



ENHANCING VOCABULARY KNOWLEDGE OF GRADE 11 STUDENTS THROUGH THE WORD WEB WONDERS (WWW) INTERVENTION: AN ACTION RESEARCH

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ABSTRACT

The purpose of this quantitative study utilizing a quasi-experimental one-group pretest-posttest design was to improve the student's vocabulary knowledge on lexical relations among high school students. The study participants were 30 eleventh-grade students from Asuncion National High School. The study introduced an intervention called WWW (Word Web Wonders) Intervention to improve student vocabulary knowledge. The pre-test and post-test results showed a significant difference: the pre-test had a mean score of 15.3 (SD = 3.08), while the post-test showed a mean score of 32.8 (SD = 4.28). The statistical analysis revealed a significant improvement in students' vocabulary knowledge following the intervention, $t(29) = 43.1, p < 0.001$. The result found out that there was a difference between the pre-test and post-test based on its overall mean. Additionally, the effect size, as measured by Cohen's d , was approximately 4.69, indicating an extremely large effect. These findings suggested that the intervention effectively improved students' vocabulary knowledge levels. To provide a comprehensive understanding of the students' insights during and after the intervention, the researchers conducted interviews with selected individuals. From the responses gathered, five themes emerged regarding the insights of students: (1) Increased Vocabulary Retention and Understanding; (2) Increased Awareness of Different Word Relationships; (3) Using One's Newly Acquired Vocabulary in Real Communication; (4) Increased Self-Efficacy and Confidence in Addressing Vocabulary Challenges; and (5) Activation of Prior Knowledge.

KEYWORDS: Word Web Wonders (WWW), vocabulary knowledge, lexical relations, high school students, Philippines

INTRODUCTION

Vocabulary is essential to reading comprehension and overall communication skills such as speaking, reading, writing, and listening. Without enough vocabulary, students struggle to understand texts, express ideas, and follow lessons (Santillan & Daenos, 2020). For second language learners, limited vocabulary hinders communication, even if grammar is correct (Dauletova & Rahimova, 2022). Students lacking vocabulary or strategies to learn new words often face ongoing academic challenges, and vocabulary knowledge is often seen as a measure of one's education level (Ghalebi et al., 2020).

Vocabulary learning challenges are evident across different global contexts. In the UK, learners at the GCSE level reportedly know only 5–10% of the vocabulary needed for proficiency, exposing a gap in the curriculum's approach, which emphasizes a narrow range of frequent words instead of a broader vocabulary base (Milton, 2022). In Bhutan, English vocabulary acquisition is hindered by its foreign status, with students struggling in pronunciation, meaning, recall, and spelling due to limited exposure and practice in daily life (Wangdi, 2022). Similarly, advanced L1 Arabic learners of English face vocabulary limitations linked to their ineffective use of learning strategies, where reliance on methods like dictionary use proved insufficient without prior strategy training (Alahmadi & Foltz, 2020).

Learners in the Philippines faced various difficulties in vocabulary development that affected their communication and academic performance. Many struggled to express thoughts in

English due to limited exposure and practice, especially among indigenous students who lacked confidence in speaking and understanding word meanings, synonyms, and antonyms (Cagas, 2022). In Palawan, vocabulary challenges were worsened by poverty, lack of resources, and the impact of the COVID-19 pandemic, which hindered reading comprehension and critical thinking (Idulog et al., 2023). In Zamboanga del Sur, students had trouble understanding, pronouncing, using, memorizing, and spelling new vocabulary words (Villaganas, 2023).

In the Division of Davao del Norte, particularly in Asuncion National High School, it was observed that Grade 11 students were facing difficulties with vocabulary knowledge, which was affecting their reading comprehension. These students had limited vocabulary, making it challenging for them to fully understand the texts they read, and had trouble expressing their ideas or thoughts in class. As a result, they often felt confused, had difficulty in formulating sentences, and entirely misunderstood the central idea of the material, leading to low scores on exams and quizzes, and eventually low grades. Moreover, misconceptions about unfamiliar words were also evident in the students, which led them to misunderstand what they had been reading. That was why vocabulary development was a crucial skill that students needed to improve in order to better grasp academic content and meet the demands of higher-level studies.

This action research addressed the critical issue of vocabulary development among students, focusing on the challenges they



faced in how they comprehended words. It was both timely and necessary, as it tackled the widespread lack of vocabulary, which impacted students' reading abilities and understanding of lessons. The study was socially relevant as it met the growing need to improve vocabulary knowledge, which was essential because it directly impacted their ability to understand and engage with written and spoken content. A rich vocabulary supported reading comprehension by helping students decode and grasp the meaning of texts, which was essential for academic success across all subjects. By exploring vocabulary knowledge, this research provided valuable insights into how it could be enhanced and whether the proposed intervention was successful. The findings not only deepened the understanding of students' vocabulary levels but also offered solutions to meet their vocabulary needs and improve their overall comprehension skills.

