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| RESEARCH ARTICLE

Word Map as Tool in Improving Vocabulary

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| ABSTRACT
The study's aim is to determine the effectiveness of word maps in improving students' vocabulary skills at the University of Cebu - Main Campus, A.Y. 2020-2021. Based on the findings, a vocabulary enhancement plan was proposed. Specifically, the study sought answers to the pre-test scores of the control and experimental groups, the post-test scores of the two groups, the significant difference between their pre-test scores, the significant difference between their pretest-posttest scores, and the significant difference between their post-test scores. A quasi-experimental method is used for the control and experimental groups, with vocabulary questions and word maps. There were 40 students in Lit 11 World Literature subject. The experimental group was treated with a word map, while the control group was taught using the traditional lecture method. Pre-test and post-test evaluations were used to measure the student's academic performance for both groups. The world map has proven effective in improving students' vocabulary skills. Students are able to connect the relationships of ideas, facts, and terms within a learning task, as well as to connect prior knowledge and new knowledge and provide a structure for thinking and writing. In order to utilize word maps as an essential teaching and reading strategy, a syllabus enrichment was proposed.

| KEYWORDS

Linguistic, Word Map, Quasi-experimental, Classroom Setting, Philippines

| ARTICLE INFORMATION

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1. Introduction

In learning a language, four macro skills are integral for successful communication. These are reading, writing, speaking, and listening. Language learners need to learn these four skills in order for them to communicate with other people – they listen first, then they learn to speak and learn how to read and then write (Bsharat & Barahmeh, 2020).

However, comprehension can only be achieved if the learner's vocabulary bank is developed. A robust vocabulary is critical to complete comprehension. Since comprehension is the ultimate goal of the learner, the importance of his vocabulary development cannot be taken for granted (Kieffer & Lesaux, 2007).

Mastery, or at least familiarity, with the English language depends on the knowledge of vocabulary by both second language learners and native speakers. Developing vocabulary is all the more critical to non-native students in English. Mastering English vocabulary enables students to understand the meaning of words and helps the students to communicate well (Min, 2013).

Vocabulary is critical in learning any foreign language or even a mother tongue. However, there have been challenges in English vocabulary development, including limited vocabulary knowledge. Thus, difficulties in understanding written and oral language may arise. Ultimately, low English vocabulary knowledge poses several problems, including weak academic performance in different courses related to language, literature, and linguistics (Niroo & Williams, 2022).

Vocabulary, being the main language component, is also considered to be one of the crucial parts of teaching and learning. It enables students to substantiate ideas in order for them to understand the text while they are reading quickly. It is believed that effective communication depends on a good amount of knowledge of vocabulary. However, poor mastery of vocabulary knowledge is one of the challenges that college students face (Celik, 2022).

Exposing college students to learning vocabulary, such as knowing the meanings of new words and correctly using new words, may help them develop their vocabulary learning. In order to succeed in language learning and development, students must have well-developed vocabularies. Language acquisition by students is only possible by learning the lexis of a word with unlimited shifts in meaning that result from various contextual variables (Krashen, 1981).

Moreover, aside from helping the students acquire a second language, vocabulary learning is beneficial for students' reading comprehension and reading proficiency, as vocabulary learning involves understanding the meaning, remembering it, consolidating and extending the meaning of a particular word, and minimizing difficulties in understanding words. It is also essential that students need to cultivate a culture of reading.

Low test scores among English Language Learners in a reading and writing class indicate low vocabulary proficiency accounts for weak reading comprehension. As simple as following test instructions is already a challenge for them. Further, low scores are also because of the wrong choice of words from the selection simply because such words or phrases seem unfamiliar or are familiar but need clarification on their definition. Hence, vocabulary, the essential component of reading, indicates the overall reading ability of the students. Filipino students, for example, as second language learners with sufficient reading skills, have greater chances of success in school than those with poor reading skills. Students with poor reading comprehension are associated with poor reading skills. If no proper intervention is given early, it could ultimately affect the child's academic, social, and psychological development (Cayubit, 2012).

