their spelling performance before and after exposure to the Scrabble intervention.

Inferential Statistics

To determine whether statistically significant differences existed between pretest and posttest vocabulary scores and between pretest and posttest spelling scores, the paired-sample t-test was employed at the 0.05 level of significance. The paired-sample t-test was appropriate because the same group of participants was measured before and after the intervention. This statistical procedure allowed the researcher to determine whether the observed changes in scores were statistically significant. In addition, Cohen's d was computed to determine the magnitude of the intervention effect.

Data were encoded and tabulated using Microsoft Excel, while descriptive and inferential statistical analyses were conducted using SPSS.

Results

Demographic Characteristics

The final sample consisted of 20 Grade IV pupils enrolled during the School Year 2018–2019. In terms of gender, 12 pupils (60.0%) were female, and 8 pupils (40.0%) were male. In terms of age, 11 pupils (55.0%) were 10 years old, and 9 pupils (45.0%) were 9 years old. With respect to prior exposure to Scrabble, 9 pupils (45.0%) reported that they rarely played the game, 7 pupils (35.0%) played occasionally, and 4 pupils (20.0%) played frequently.





Table 1. Demographic Characteristics of Respondents (n = 20)

Characteristic	Profile	Frequency	Percentage (%)
Gender	Male	8	40.0
	Female	12	60.0
	Prefer not to say	0	0.0
Age	9 years old	9	45.0
	10 years old	11	55.0
	11 years old	0	0.0
Frequency of Playing Scrabble (Before Intervention)	Rarely	9	45.0
	Occasionally	7	35.0
	Frequently	4	20.0

Table 1 presents that most respondents were female and 10 years old. In terms of prior exposure to Scrabble, the larger proportion of pupils reported that they rarely or occasionally played the game before the intervention.

Table 2: Pretest Scores in Vocabulary

Score Interval	Verbal Interpretation	Frequency	Percentage (%)
28-35	Mastered	5	25.0
20-27	Nearing Mastery	9	45.0
10-19	Least Mastered	6	30.0
0-9	Not Mastered	0	0.0
Total		20	100.0

Note: Mean (SD) = 23.30 (5.29)

Table 2 shows that most respondents were classified under the Nearing Mastery category (45.0%), followed by Least Mastered (30.0%) and Mastered (25.0%). The mean pretest score in vocabulary was 23.30 (SD = 5.29).

Table 3: Pre-Performance Scores in Spelling

Score Interval	Verbal Interpretation	Frequency	Percentage (%)
15-20	Mastered	0	0.0
10-14	Nearing Mastery	9	45.0
5-9	Least Mastered	11	55.0
0-4	Not Mastered	0	0.0
Total		20	100.0

Note: Mean (SD) = 9.20 (2.78)

Table 3 shows that most respondents were classified under the Least Mastered category (55.0%), while the rest were under Nearing Mastery (45.0%). No pupil was classified under the Mastered category. The mean pretest score in spelling was 9.20 (SD = 2.78).

Table 4 Post-Performance Scores in Spelling

Score Interval	Verbal Interpretation	Frequency	Percentage (%)
15-20	Mastered	8	40.0
10-14	Nearing Mastery	11	55.0
5-9	Least Mastered	1	5.0
0-4	Not Mastered	0	0.0
Total		20	100.0

Note: Mean (SD) = 13.60 (2.93)





Table 4 shows that most pupils were classified under the Nearing Mastery category (55.0%) after the intervention, while 40.0% reached the Mastered level. Only one pupil (5.0%) remained in the Least Mastered category. The mean posttest score in spelling was 13.60 ($SD = 2.93$).

Table 5 Posttest Scores in Vocabulary

Score Interval	Verbal Interpretation	Frequency	Percentage (%)
28-35	Mastered	12	60.0
20-27	Nearing Mastery	6	30.0
10-19	Least Mastered	2	10.0
0-9	Not Mastered	0	0.0
Total		20	100.0

Note: Mean (SD) = 28.40 (6.44)

Table 5 shows that after the intervention, most respondents were classified under the Mastered category (60.0%), followed by Nearing Mastery (30.0%) and Least Mastered (10.0%). The mean posttest score in vocabulary was 28.40 ($SD = 6.44$).