Further, through a thorough search for relevant literature addressing reading comprehension, the researcher found the study of Mauriza and Siregar (2022) entitled "The Analysis of Students' Vocabulary Mastery Who are Using TikTok Application," found that active TikTok users had better vocabulary mastery. The study highlighted that frequent exposure to English on social media aids in improving understanding across reading, listening, writing, and speaking. Similarly, the action research by Permatasari et al. (2025) titled "Enhancing EFL Learners' Vocabulary Mastery through Quizlet: A Classroom Action Research Study" explored the use of digital learning tools to address vocabulary acquisition challenges among EFL learners. Furthermore, the study of Marhamah & Mulyadi (2023) entitled "The Effect of Using Word Wall Picture Media and Linguistic Intelligence to Enhance Learning Outcomes of English Vocabularies" focused on investigating the effect of word wall pictures on fourth-grade elementary students' learning outcomes of English vocabularies.

However, when referring to the scope and locale of this study, the researcher had not come across research using the descriptive quantitative method focusing on a pretest-posttest approach that aimed to enhance vocabulary knowledge through the Word Web Wonders intervention. This indicated that there had not been a study specifically examining the needs of learners in this context, particularly in articulating the vocabulary knowledge of students in synonymy, antonymy, homonymy, hyponymy, homophones, meronymy, metonymy, prototype, polysemy, and collocation using the WWW intervention. Consequently, this established the research gap of the study.

Research Questions

The objective of this research was to determine the effectiveness of the WWW (Word Web Wonders Intervention) on enhancing student vocabulary knowledge.

The research questions/objectives that guided this study were as follows:

1. To determine the level of the vocabulary knowledge among Grade 11 students before the Word Web Wonders (WWW) intervention has been implemented.

2. To determine the level of the vocabulary knowledge among Grade 11 students after the Word Web Wonders (WWW) intervention has been implemented.
3. To determine the significant difference between pre-test and post-test employing the Word Web Wonders (WWW) intervention.
4. What are the insights of students on the impact of the Word Web Wonders (WWW) in enhancing vocabulary learning among Grade 11 students?

Proposed Innovation, Intervention and Strategy

Word Web Wonders (WWW) was developed to support Grade 11 students from Section Amber at Asuncion National High School who struggled with vocabulary acquisition and language use. The intervention utilized word webbing and lexical mapping strategies to promote active, creative, and collaborative vocabulary learning. Implemented over nine weeks during "Catch-Up Fridays," the intervention aimed to improve students' understanding and retention of vocabulary through differentiated, group-based activities.

A pre-test and post-test were administered to measure growth in vocabulary knowledge. Following the intervention, Focus Group Discussions (FGDs) and In-Depth Interviews (IDIs) were conducted to explore student perceptions using the guiding question:

1. What are the insights of students on the impact of the Word Web Wonders (WWW) in enhancing vocabulary learning among Grade 11 students?

WWW (Word Web Wonders Intervention)

The intervention was carried out over 11 weekly sessions, each designed to strengthen vocabulary through structured, engaging tasks. Students worked in varied groups to complete word web activities, apply vocabulary in context, and demonstrate understanding through visual or performance-based outputs.

Each session featured a specific lexical relation and was paired with interactive outputs such as presentations, dialogues, or performances. Outputs were assessed using an analytical rubric measuring accuracy, relevance, creativity, application, and group collaboration. Student-created outputs were also displayed in a "Word of the Day" corner to reinforce vocabulary retention.

Structure of the WWW Sessions

Each weekly session followed this format:

- 15 minutes – Vocabulary-Based Activity
- 25 minutes – Group Sharing/Presentation
- 10–15 minutes – Peer Evaluation and Class Discussion

This format encouraged meaningful vocabulary use, critical thinking, and peer collaboration throughout the intervention. The following were the activities utilized throughout the duration of the intervention:



Week	Activity Title	Lexical Focus	Main Activity
1	Synonym Sprint	Synonyms	Students formed word webs of synonyms under time pressure, used selected words in sentences, and presented outputs to the class.
2	Opposite Allies	Antonyms	Groups paired vocabulary with antonyms, created word webs and short dialogues using both terms, and performed their outputs.
3	Match-Up	Homonyms	Teams illustrated multiple meanings of homonyms in word webs, wrote contextual sentences, and explained meanings to the class.
4	Word Forge Challenge	Homophones	Groups created homophones from jumbled letters, explained meanings, used them in sentences, and reinforced learning through discussion and visuals.
5	Categorization Race	Hyponymy	Teams drew hypernym cards, brainstormed hyponyms, built detailed word webs, and presented the most creative outputs.
6	Quick Whole and Part Puzzle	Meronymy	Students identified parts of whole objects, explained their functions, and shared insights through visual word webs and class presentations.
7	Contextual Webs	Metonymy	Groups created webs showing associative connections of metonymic terms, built contextual sentences, and presented their understanding to the class.
8	Ideal Example Web	Prototype Theory	Teams selected categories, compared prototypical and non-typical examples, and mapped their differences visually with explanations.
9	Collocation Creation	Collocations	Students created collocation word webs based on a base word and acted out scenes to demonstrate practical usage and fluency.
10	Lexical Relations Scavenger Hunt	Mixed Lexical Relations	Teams identified and categorized various lexical relations using word cards, then debated and justified their findings.
11	Lexical Relations Creative Challenge	Mixed Lexical Relations	Students showcased understanding of chosen lexical relations through creative outputs (song, poster, or poem) and presented them for class voting.