As observed in an actual situation in the classroom, students need help understanding what they read, thus finding themselves needing help understanding the gist of what they read. Also, this is one of the reasons why some students fail quizzes or tests because they need help to grasp simple test instructions. This research finds it imperative that students learn vocabulary as it is the basis for acquiring a second language. It is also the basis for augmenting their language skills, may it be speaking, listening, reading, and writing. Therefore, low vocabulary proficiency among students hampers learning a second language, thus impeding the student's academic performance (Putri et al., 2014).

The word mapping technique is helpful because when students are asked to figure out the meaning of a new word, they would have a greater awareness of a strategy for determining word meanings. Furthermore, with the word map technique, they would ask themselves questions and think about what they already knew and new terms in several ways. In contrast, the students, without this instruction, tended to answer, "I would look it up." This suggests that students can internalize and use the concept of definition with the need to understand the definition and how it works before they can give the meaning of a word on their own. Hence, given that vocabulary supports reading development and improves comprehension, this study will benefit students because the meaning of a particular word that is new or familiar to them is explained to them rather than just providing a dictionary definition for the word. However, students refer to context, prior knowledge, and even dictionaries to find the elements needed to complete the map.

According to linguist Wilkins (1972), “Without grammar, there is very little that can be conveyed, but without vocabulary, nothing can be conveyed.” This is primarily why the researcher aims to study word maps and their effect on enhancing language and vocabulary skills among students and improving reading comprehension.

2. Framework

This study is anchored on Stephen Krashen's (1981) Acquisition-Learning Hypothesis and is supported by John Schumann's (1986): Acculturation Model and Stephen Krashen's (1981) Input Hypothesis.

Acquisition-Learning Hypothesis states that the acquisition-learning distinction is the most basic of the five hypotheses in Krashen's theory and is widely known among linguists and language teachers. Krashen said that there are two independent systems of foreign language performance: 'the acquired system' and 'the learned system.' The 'acquired system' or 'acquisition' is the product of a subconscious process almost identical to the process children undergo when acquiring their first language. Substantial interaction in the target language - natural communication - in which the source are concentrated not in the form of their utterances but in the communicative act is required. (Krashen, 1981).

Krashen (1981) also states that language acquisition, being a subconscious process, is similar to how children develop their ability in their first language. It states that language acquirers are aware that they are using the language for communication and are not usually aware that they are acquiring it.

Moreover, the result of language acquisition is also subconscious. Language acquirers need to be made aware of the rules of the languages they have acquired. Instead, they have a "feel" for correctness. Grammatical sentences sound correct or feel correct, and errors feel wrong, even if we are unaware that the rule was violated.

The "learned system" or "learning" is the product of formal instruction, and it comprises a conscious process that results in conscious knowledge 'about' the language, for example, knowledge of grammar rules. A deductive approach setting procedure in a teacher-centered process "learning," while an inductive approach in a student-centered setting leads to "acquisition." Taken from this point, for a child to quickly pick up words instantly, a practical system should support them in learning such terms before they can acquire them immediately.

It is crucial to analyze the characteristics of the target language, including its degrees of irregularity and difficulty. Methods used in language learning are progressive and cumulative, typically tied to a preset syllabus that includes vocabulary memorization. These methods seek to transmit to the student knowledge about the language, its contrast with the student's native language, and the knowledge that hopefully will produce the practical skills of understanding and speaking the target language (Schutz, 2018).

The Acculturation Model emphasizes that there are social variables concerning language learning among groups of people. According to this theory, an individual may learn under social conditions which are not favorable for second language acquisition and may not learn under social conditions which appear to be favorable. Language shock, culture shock, and motivation are some of the psychological variables which are effective that influence acculturation and second language acquisition. Children consider language a play method and find communication a source of pleasure. Although they are less worried about speaking a second language than adults, children are often haunted by doubts as to whether the words they use reflect their ideas. Further, children are willing to misuse a particular word and to form new words if necessary.