Table 6: Difference between the Pre-Performance and Post-Performance Scores in Spelling

Paired Variables	Mean $\pm$ SD	Paired t-value (df)	P-value	Cohen's d	Remark
Pre-performance	9.20 $\pm$ 2.78				
Post-performance	13.60 $\pm$ 2.93	-17.223*** (19)	< .000	3.85	Significant

Note: Analysis was based on a paired-sample t -test.

Table 6 shows a statistically significant difference between the pretest and posttest scores in spelling. The posttest mean ($M = 13.60$, $SD = 2.93$) was higher than the pretest mean ($M = 9.20$, $SD = 2.78$), $t(19) = -17.223$, $p < .001$. The computed effect size was very large ($d = 3.85$).

Table 7: Difference between the Pretest and Posttest Scores in Vocabulary

Paired Variables	Mean $\pm$ SD	Paired t-value (df)	P-value	Cohen's d	Remark
Pretest	23.30 $\pm$ 5.29				
Posttest	28.40 $\pm$ 6.44	-4.636*** (19)	< .001	1.04	Significant

Note: Analysis is based on a paired-sample t -test.

Table 7 shows a statistically significant difference between the pretest and posttest scores in vocabulary. The posttest mean ($M = 28.40$, $SD = 6.44$) was higher than the pretest mean ($M = 23.30$, $SD = 5.29$), $t(19) = -4.636$, $p < .001$. The computed effect size was large ($d = 1.04$).

Discussion

This study's findings demonstrate that the Scrabble-based classroom intervention significantly enhanced vocabulary mastery and spelling ability in Grade IV students. The elevated posttest results relative to pretest scores in both domains indicate that structured word-game activities, when intentionally incorporated into instruction, can function as effective educational instruments rather than solely as leisure activities. This discovery aligns with prior studies indicating that game-based learning improves language results, especially in vocabulary acquisition, spelling, and learner motivation (Qiao et al., 2022; Tsai & Tsai, 2018; Xu et al., 2020).

The rise in average scores from pretest to posttest indicates that students enhanced their comprehension of lexical relationships, including synonyms, antonyms, and homonyms. This enhancement can be attributed to the characteristics of Scrabble, which necessitate that learners actively recall words, identify patterns, and engage with peers during the game. This active involvement facilitates more profound cognitive processing than passive memory. This interpretation is consistent

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with Qiao et al. (2022), who discovered that gamified interventions positively affect cognitive and motivational dimensions of vocabulary acquisition, and with Xu et al. (2020), who determined that digital game-based learning promotes language development when learners engage in meaningful activities.

The results indicated a more significant enhancement in spelling performance, with mean scores rising more noticeably than those for vocabulary. This indicates that the Scrabble intervention exerted a more pronounced direct influence on spelling accuracy. This conclusion is logically substantiated by the game's mechanics, which necessitate that learners correctly arrange letters, assess word formations, and verify spelling accuracy prior to earning points. Repeated exposure to orthographic patterns and fast feedback is recognized to enhance spelling proficiency. Prior research corroborates this assertion, demonstrating that game-based spelling interventions markedly enhance orthographic knowledge and spelling precision in young learners (Elimelech & Aram, 2020; Holz et al., 2023; Witzel et al., 2024).

The more pronounced impact on spelling compared to vocabulary can also be elucidated through task alignment. Spelling is practiced through letter manipulation and word building in Scrabble, whereas vocabulary growth necessitates a deeper semantic comprehension and wider contextual exposure. Elimelech and Aram (2020) established that digital spelling games improve early literacy skills through the incorporation of auditory and visual aids, while Holz et al. (2023) and Witzel et al. (2024) presented experimental evidence indicating that game-based spelling training results in substantial advancements in primary school students. The findings corroborate the current study's conclusion that Scrabble is especially efficient in enhancing spelling abilities.