Through this intervention, students not only improved their vocabulary knowledge but also developed greater motivation and engagement in language learning. The variety of lexical relations tackled, from synonyms to collocations, helped students strengthen both word understanding and usage. The use of group-based, game-like activities created a collaborative and inclusive learning environment that promoted creativity and deeper word association. Displaying outputs in the “Word of the Day” area reinforced word recall, while weekly differentiated tasks addressed individual learning styles. Overall, the Word Web Wonders (WWW) intervention successfully enhanced vocabulary development, language fluency, and active student participation.

METHODOLOGY

Research Design

This study employed a mixed-methods research design, combining quantitative pre-experimental and qualitative descriptive approaches. Following Thyer (2012), a one-group pretest-posttest design was used to observe the same participants before and after the intervention, allowing the researchers to assess its effectiveness. The strategy, "Word Web Wonders (WWW)," was implemented to enhance vocabulary knowledge and support reading comprehension through concepts such as synonymy, antonymy, homonymy, and others.

Pre- and post-intervention surveys were conducted to collect numerical data, which were analyzed using mean scores.

In addition, qualitative methods were used to gain deeper insights into students' experiences. Interviews were conducted to identify recurring themes, enriching the quantitative findings (Caulfield, 2019). Purposive sampling (Creswell, 2018) was applied to select participants for in-depth interviews (IDI) and focus group discussions (FGD), ensuring that those involved could provide relevant insights into the intervention’s impact on reading comprehension.

Research Respondents

This study was conducted at Asuncion National High School in Purok 12, Poblacion, Asuncion, Davao del Norte, focusing on Grade 11 Amber students (30 in total). Ten participants were purposively selected for in-depth interviews (IDI) and focus group discussions (FGD), consisting of five (5) students for the in-depth interviews and five (5) students for the focus group, to provide qualitative insights on the effectiveness of the Word Web Wonders (WWW) intervention. Participants for the interviews were selected using purposive sampling, a method in which individuals were intentionally chosen based on specific characteristics and insights that aligned the study's



research questions, aims, and objectives (Campbell et al., 2020).

Grade 11 Amber was chosen based on the researchers' observations during Field Study 1 and 2, which revealed the students' limited vocabulary and weak reading comprehension. This was further supported by their low diagnostic test results and feedback from the English subject teacher, who noted the students' frequent struggles in using vocabulary accurately in both oral and written tasks. Only four students made it to the honors list in the first grading period, and many showed difficulty in understanding word meanings, which negatively affected their performance in recitations, quizzes, and writing outputs. These findings underscored the need to improve students' vocabulary skills, justifying the implementation of the intervention.

Research Instruments

The study utilized a researcher-made and modified test questionnaire to evaluate the vocabulary knowledge of Grade 11 students during both the pre-test and post-test phases. The instrument comprised multiple-choice items that targeted ten

key areas of lexical knowledge: synonymy, antonymy, homonymy, hyponymy, homophones, meronymy, metonymy, prototype, polysemy, and collocation. This comprehensive scope ensured that the assessment effectively captured various dimensions of vocabulary learning.

Prior to its administration, the test questionnaire underwent a validation process conducted by a panel of experts. This review ensured that the items were clear, relevant, and aligned with the intended learning outcomes. Based on the feedback provided, necessary revisions were made to enhance the instrument's accuracy, reliability, and alignment with the study's objectives. Once finalized, the validated questionnaire was used to collect data on students' vocabulary proficiency and measure the effectiveness of the "Word Web Wonders (WWW)" intervention.

To facilitate data interpretation, the researchers developed a table summarizing the vocabulary performance levels of Grade 11 students at Asuncion National High School. The following scale was used:

Table 1
Range of Mean Percentage

Range of Mean Percentage	Descriptive Level	Interpretation
90%-100%	Very High	This means that the level of vocabulary knowledge of students is outstanding.
70%-89%	High	This means that the level of vocabulary knowledge of students is very satisfactory.
55%-69%	Average	This means that the level of vocabulary knowledge of students of is satisfactory.
40%-54%	Low	This means that the level of vocabulary knowledge of students is fairly satisfactory.
0%-39%	Very Low	This means that the level of vocabulary knowledge of students did not meet the expectations.