Schumann (1986) also states that besides social variables, motivation is also a compelling factor in second language acquisition, which involves the learner's reasons for attempting to acquire the target language or the second language. According to Schumann, an integratively-oriented learner wants to learn the second language to meet with, talk to, find out about, or probably become like speakers of the target language whom he both values and admires.

Furthermore, it was affirmed that an instrumentally-oriented learner, on the other hand, has little interest in the people who speak the target language but wants to learn the language to get ahead in his occupation or gain recognition from his membership group.

Input Hypothesis emphasizes that the best hypothesis is that competence in vocabulary and spelling is efficiently attained by comprehensible input in the form of reading. The Input-Hypothesis theory indicates that when a language-acquisition device is involved, language is subconsciously acquired and that the focus is on the message and not the form. This hypothesis allows the development of some linguistic knowledge to occur outside the language acquisition device using other mental faculties.

Moreover, the Input-Hypothesis Theory states that such knowledge is deliberately and consciously learned and is represented consciously in the brain (KRASHEN, 1989).

This theory by Krashen is supported by facts based on the research by Wasik et al. (2016), which found that research reading, especially books, is widely acknowledged as an essential vehicle for developing vocabulary in young children. In order to help children learn words, there should be a more in-depth analysis of book reading that could help guide teachers who want to know what to do with children to increase vocabulary learning.

It is indicated that motivational orientation associated with proficiency in the second language varies according to the setting. In settings such as the Philippines, there may be less motivation to acquire English as a second language because it is neither necessary nor an accepted fact of life that a second language be acquired. However, there is a great deal of instrumental motivation among learners to deal with their peers and classmates, as well as with their teachers and educators.

In the context of language learning with the use of graphic organizers, one way to improve different aspects of comprehension, such as literal and relational comprehension and vocabulary learning (DiCecco & Gleason, 2002), is to use the concept of definition map, popularly known as word map. Further, word maps can improve self-perception by adolescents as empowered writers (Hallenback, 2002).

In order to describe the structure of semantic knowledge, three categories of relationships are used in word maps: (1) the general class to which the concept belongs, (2) the primary properties of the concept and those that distinguish it from other members of the class, and (3) examples of the concept. These categories can be translated into three (3) general questions to guide students in their search for a word's meaning: (1) what is it? (2) what is it like? (3) What are some specific examples and non-examples of the word (Schwarts et al., 1985).

On the other hand, teachers can advance the use of new words through graphic organizers, such as the concept of definition, mainly when focusing on vocabulary development. A critical factor in children using newly learned vocabulary words is in classroom environments that encourage active discussions among students and between students and teachers. Reducing the achievement gap happens in engaged, lively, experiential environments where teachers help students activate prior knowledge and build new understanding using graphic organizers such as word maps. (McKenzie, 2014).

Word map strategy helps learners learn new vocabulary words. It also helps struggling readers because it gives more meaning to learning the vocabulary word and can be adjusted to meet the needs of all learners by adding, for example, antonyms, synonyms, and parts of speech. Word maps also help learners organize their thoughts using charts that provide more context and clues because they include definitions and sample sentences for each vocabulary word. Further, throughout this strategy, students make personal connections because they will write their sentences and the definitions in their own words (Strategies for Students: What Is a Word Map, 2015).

Vocabulary, one of the essential parts of reading instruction, is an essential part of teaching reading, thus improving reading comprehension. The use of the Word Map strategy improves the students' achievement in terms of vocabulary mastery, according to a study conducted by Hakim (2019). The findings indicate that students will have a learning environment so that they can be more independent and motivated in learning English vocabulary and that it will help the students' learning strategy by remembering the stock of vocabulary they have memorized. Further, the word mapping strategy develops interaction between the teacher and the students to work together in connection to the idea.