Not all students attained mastery, notably in vocabulary, despite the generally favorable results. This indicates that the advantages of the intervention were not consistent among all learners. A plausible explanation is that students with inferior baseline language skills necessitated supplementary assistance beyond the game's capabilities. As Scrabble depends on players' pre-existing vocabulary, individuals with restricted lexical resources may have found it more challenging to engage effectively. This result aligns with Xu et al. (2020), who highlighted that the efficacy of game-based learning is contingent upon aspects like learners' prior knowledge, instructional design, and instructor support.

A crucial aspect influencing the efficacy of the intervention is student engagement. Due to the majority of students' minimal prior experience with Scrabble, the exercise probably presented novelty and enhanced motivation. The game's interactive and collaborative characteristics may have fostered engagement and alleviated anxiety related to vocabulary and spelling activities. Prior studies indicate that game-based learning improves motivation, enjoyment, and engagement, hence positively influencing learning outcomes (Qiao et al., 2022; Tsai & Tsai, 2018). The novelty effect may partially account for the observed enhancements, indicating that future research should investigate the longevity of these increases.

Moreover, the collaborative nature of Scrabble may have facilitated learning by encouraging peer engagement, discourse, and prompt feedback. Students are exposed not only to their own lexical production but also to the tactics and terminology employed by others. Research on collaborative game-based learning demonstrates that this contact improves language acquisition by promoting collective problem-solving and communication (Xu et al., 2020; Zheng et al., 2024).

The data indicate that Scrabble serves as an effective classroom intervention for enhancing vocabulary and spelling in elementary students, with a more pronounced immediate effect on spelling. The research endorses the incorporation of structured game-based learning into English education, emphasizing the necessity of instructor scaffolding, especially for students with lower skill levels. This study enhances the existing evidence that classroom games serve as both motivational instruments and effective instructional strategies when aligned with explicit learning objectives (Qiao et al., 2022; Xu et al., 2020; Elimelech & Aram, 2020; Holz et al., 2023; Witzel et al., 2024).



Knowledge Contribution

This study contributes to elementary language education by generating empirical, pedagogical, and contextual knowledge on the use of Scrabble as a classroom intervention. Empirically, the study provides evidence that a structured Scrabble-based intervention can significantly improve both vocabulary mastery and spelling performance among Grade IV pupils. This is an important contribution because previous studies have more often emphasized motivation or vocabulary development alone, while fewer studies have examined the simultaneous effect of Scrabble on both vocabulary and spelling using a quasi-experimental design.

The study also contributes pedagogical knowledge by showing that the instructional value of Scrabble does not lie in gameplay alone, but in the way the activity is structured. The findings suggest that Scrabble becomes more educationally effective when it is guided by clear objectives, repeated exposure to words, active word formation, peer interaction, and post-activity assessment. In this sense, the study moves beyond the general claim that games are motivating and shows more specifically how a board game can function as a language-learning strategy in formal classroom instruction.

In addition, the study contributes contextual knowledge by providing local evidence from an elementary classroom setting in Lanao del Norte. Much of the literature on game-based language learning has focused on older learners, digital platforms, or non-local contexts. The present study demonstrates that an inexpensive and classroom-manageable board game such as Scrabble can also produce measurable learning gains among younger pupils in a local school setting. This makes the findings relevant to teachers who need practical and accessible interventions for English instruction.

The study further contributes a classroom-based intervention model that links assessment, structured gameplay, and instructional planning. This model begins with the identification of pupils' baseline vocabulary and spelling levels, followed by the implementation of guided Scrabble sessions, post-intervention measurement of learning outcomes, and the use of the findings as a basis for an instructional enhancement program. The contribution of this model lies in its practical value: it provides teachers with a replicable way of integrating game-based learning into classroom practice while maintaining alignment with instructional objectives and measurable outcomes.

Overall, the knowledge produced by this study is that Scrabble can function not only as a motivational activity but as an evidence-based instructional tool for improving vocabulary and spelling among elementary learners when implemented in a structured and purposeful manner. By demonstrating this in a local quasi-experimental context, the study adds to the growing body of research on game-based learning and offers a more specific instructional basis for the use of board games in elementary English education.