Gathering Procedure

Mathison (1988) highlighted the importance of using reliable data collection methods in research and gathering data from multiple sources. In this study, the researchers used pre- and post-tests to collect data, following a one-group pretest-posttest design to measure participants' reading comprehension levels before and after implementing the Word Web Wonders (WWW) intervention. The researchers coordinated with the program head of the Grade 11 English department to select Section Amber for the intervention. Once identified, the researchers respectfully invited the students to participate, ensuring transparency and honesty. If any student declined, the researchers expressed gratitude for their time and response. To build rapport, the researchers made an effort to personally introduce themselves to the participants.

The data collection process began with a pretest, during which an assessment sheet was administered to evaluate participants' initial vocabulary knowledge levels in English, focusing on vocabulary skills. Following the pretest, the WWW intervention was carried out over twelve (12) weeks, with sessions conducted every Friday. Upon completing the intervention, a post-test was administered to assess changes in the participants' vocabulary knowledge.

Prior to the study, the researchers coordinated with the head of the Grade 11 English department at Asuncion National High School. They also sought permission from the school principal and the class adviser of Section Amber, informing them about the schedule and duration of the intervention. The pretest activity materials were formulated by the researchers, then checked and validated by the Grade 11 English Coordinator to ensure accuracy and appropriateness. During the pretest, students were placed in a quiet room to minimize distractions. After the pretest, the researchers collected and analyzed the responses to calculate the mean scores for each indicator.

The WWW intervention involved activities designed to enhance the vocabulary knowledge of the students, such as word collection, word web creation, and presentation activities. The intervention spanned nine (9) weeks, after which the post-test was conducted using the same test kit as the pretest to assess any improvements in vocabulary knowledge among participants. The data collected were analyzed to determine whether there was an increase or decrease in mean scores before and after the intervention.



Data Analysis

Statistical tools were utilized to evaluate the effectiveness of the intervention on students' vocabulary learning. The mean scores from the pre-test and post-test were computed to describe students' vocabulary knowledge before and after the implementation of the "Word Web Wonders (WWW)" intervention. A paired t-test was applied to determine whether the observed improvement in scores was statistically significant.

Additionally, qualitative insights were gathered through in-depth interviews (IDI) and focus group discussions (FGD) with purposively selected students. The responses were transcribed and analyzed using thematic analysis, as outlined by Braun and Clarke (2013). This approach helped identify recurring themes that reflected the experiences of the students and perspectives on the impact of the intervention, thus offering a more holistic understanding of its effectiveness.

RESULTS AND DISCUSSIONS

This section presented the results, analysis, and interpretation of the findings of the study. The data are presented in both

tabular and textual forms. The chapter presented the data on the level of vocabulary knowledge among students in pre-test; the level of vocabulary knowledge among students in post-test; and significant difference of the pretest and post-test scores of the students.

Research Objective No.1: To determine the level of the vocabulary knowledge among Grade 11 students before the Word Web Wonders (WWW) intervention has been implemented.

To assess the initial vocabulary knowledge of Grade 11 students prior to the implementation of the Word Web Wonders (WWW) intervention, a pre-test was administered focusing on ten lexical indicators: synonymy, antonymy, homonymy, polysemy, hyponymy, meronymy, metonymy, prototype, homophones, and collocations. These indicators were chosen to comprehensively evaluate the understanding of the students to different vocabulary dimensions.

The data presented in Table 2 below showed the average percentage scores of Grade 11 Amber students for each vocabulary indicator before the intervention was applied.

Table 2
Level of Vocabulary Learning Among Grade 11 Students Before the Utilization of Word Web Wonders (WWW) Intervention

Pre-Test		
Score	Frequency	Percentage
10	1	3.30%
11	1	3.30%
12	7	23.30%
13	1	3.30%
14	3	10.00%
15	2	6.70%
16	3	10.00%
17	3	10.00%
18	3	10.00%
19	4	13.30%
20	1	3.30%
21	1	3.30%
Total	30	100%
Mean Percentage		37.35
Description		Very Low
Standard Deviation (SD)		3.08

In the pre-test, the overall mean percentage score was 37.35%, indicating a very low level of vocabulary knowledge among Grade 11 students prior to the implementation of the Word Web Wonders (WWW) intervention. The highest score achieved was 21, while the lowest was 10. The most frequent score was 12, obtained by 7 students (23.30%), suggesting that many students struggled with vocabulary development and likely had limited exposure to academic or contextual word use.

Additionally, the Standard Deviation (SD) is 3.08, indicates that there was a moderate level of variability in students' vocabulary performance. This suggested that although many students had similar levels of vocabulary knowledge, there were still some who performed either better or worse than others. These differences highlighted that student had varied learning needs, and a strategy like the Word Web Wonders (WWW) intervention was important to help improve their vocabulary skills more effectively.