The students manifest vocabulary mastery through the ability to categorize and arrange words using a Word Map diagram, as indicated by a research study by Qomariyah and Nafisah (2020). They suggest that when students use word maps, they can learn how to arrange information or words into a meaningful word map, which is easier to understand and remember than plain text. Further, the students' more meaningful processing of material can result in better recall of vocabulary words (Anderson, 2014).

Similar results were indicated in the research study conducted by McKenzie (2014), which concluded that using graphic organizers for new vocabulary words is an effective way of promoting understanding, increasing word recognition and understanding, and may be an excellent way to promote vocabulary development. It is found that a critical factor in children using newly learned

vocabulary words is in classroom environments that encourage active discussions among students and between students and teachers. According to this study, teachers can make innovations in reducing the achievement gap in early literacy skills by incorporating vocabulary learning with children's literature, for instance, reinforcing word use through conversations, multimedia applications, play, and scaffolding the child's word learning and use. Further, the study suggests that closing the achievement gap is impossible in a quiet, worksheet-based classroom but in engaged, lively, experiential environments where teachers help children activate prior knowledge and build new understanding from an existing schema.

There is also evidence that show improvement in vocabulary among students with the use of word map. Ningrum and Kurniasari (2014) found that the word map strategy enables students to generate new vocabulary. According to the researchers, word mapping is unique because it requires students to create a map for the word, enabling them to know the word as the synonym, antonym, or another form of a word. It also emphasized that in this method, students need to identify the word, not only the meaning but also other parts of the speech. Further, the study suggests that word mapping strategy or method could learn many words from mapping and that their vocabulary is not limited, and it could help them improve their language skills, for example, speaking and writing.

Word maps effectively work so that words are depicted graphically concerning one another, helping the students recognize connections between and among words, including synonyms and antonyms. The findings of the study by Humaira (2015) revealed that students learn about words through mapping because it helps them examine the characteristics of the word concepts, categorize words, and see relationships among similar and different words. Furthermore, it concluded that the word mapping method is a graphic rendering of a word's meaning and is a technique for representing knowledge in graphs, which are networks of concepts.

Categorizing and arranging words using a word map diagram proved to be effective in improving the students' vocabulary mastery, as indicated in the research study by Qomariyah and Nafisah (2020). They suggest that when students use word maps, they can learn how to arrange information or words into a meaningful word map, which is easier to understand and remember than plain text. Further, the students' more meaningful processing of material can result in better recall of vocabulary words (Anderson, 2014).

Students are motivated to learn more effectively through their active participation in using the English language when they are taught word mapping techniques. These are the findings of the study by Melieta (2016), which revealed the effectiveness of the word mapping technique on students' vocabulary mastery was also shown by the student's learning process when the treatment was given, which they became actively engaged in the activities conducted by the teacher. The study also found that Word Map promoted the students' more profound understanding of new words and engaged them in thought processes about the relationship of the word.

Similarly, a study by Wardani (2015) suggested that students must enrich their vocabulary to communicate, write, listen, and comprehend texts in English very well and that increasing students' ability to master vocabulary by using word maps is more helpful.

Graphic organizers generate ideas, design complex structures, and integrate new and old knowledge, thus helping the student's performance in class. It has been proven through a study on graphic organizers by Lumontad (2014) that students who received experimental treatment have an advantage in terms of reading comprehension over those who did not. The study concluded that graphic organizers are an effective strategy for developing students' structural thinking skills.

The learning environment improves the overall performance of the students so they can be more independent and motivated in learning English vocabulary. This is what the results of the research by Hakim (2019) found that the learners' environment, using graphic organizers such as Word Map, helps their learning strategy by remembering the stock of vocabulary they have memorized. Furthermore, the results concluded that the Word Mapping strategy helped improve the students' achievement in terms of vocabulary mastery and reduced the students' achievement gap due to the interaction between the teacher and the students to work together in connection to the idea.