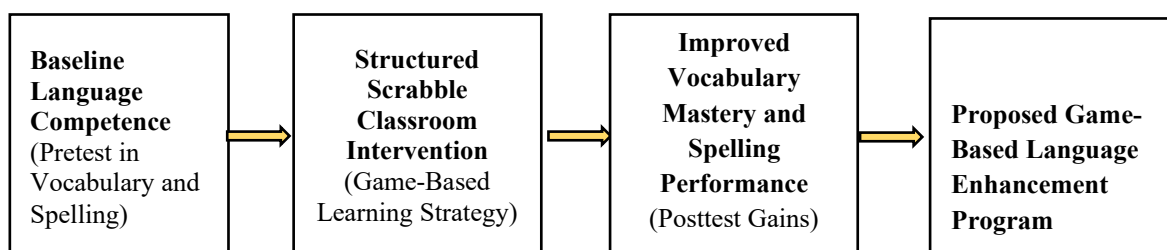


Figure 2: Knowledge Contribution

Figure 2 presents the instructional contribution model derived from the findings of the study. The model begins with baseline language competence, represented by the pupils' pretest scores in vocabulary and spelling. This component establishes the learners' initial level of performance before the intervention and serves as the basis for determining change.

The second component is the structured Scrabble classroom intervention, which served as the main game-based learning strategy of the study. Through guided word formation, repeated exposure to words, collaborative interaction, and spelling-focused practice, the intervention provided the instructional conditions expected to support both vocabulary mastery and spelling performance.



The third component reflects the improved vocabulary mastery and spelling performance shown in the pupils' posttest gains. This stage represents the measured outcomes of the intervention and provides empirical evidence that the Scrabble-based activities contributed to positive changes in language performance.

The final component is the proposed game-based language enhancement program, which was developed from the validated instructional elements observed in the intervention. These elements include repeated word exposure, guided participation, collaborative learning, and immediate feedback. Overall, the figure shows how the intervention findings were translated into an evidence-informed instructional model for elementary English teaching.

Conclusion

This study showed that a structured Scrabble-based classroom intervention helped improve the vocabulary mastery and spelling performance of Grade IV pupils. The findings suggest that Scrabble is more than just an enjoyable classroom game. When used with a clear instructional purpose, it can provide pupils with repeated opportunities to form words, recognize correct spelling patterns, interact with classmates, and actively engage in language learning.

The study also points to a broader implication for elementary English teaching in today's classrooms. In the context of 21st-century literacy, pupils need more than memorization and drill-based activities. They need learning experiences that encourage participation, collaboration, critical thinking, and meaningful use of language. The results of the study show that even a simple and familiar board game like Scrabble can help support these goals when it is used in a structured and guided way.

More importantly, the study highlights that effective literacy instruction does not always require expensive materials or advanced technology. What matters is how learning activities are designed to make pupils active, interested, and thoughtful users of language. In this way, the study affirms that structured game-based learning can be a practical and meaningful approach to strengthening foundational literacy skills among elementary learners.

Recommendation

Based on the findings of the study, the following recommendations are proposed:

Integration in Classroom Instruction.

English teachers may use structured Scrabble activities to help improve pupils' vocabulary and spelling skills. The game may be connected to specific lesson objectives and followed by simple follow-up activities.

Support game-based learning in schools.

Schools may include Scrabble and similar activities in language programs to make English instruction more interactive and engaging for pupils.

Provide practical teacher training.

Teachers may be given training on how to manage game-based activities effectively. This may include giving clear instructions, organizing groups, setting rules and time limits, guiding struggling pupils, encouraging fair participation, and giving immediate feedback without making the activity chaotic.

Provide practical teacher training.

Future researchers may replicate the study using larger samples, longer intervention periods, or control groups to strengthen the evidence on the effectiveness of Scrabble.

Examine long-term retention.

Future studies may include delayed posttests after three or six months to determine whether the gains in vocabulary and spelling are retained over time.

Explore other language skills.

Further research may examine whether Scrabble can also improve other areas such as reading comprehension, writing, and oral language use.





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