Table 3
Summary on the Level of Vocabulary Learning Among Grade 11 Students Before the Word Web Wonders (WWW) Intervention

Indicator	Pre-Test	Description
Synonyms	43.33%	Low
Antonyms	41.67%	Low
Homonym	37.50%	Very Low
Polysemy	40.83%	Low
Hyponymy	34.17%	Very Low
Meronymy	33.33%	Very Low
Metonymy	37.50%	Very Low
Prototype	40.00%	Low
Homophones	39.17%	Very Low
Collocations	35.83%	Very Low
Total	38.33%	Very Low

The pre-test mean scores for various lexical relation indicators were all categorized as "Very Low," with Synonyms scoring the highest at 43.33%, followed closely by Antonyms at 41.67%, both reflecting a poor understanding of basic vocabulary concepts. Polysemy scored 40.83%, and Prototype had 40.00%, both indicating significant difficulty in understanding multiple meanings and typical examples of concepts. Homophones came in at 39.17%, pointing to challenges with words that sound the same, while Homonym and Metonymy were both at 37.50%, showing students struggled with word associations and meanings. Collocations followed with a score of 35.83%, reflecting weak proficiency in common word combinations. The lowest scores were seen in Hyponymy and Meronymy, with 34.17% and 33.33%, respectively, demonstrating substantial difficulty in recognizing part-whole and category relationships. The overall mean score was 38.33%, underlining the need for targeted vocabulary instruction and interventions to improve students' grasp of lexical relations. These findings stress the critical need for focused vocabulary development to improve students' comprehension of lexical relationships.

Hence, this arising issue is supported by Lachica and Lydio (2023), who emphasized the importance of vocabulary knowledge in language learning, particularly its role in enhancing contextual understanding and promoting language variety. Their study found that deeper lexical knowledge encouraged learners to engage in higher-order thinking, which led to more meaningful and learner-centered language experiences. Students with a broader vocabulary demonstrated increased confidence and fluency in communication, suggesting that vocabulary depth significantly contributed to overall language competence.

Subsequently, in a related study by Hussein (2024) identified several factors contributing to learners' struggles with word usage, including phonological and orthographic similarities,

unrelated word meanings, and limited vocabulary knowledge. These challenges were found to hinder comprehension and effective communication. The study further noted that structured vocabulary instruction and word analysis activities promoted cognitive engagement and real-world application, making learning more relevant and effective.

Furthermore, the result supported by Vardidze (2020), that concluded that instruction emphasizing semantic connections among the different meanings of a word considerably improved learners' retention and comprehension, compared to rote memorization techniques. The study showed that the WWW intervention improved students' grasp of homonymous words by promoting word analysis and higher-order thinking, leading to more meaningful, learner-centered vocabulary development.

Research Objective No.2: To determine the level of the vocabulary knowledge among Grade 11 students after the Word Web Wonders (WWW) intervention has been implemented.

To assess the effectiveness of the Word Web Wonders (WWW) intervention in enhancing students' vocabulary knowledge, a post-test was administered following the intervention period. The post-test measured the same vocabulary indicators as the pre-test to ensure consistency in evaluating students' progress. These indicators included synonymy, antonymy, homonymy, polysemy, hyponymy, meronymy, metonymy, prototype, homophones, and collocations.

The data presented in Table 4 show the average percentage scores of Grade 11 Amber students across these vocabulary areas after the intervention. These results provide insight into the overall improvement in vocabulary acquisition and comprehension following the implementation of the WWW strategy.



Table 4
Level of Vocabulary Learning Among Grade 11 Students After the Utilization of Word Web Wonders (WWW) Intervention

Post-Test		
Score	Frequency	Percentage
26	1	3.30%
27	3	10.00%
28	2	6.70%
29	2	6.70%
30	3	10.00%
31	1	3.30%
32	3	10.00%
33	2	6.70%
34	2	6.70%
35	1	3.30%
36	2	6.70%
37	4	13.30%
39	2	6.70%
40	2	6.70%
Total	30	100%
Mean Percentage		82.08
Description		High
Standard Deviation (SD)		4.28

On the other hand, the post-test scores show a substantial improvement in performance. The lowest score observed was 26, obtained by only 1 student (3.30%), while the highest score was 40, achieved by 2 students (6.70%). The scores were more widely distributed across higher score ranges, with 27, 30, and 32 being the most frequent scores—each obtained by 3 students (10%). This indicates that most students showed notable progress and improved understanding of vocabulary usage after the intervention.

The mean percentage rose significantly to 82.08%, corresponding to a mastery level described as “High.” This marked increase in performance illustrates the effectiveness of the vocabulary-focused intervention in enhancing students’ lexical competence. The improvement likely stems from the engaging strategies and structured review processes that were employed, which helped promote better retention and active usage of vocabulary in context.

Moreover, the standard deviation was 4.28. This result showed that students' scores improved and became more consistent. In other words, most students performed at a similar level, which suggested that the intervention helped reduce gaps in vocabulary knowledge and supported more uniform learning progress among the group.