While it is true that word map is aimed at improving learning, it does not supersede conventional teaching strategy and the educational system in general. However, the introduction of word maps to students to determine the student's quality of learning is found to be effective because students can connect the relationships between facts, terms, and ideas within a learning task, as

well as prior knowledge and new knowledge and provides a structure for thinking and writing. Further, a word map promotes students' in-depth understanding of words by depicting varying relationships between and among words.

Word maps can be of great help to the students at the University of Cebu. The theories and studies related to language learning and vocabulary are the ultimate bases that the researcher conducted his study on "Word Map as Tool in Improving Vocabulary."

3. Objectives of the Study

The study determined the effectiveness of word maps in improving the vocabulary skills of college students in World Literature subject at the University of Cebu – Main Campus. Through the lens of the control and experimental group's pre-test and post-test scores, whether there is a significant difference between their pre and post-test scores and, finally, if a significant difference is observed between their post-test scores.

4. Methodology

4.1 Research Design

A quasi-experimental study design uses a descriptive - and evaluative method. This was conducted at the University of Cebu – Main Campus, situated along the street of Sanciangko in Cebu City. Forty (40) College students from the College of Customs Administration of the University of Cebu – Main Campus participated in the study.

Table 1

Research Subjects' Midterm Grades in Lit 11 Subject for the 1st Semester A.Y. 2020-2021

Control Group		Experimental Group	
Student	Midterm Grade	Student	Midterm Grade
1	2.2	A	2.2
2	1.8	B	1.8
3	1.7	C	1.7
4	1.6	D	1.6
5	1.6	E	1.6
6	1.6	F	1.6
7	1.6	G	1.6
8	1.6	H	1.6
9	1.6	I	1.6
10	1.6	J	1.6
11	1.5	K	1.5
12	1.5	L	1.5
13	1.5	M	1.5
14	1.5	N	1.5
15	1.5	O	1.5
16	1.5	P	1.5
17	1.5	Q	1.5

18	1.5	R	1.5
19	1.5	S	1.5
20	1.5	T	1.5
Total	20	Total	20
Average	1.60	Average	1.60

A passage by Goodwin B. Smith titled "How to Succeed As An Inventor" was the material given to the subjects for reading that comes with a vocabulary exercise based on the passage given to the subjects. The vocabulary exercise has 20 items with qualitative interpretation following score ranges:16-20 Very satisfactory, 11-15 Satisfactory, 6-10 Fair, and 0-5 Poor.

4.2 Research Procedures

Gathering of Data. A letter of request was sent to the Dean of the College of Arts and Gen-Ed Dept. of the University of Cebu – Main Campus in Sanciangco St., Cebu City. As soon as the request was approved, the study was conducted. The students' midterm grades during the 1st Semester of A.Y. 2020-2021 were the basis for creating the control and experimental groups of the respondents. Before the actual gathering of data, there was a pilot test given to another group of students to identify the problems or challenges that may arise in the actual test-taking of the respondents and to assess their needs eventually. The pilot test using Cronbach's Alpha yields a result of 0.7490.

The subjects of this study were divided into two groups – control and experimental groups through matching grades. In the first session, the researcher conducted lessons on vocabulary and reading for the two groups. In the second session, the researcher conducted pre-tests of one passage and a set of vocabulary tests for the two groups. The set of exercises in the pre-test is good for 30 minutes. In the third and fourth sessions, the researcher gave word map interventions to the experimental group.

Following the administration of the pre-test sessions for the two groups, the respondents in the control group were asked by the researcher to answer some questions about the passage orally. The students had individual, think-pair-share, and free-flowing discussions without any interventions from the teacher as manifestations of their understanding of the passage. On the other hand, the researcher introduced word-mapping interventions for the experimental group.