Thus, the data reveal a significant increase in overall performance, reflecting the effectiveness of the intervention in improving students' mastery of the topic. The upward shift in both score range and frequency at higher scores suggests enhanced learning outcomes. These improvements were attributed to the engaging and interactive nature of the instructional activities, which likely catered to diverse learning preferences and reinforced knowledge retention.

Table 5
Summary on the Level of Vocabulary Knowledge Among Grade 11 Students After the Word Web Wonders (WWW) Intervention

Indicator	Post-Test	Description
Synonyms	75.83%	High
Antonyms	84.17%	High
Homonym	87.50%	High
Polysemy	75.00%	High
Hyponymy	80.00%	High
Meronymy	86.67%	High
Metonymy	75.83%	High
Prototype	91.67%	Very High
Homophones	80.83%	High
Collocations	83.33%	High
Total	82.08%	High



The post-test data revealed generally high performance across various lexical relation indicators under vocabulary knowledge, reflecting the effectiveness of the intervention in enhancing students' vocabulary knowledge. Notably, learners demonstrated "Very High" in Prototype (91.67%), and "High" in Homonymy (87.50%), Meronymy (86.67%), Antonyms (84.17%), and Collocations (83.33%), indicating a strong grasp of nuanced word meanings and associations. High scores were also observed in Hyponymy (80.00%), Homophones (80.83%), Synonyms (75.83%), Polysemy (75.00%), and Metonymy (75.83%), suggesting learners' solid understanding of word relationships in context. The overall mean score of 82.08% places learners in the high proficiency category, signifying substantial vocabulary development.

This improvement from pre-intervention levels indicated that Word Web Wonders was highly effective in enhancing students' vocabulary knowledge across multiple lexical relations. The intervention facilitated deeper semantic understanding by employing visual and semantic mapping techniques, which helped students recognize complex word relationships such as meronymy and prototype. These findings aligned with Alharbi and Alshahrani (2021), who emphasized that semantic mapping helps learners connect vocabulary meaningfully, improving

comprehension and retention by encouraging active cognitive processing instead of rote memorization.

Subsequently, this result was also supported by Kim & Kim (2022), who found that visual strategies like word webs and graphic organizers improve lexical knowledge and reading comprehension, especially for abstract concepts like meronymy and prototypes. Furthermore, these findings aligned with Qu & Rahman (2024), found that both strategies of semantic mapping and rote memorization, like the WWW intervention, have improved the students' retrieval of the target vocabulary words.

Research Objective No.3: To determine the significant difference between pre-test and post-test employing the Word Web Wonders (WWW) intervention.

To address the third research objective, the researchers designed a test questionnaire aligned with the focus of the study. The set of questions aimed to assess students' vocabulary learning, using indicators such as Synonyms, Antonyms, Homonyms, Polysemy, Hyponymy, Meronymy, Metonymy, Prototypes, and Homophones. As presented in Table 6 were the results and interpretations of the data, which show whether there was a significant difference between the pre-test and post-test scores.

Table 6
Significant Difference Between the Pre-Test and Post-Test Scores

Type of Test	N	df	Mean	SD	t-value	P-value	Decision $\alpha = 0.05$
Pre-Test	30	29	15.3	3.08	43.1	< .001	Significant
Post-Test	30		32.8	4.28			

A total of 30 students participated in this study, where their vocabulary knowledge was measured both before and after using the WWW intervention. As presented in Table 6, the t-test for dependent samples was employed to compare the pre-test and post-test scores, $t(29) = 43.1, p < 0.001$. Since the p-value ($p < 0.001$) was found to be less than .001, the conventional significance level of $\alpha = 0.05$, the null hypothesis was rejected. There is no significant difference between the pre-test and post-test scores.

The statistical analysis concluded that there was a significant difference between the pre-test and post-test scores. This significant improvement in scores post-intervention indicated that the WWW intervention enhances the vocabulary knowledge of the students.

In summary, the findings of this study strongly supported the effectiveness of the Word Web Wonders (WWW) intervention in enhancing students' vocabulary knowledge. The results demonstrated that the intervention promoted meaningful and active learning by encouraging students to make connections between ideas and express meanings in their own words. This outcome aligns with Mahmud and Yuliani (2020), who emphasized that structured and explicit vocabulary instruction can significantly improve learners' word understanding. Also, this was supported by the study of Akhtamov (2023), which highlighted the value of innovative, student-centered

approaches in vocabulary teaching to boost language development. Furthermore, the results are consistent with Wright et al. (2020), who pointed out that visual and strategic vocabulary instruction contributes to better word retention and comprehension. Overall, the WWW intervention proved to be a practical and engaging tool that fosters vocabulary growth through interactive and reflective learning.

Research Objective No.4: What are the insights of students on the impact of the Word Web Wonders (WWW) in enhancing vocabulary learning among Grade 11 students?

To answer this research question, in-depth interviews and focus group discussion were conducted with the informants and participants. Probing questions were asked to elicit their concept regarding their observation and experiences with the effectiveness of the Project WWW on enhancing the vocabulary learning of the students. The major themes and sample statements for research question number 4 were presented in Table 7. Participants had their responses to their own experiences. From the answers of the participants, there are five major themes have emerged: (1) Increased Vocabulary Retention and Understanding; (2) Increased Awareness of Different Word Relationships; (3) Using One's Newly Acquired Vocabulary in Real Communication; (4) Increased Self-Efficacy and Confidence in Addressing Vocabulary Challenges; and (5) Activation of Prior Knowledge.



Table 7

Themes and Sample Statements on the Insights of Students on the Impact of the Word Web Wonders (WWW) in Enhancing Vocabulary Learning Among Grade 11 Students

Essential Themes	Supporting Statements
Increased Vocabulary Retention and Understanding	<ul style="list-style-type: none"> “...the visual connections made it easier for me to recall the meanings...” (IDI-01) “...I retain the words longer because of the examples and visual that was given to us...” (IDI-02) “...helped me discover more accurate words to express myself and retain it longer...” (FGD-03)
Increased Awareness of Different Word Relationships	<ul style="list-style-type: none"> “...I can now use words that sound the same but have different meanings correctly...” (IDI-02) “...Now when I see a new word, I think about what kind of word it is, and which ones are related to it...” (IDI-03) “...I noticed that I could understand new words more easily when I know a related word...” (IDI-04) “...after the activities, I can now group them and see how they’re used in different contexts...” (IDI-05) “...I learned that words like “happy” and “joyful” are related but used in different ways...” (FGD-01) “...I used to confuse words that sound alike, but now I understand how they’re used differently...” (FGD-02)
Using One’s Newly Acquired Vocabulary in Real Communication	<ul style="list-style-type: none"> “...My vocabulary became more meaningful and useful in actual communication.” (IDI-01) “...I feel more flexible in expressing my ideas...” (IDI-05) “...this has helped me avoid vague expressions in speaking and writing...” (FGD-04) “...I can think of different ways to express myself instead of repeating the same word. The Word Web activities gave me a wider vocabulary to use, especially in writing. It also helped me become more creative and flexible in communication...” (FGD-05)
Increased Self-Efficacy and Confidence in Addressing Vocabulary Challenges	<ul style="list-style-type: none"> “...I can learn even difficult words. I’m no longer scared to use unfamiliar terms. That made me feel proud and more open to learning...” (IDI-01) “...I’m no longer afraid of new words...” (IDI-03) “...I also became more confident in trying unfamiliar terms...” (IDI-04) “...I feel braver now when encountering unfamiliar terms...” (IDI-05) “...I became more confident when I noticed I could explain my thoughts better...” (FGD-03) “...I can express myself in a more relaxed way without minding the mistakes I have made...” (FGD-04) “...I feel more equipped to handle different writing tasks...” (FGD-05)
Activation of Prior Knowledge	<ul style="list-style-type: none"> “...The activities really supported my learning by connecting new knowledge with what I already knew...” (IDI-04) “...Instead of using the same common words that I already know before, I can now apply better and more suitable ones...” (FGD-01) “...I realized that connecting words visually and using my prior learning helped me remember their meanings more effectively. ...” (FGD-02)

In the study, the first theme that emerged under insights was the increased vocabulary retention and understanding. Students shared that linking visuals with word meanings made it easier to remember and understand new terms. They explained that examples and illustrations helped them retain words for longer periods. This finding aligned with Udu et al. (2022), who emphasized that students’ active involvement in meaningful learning activities enhances their ability to retain knowledge. Similarly, Zarfsaz and Yeganehpour (2021) found that repeated exposure to vocabulary in contextualized settings significantly improves both comprehension and retention.

Additionally, the second theme that emerged was increased awareness of different word relationships. Students shared that the intervention helped them recognize words that sounded alike but had different meanings and understand how related terms connect in context. This supported Alsayed’s (2020) findings, which emphasized that learning word relationships enhances semantic mapping and deeper language understanding. Similarly, Pellicer-Sánchez (2020) noted that vocabulary development involves more than word recognition—it includes understanding real-time word processing and contextual meaning, aided by tools like eye-tracking.



Furthermore, the third theme that emerged was the use of newly acquired vocabulary in real communication. Students shared that the intervention helped them apply vocabulary more effectively in both speaking and writing. This finding aligned with Dadola et al. (2020), who noted that vocabulary learning is often hindered by word difficulty, limited grammar skills, and the gap between spoken and written forms. Addressing these through targeted activities improved students' sentence construction and language use. Similarly, Yudha and Mandasari (2021) highlighted that creative strategies like games support vocabulary use in meaningful contexts, especially for younger learners.