The subjects in the experimental group were given word map interventions with these steps:

1. The researcher introduced a set of vocabulary taken from the reading selection that may have caused difficulty for the students. The world map diagram was then given to the students. Each vocabulary word was analyzed with the use of the word map diagram.
2. The researcher modeled first how to write a definition using the information on the word map.
3. The researcher taught the students how to use the word map by putting the target word in the central box. Students may brainstorm or freely associate words related to the target word.
4. The researcher asked the students to suggest words or phrases put in the other boxes which specifically answer the following questions: "What is the target word?" "What is the phrase or sentence from the text?" "What is its matching dictionary definition and function?" "What is its synonym?" "What is its antonym?" and "What are the other forms of the target word?" The teacher wrote the students' suggestions on the board, adding words that the students needed to learn.
5. The researcher also guided the students in defining the target word. A dictionary may be used. It is also emphasized to include the word category, the critical properties or characteristics, and specific examples.
6. The researcher then asked the students to write their original sentences, using the target word as the basis.

In the post-test sessions, the two groups of respondents were asked to read the same passage and another set of vocabulary tests. The respondents spent 30 minutes on the passage and vocabulary test. The reading vocabulary scores of the experimental group were utilized to determine whether or not the word map technique was effective.

The following statistical tools were used in summarizing, analyzing, and interpreting the data gathered from the pre-test and post-test results of the control and experimental groups, particularly the descriptive part: 1. Frequency Count and Percent were used to

summarize, analyze and interpret the pre-test and post-test performance of the students in the control and experimental groups; 2. Simple Percentages to determine the profile scores of the respondents; 3. Frequencies to analyze and interpret the data on the respondents' scores, fourth, Means and Standard Deviations were used to compare the scores of the control and experimental groups. The following statistical tools were used to address the inferential part of the analysis: one, the T-test of Independent Samples to test the significant difference between the control and experimental groups; two, the T-test for Two Independent Samples were used to determine the significance of the difference between the pre-test of the control and experimental groups. Likewise, this tool was also used in determining the significant difference between the post-test scores of the control and experimental groups, and thirdly, the T-Test for Correlated Samples was used to determine the significance of the difference between the pre-test and post-test scores of the students in the control group. Likewise, this tool was also used in determining the significance of the difference between the pre-test and post-scores of the students in the experimental group.

5. Results and Discussion

This chapter deals with the presentation, analysis, and interpretation of data gathered from the pre-test and post-test scores and the significant difference between the two groups of respondents.

5.1 Pre-test Scores

This section presents the summary, analysis, and interpretation of the pre-test scores of the control and experimental groups. Table 2 shows the results.

Table 2
Pre-test Scores of Control and Experimental Groups

		Control Group		Experimental Group	
Score Ranges	**Description**	**Frequency**	**Per Cent**	**Frequency**	**Per Cent**
16 – 20	Very Satisfactory	0	0.00	2	10.00
11 – 15	Satisfactory	6	30.00	9	45.00
6 – 10	Fair	6	30.00	9	45.00
0 – 5	Poor	8	40.00	0	0.00
	Total =	20	100.00	20	100.00
	Mean =	7.85		10.50	
	SD =	3.76		3.12	

As reflected in Table 2, the pre-test performances of forty percent (40%) of the students in the control group are categorized as *poor*. Thirty percent (30%) belonged to *the fair* category, and another thirty percent (30%) had a *satisfactory* performance. None of them got a *very satisfactory* performance. Meanwhile, the pre-test performances of forty-five percent (45%) of the students in the experimental group were categorized as *fair*. Further, the other forty-five percent (45%) of them got *satisfactory* performance. Only ten percent (10%) of them *performed satisfactor*ily. All of them had *a good* performance.

The figures above imply that the students in the control group and students in the experimental group are on par with each other in terms of performance with the traditional approach in teaching and without any intervention or treatment.

5.2 Post-test Scores

This section presents the summary, analysis, and interpretation of the post-test scores of the control and experimental groups. Table 3 shows the results.

Table 3
Post-test Scores of Control and Experimental Groups

		Control Group		Experimental Group	
Score Ranges	Description	Frequency	Per Cent	Frequency	Per Cent
16 – 20	Very Satisfactory	2	10.00	11	55.00
11 – 15	Satisfactory	7	35.00	9	45.00
6 – 10	Fair	11	55.00	0	0.00
0 – 5	Poor	0	0.00	0	0.00

Total =	20	100.00	20	100.00
Mean =	10.40		14.95	
SD =	2.84		2.01	

As shown in Table 3, more than half of fifty-five percent (55%) of the students in the control group showed *fair* performance in their post-test. Thirty-five percent (35%) of them were categorized under *satisfactory* performance. Only ten percent (10%) of this group of students showed very satisfactory performance. For the experimental group, more than half of fifty-five (55%) showed *very satisfactory* performance. The remaining forty-five percent (45%) got *satisfactory* performance.

This implies that the students in the experimental group are ahead in test performance with the use of an intervention or treatment compared to the students in the control group.

5.3 Difference between the Pre-test Scores

This section presents the test result conducted to determine the significance of the difference between the pre-test scores of the control and experimental groups. Table 4 summarizes the result.

Table 4
Difference Between the Pre-test Scores of the Control and Experimental Groups

Groups	Mean	df	t-stat	t-crit	p-value	Decision on Ho	Interpretation
• Control	7.85	38	2.426	2.024	0.02	Reject Ho	Significant
• Experimental	10.50						

As indicated in Table 4, the test conducted on the significance of the difference between the pre-test scores of the control and experimental groups yielded a more significant test statistic (2.426) than the critical value (2.024). This result caused the rejection of the null hypothesis and implied a significant difference in the pre-test scores of the control and experimental groups. As shown, the experimental group's mean (10.50) is greater than the mean of the control group (7.85). The mean gain score is the difference between the post-test score minus the pre-test score for each student involved in the control and experimental groups. The test of the significance of the mean gain scores is incorporated in Table 5.

The data imply that the experimental group performs better than the control group. However, this disparity will not affect the analysis of the effectiveness of word maps in improving the vocabulary skills of college students in world literature when the mean gain scores are to be used in comparing the students' performances.

5.4 Difference between the Pre-test and Post-test Scores

This section presents the result of the test conducted to determine the significance of the difference between the pre-test and post-test scores of the control and experimental groups. Table 5 summarizes the result.

Table 5
Difference Between the Pre-test and Post-test Scores of the Control and Experimental Groups

	Mean	df	t-stat	t-crit	p-value	Decision on Ho	Significance
Control Group							
• Pre-test	7.85	19	6.075	2.093	0.00	Reject Ho	Significant
• Post-test	10.4						
Experimental Group							
• Pre-test	10.5	19	14.271	2.093	0.00	Reject Ho	Significant
• Post-test	14.95						

Table 4 showed that the test of the significance of the difference between the pre-test and post-test scores of the control group yielded a test statistic (6.075) more remarkable than the critical value (2.093). Hence, the null hypothesis was rejected, meaning there is a significant difference between the pre-test and post-test scores of the students in the control group. Based on the means, the post-test scores of the students in the control group are higher than the pre-test scores.

Meanwhile, the test of the significance of the difference between the pre-test and post-test scores of the experimental group yields a test statistic (14.271) more remarkable than the critical value (2.093). Hence, the null hypothesis was rejected, meaning

there is a significant difference between the pre-test and post-test scores of the students in the experimental group. Based on the means, the post-test scores of the students in the experimental group are higher than the pre-test scores.

The data show that there were increases in students' scores in the control and experimental groups. It implies that the traditional approach of teaching and the use of word maps in improving the vocabulary skills of college students in world literature are both practical.

This finding is supported by Qomariyah and Nafisah (2020) when they stated that when using word maps, they can learn how to arrange information or words into a meaningful word map, which is easier to understand and remember as compared to plain text, thus proved to be effective in improving vocabulary mastery of the students.