Also, the fourth theme was increased self-efficacy and confidence in handling vocabulary challenges. Students shared that the intervention reduced their fear of unfamiliar words and helped them use new vocabulary more confidently. This supports findings by Ghafar (2023), which showed that learners with higher self-confidence tend to perform better in vocabulary, pronunciation, and grammar. Similarly, Li et al. (2024) found that self-efficacy interventions boost motivation and language performance, encouraging students to tackle vocabulary use with greater assurance.

Lastly, the fifth theme was the activation of prior knowledge. Students noted that the intervention helped them connect new vocabulary with what they had already learned. This aligns with Brod (2021), who emphasized that activating prior knowledge aids comprehension by allowing learners to organize and interpret new information. Similarly, Brand et al. (2024) found that engaging with prior concepts, even incorrect examples, supports the gradual development of deeper understanding during instruction.

CONCLUSION

In the Philippine education system, it is important to address the emerging challenges, particularly the limited vocabulary knowledge among students, the need for innovative and purposeful strategies in teaching vocabulary became increasingly relevant. This action research, titled "*Enhancing Vocabulary Learning of Grade 11 Students Through the Word Web Wonders (WWW) Intervention: An Action Research*," was designed to address these challenges and improve students' mastery of key vocabulary concepts essential to academic success.

Hence, in the Research Question No. 1, which aimed to determine the level of vocabulary knowledge among Grade 11 students before the intervention, the researchers administered a pre-test that measured students' understanding of various lexical relations. The results showed a mean percentage score of 37.35%, categorized as "Very Low". This indicated that students had limited vocabulary knowledge prior to the intervention, affecting their comprehension and communication. Most students struggled with identifying synonyms, antonyms, and other word relationships, reflecting their need for structured and supportive instruction in vocabulary development.

Subsequently, after the implementation of the Word Web Wonders intervention, Research Question No. 2 was answered

by conducting a post-test to assess any improvement in students' vocabulary knowledge. The results showed a significant increase in the mean percentage score to 82.08%, interpreted as "High". This improvement demonstrated the effectiveness of the WWW intervention in helping students not only expand their vocabulary but also understand how words relate in meaning, structure, and context. The increase suggested that the engaging and interactive approach of the intervention fostered better learning outcomes among the students.

Moreover, in the third research question, a paired samples t-test was conducted to determine whether there was a statistically significant difference between the pre-test and post-test results. The statistical analysis revealed a significant improvement in students' vocabulary knowledge following the intervention, $t(29) = 43.1, p < 0.001$. Additionally, the Cohen's d value of 4.69 reflected a very large effect size, indicating that the intervention had not only statistical but also educational significance in enhancing vocabulary learning.

Furthermore, in exploring the fourth research question, the researchers gathered students' insights through interviews and focus group discussions. Thematic analysis revealed that learners found the WWW intervention enjoyable, effective, and easy to follow. Many students expressed increased confidence in using vocabulary in both written and spoken forms, crediting the intervention's visual and conceptual learning techniques, such as word webs, for making vocabulary more memorable and applicable to real-life situations.

Thus, this action research showed how using strategic and student-centered activities could help students improve their vocabulary. As future teachers, the researchers saw that building strong vocabulary was not only important for doing well in school but also for helping students communicate better in everyday life. The success of the WWW intervention proved that being creative, understanding students' needs, and teaching with clear purpose were important in helping different types of learners succeed in today's classrooms.

RECOMMENDATIONS

This study successfully achieved its objectives by determining the level of vocabulary knowledge among Grade 11 – Amber students before and after the implementation of the Word Web Wonders (WWW) intervention, determining the significant difference between their pre-test and post-test results, and exploring the effectiveness and insights shared by students. Despite its success, the study faced several limitations. Therefore, it was recommended that future researchers expand the sample size to improve the generalizability of results and consider conducting longitudinal studies to evaluate the long-term impact of the WWW intervention. Further comparative studies involving other vocabulary enhancement strategies and the integration of technological tools, such as digital word games and mobile learning applications, were also encouraged.

Additionally, for students, consistent engagement in the WWW activities and regular application of the vocabulary strategies taught were essential for continued improvement. Actively participating in tasks like word mapping, creative writing,



collaborative discussions, and reflective vocabulary journals helped reinforce their learning. Seeking constructive feedback from teachers and peers further strengthened their vocabulary use in various contexts. Also, for teachers, it was advised to pursue ongoing professional development that focused on vocabulary instruction and innovative strategies like the WWW intervention. Implementing diverse, student-centered vocabulary activities, creating an inclusive and encouraging classroom environment, and consistently tracking students' vocabulary progress with formative feedback were deemed effective instructional practices.

Hence, the recommendations were grounded in the outcomes of the current study, supporting the effective execution of the WWW intervention and promoting further research efforts aimed at enhancing students' vocabulary proficiency and overall English language development.

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