Likewise, this finding is supported by McKenzie (2014) when he concluded that the use of graphic organizers, such as word maps, for new vocabulary words is an effective way of promoting understanding, as well as increasing word recognition and understanding and may be a good way in promoting vocabulary development. Based on the results of this study, McKenzie has proven that a critical factor in children using newly learned vocabulary words is in classroom environments that encourage active discussions among students and between students and teachers.

5.5 Difference Between the Pre-test and Post-test Scores

This section presents the result of the test conducted to determine the significant difference between both test scores and post-test scores of the control and experimental groups. Table 6 summarizes the result.

Table 6
Difference Between the Post-test Scores of the Control and Experimental Groups

	Mean	Df	t-stat	t-crit	p-value	Decision on Ho	Interpretation
Post-test							
• Control	10.4	38	5.852	2.024	0.00	Reject Ho	Significant
• Experimental	14.95						
Mean Gain Scores							
• Control	2.55	38	3.634	2.024	0.00	Reject Ho	Significant
• Experimental	4.45						

The data show a significant difference between the post-test scores of the control and experimental groups. Based on the means, the average score of the experimental group (14.95) is greater than the control group's average score (10.40). It could mean that the experimental group is performing better than the control, which was also manifested in the pre-test scores for the two groups. However, using mean gain scores would still provide a logical analysis in determining the effectiveness of word maps in improving the vocabulary skills of college students. As indicated in Table 5, a significant difference in the mean gain scores of the control and experimental groups is noticeable. The mean gain score of the experimental group (4.45) is greater than the mean gain scores of the control group (2.55).

This finding implies that using word maps is more effective in improving vocabulary skills than the traditional teaching approach.

This finding is supported by Humaira (2015) when he stated that in the word map technique, words are depicted graphically concerning one another, helping students recognize connections between and among words, including synonyms and antonyms, thus helping them examine the characteristics of the word concepts, categorize words, and see relationships among words that are similar and different.

Likewise, this finding is supported by Melieta (2016) when she said that the word mapping technique promoted the students' more profound understanding of new words and engaged them in a thought process about the relationship of the word. Further, this proves that the effectiveness of the word mapping technique on students' vocabulary mastery was also shown by the student's learning process when the treatment was given.

The findings validated the Input Hypothesis by Stephen Krashen (1981), which states that the best hypothesis is that competence in vocabulary is efficiently attained by comprehensible input in the form of reading. This study's findings also substantiate Krashen's

theory that when language-acquisition device, such as graphic organizers, is involved, language is subconsciously acquired, and the focus is on the message and not the form.

6. Conclusion

The research aimed to assess how word maps can help college students improve their skills in the World Literature subject. Additionally, it investigated the posttest scores of both the control and experimental groups, examining if there were any differences in their pretest scores and determining if significant variations existed between the pretest and posttest scores within each group. The study findings revealed that although both groups had scores initially, the experimental group showed significantly higher posttest scores compared to the control group. Moreover, statistical analysis demonstrated distinctions in the scores between both groups, as well as between their pretest and posttest scores. Ultimately, a noticeable difference was observed in the scores between the control and experimental groups. These results highlight how advancements like word maps aid students' transition into learners by providing effective graphic organizers. Word maps serve as a teaching strategy that enhances thinking skills, fosters interactivity and boosts motivation for vocabulary development.

Furthermore, the application of word maps aids students in better retaining their vocabulary knowledge, empowering them to provide detailed descriptions and explanations of words. However, the study's focus on college students in a World Literature subject may limit the applicability of the results to different subjects or student populations. Also, external factors such as prior exposure to word maps, individual learning styles, and participant motivation must be accounted for, which could have influenced the outcomes. Lastly, the availability of resources for implementing the word map strategy leaves questions about its practicality and effectiveness in real-world educational settings. The statement suggests that further investigation is warranted to explore the potential benefits of several student vocabulary enhancement strategies. Specifically, these strategies include Semantic Feature Analysis, Word Walls, List-Group-Label, and Possible Sentences.

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