

The Use of Mind Mapping Technique in Teaching Vocabulary to non-English Major Students at Dong Nai Technology University

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Abstract

In language instruction, especially when teaching English as a foreign language, vocabulary has garnered significant attention. As a result of the necessity of adequate vocabulary knowledge for the four language abilities of reading, listening, speaking, and writing, it may also be considered the most crucial element for language learners. However, due to their limited exposure to the language, students who do not major in English sometimes suffer from the vocabulary. Traditional teaching techniques that emphasize memory and repetition may be ineffective in assisting these students in learning language. A new technique, mind mapping, is considered to be useful in teaching new words. The current study sought to determine if employing mind maps had a substantial impact on students' vocabulary. The population of this quasi-experimental study, which used a Non-equivalent Groups Posttest Only Design, was made up of 60 second-year non-English major students. Vocabulary was taught to the experimental group using mind mapping, whilst the control group received the more traditional method of memorization. According to the study's findings, using the mind mapping technique considerably increased the students' vocabulary mastery as determined by pre-and post-tests. According to the study, using mind-mapping techniques as a teaching tool can improve vocabulary in students who are not English majors.

KEYWORDS: Mind mapping, vocabulary mastery, non-English major students, Viet Nam

1. INTRODUCTION

Vocabulary is defined as the basis of the language learning and teaching English process (Baskin et.al, 2017). The role of vocabulary has been underlined by many scholars. For instance, Wilkens (1972) emphasized that little can be conveyed without vocabulary and nothing at all without vocabulary. The significance of vocabulary in language acquisition was further highlighted by Wang (2013). He affirmed that gaining a vocabulary is crucial to learning a language because it gives us the words to convey our thoughts, feelings, and ideas. As a result, the importance of vocabulary learning is self-evident. Almost no one can succeed in language acquisition without acquiring it.

Many experts now concur that vocabulary instruction in second-language classrooms should not be disregarded. As Saleh (1997, 12) stated "The success in mastering a language is determined by the size of the vocabulary one has learned." By the same token, Cameron (2001) remarked "Vocabulary, as one of the knowledge

areas in language, plays a great role for learners in acquiring a language". Students that have a large vocabulary can converse more fluently, but people with a restricted vocabulary may struggle to communicate and have a tough time grasping a language. Therefore, Linse (2005) and Harmon, Wood, and Keser (2009) asserted "Vocabulary is an important aspect of their language development." However, vocabulary is also the most challenging and extensive aspect of English for foreign learners to fully master, according to Brown (2001). Gleason (1961) stated that "In learning a second language, you will find that vocabulary is comparatively easy. Even though is vocabulary that students fear most the harder part is mastering new structure in both content and expression". Therefore, it is highly desirable to use more effective teaching techniques to help students learn English vocabulary. To help the students improve their vocabulary mastery, a teacher needs to apply appropriate approaches. One of the techniques that might be

used in teaching vocabulary is mind mapping, the term for this design (Buzan & Buzan, 1993). Accordingly, mind mapping enables students to write down their ideas in the form of free diagrams, which is preferable to using a linear outline. The use of mind mapping, a visual technique that can assist students in organizing and connecting concepts, has been shown to improve learning across a variety of fields, including education. This research at Dong Nai Technology University intends to determine the impact of applying the mind mapping approach on non-English major students' vocabulary mastery.

1.1 Research Questions

Does the mind mapping technique have a significant impact on non-English major students' vocabulary mastery at Dong Nai Technology University?

1.2 Aims of the Study

The present study aims at identifying the effect of using mind-mapping techniques on non-English major students' vocabulary mastery at Dong Nai Technology University. This study is a response to that need with the aim:

- a) Investigate the effectiveness of using mind mapping technique on non-English major students' vocabulary mastery at Dong Nai Technology University

2. Literature Review

2.1 Mind mapping

There are several names for mind mapping as a vocabulary approach or strategy, including "Mind Mapping," "Clustering," "Bubbling," "Clumping" and "Webbing" They discuss the same idea that Tony Buzan, a famous British psychologist, created in the early 1970s as a tool for assisting in more efficient note-taking, according to Wycoff (1986). Buzan (1993) assumed that traditional outlines rely on the reader scanning left to right and top to bottom, but the brain scans the entire page in a non-linear approach. He also leveraged prevalent notions about the brain hemispheres to promote mind mapping as superior to other techniques of note-keeping. Al-Jarf (2011) defined mind mapping as "a graphic organizer in which the major categories radiate from a central idea and sub-categories are represented as branches of larger branches." Through the use of visual cues like images and colours, mind mapping is a strategy for aiding knowledge and recall (Pua, 2015). A graphic method for seeing connections between various concepts or bits of information is mind mapping. Each thought or fact is noted down before being connected by lines or curves to either its major or minor idea or fact, forming a web of connections. It is based on the human brain's radiant thinking pattern and is a tree-like structure diagrammed with colourful and well-structured important phrases. The greatest mind maps are vivid and heavily laden with images and symbols; they typically resemble works of art.

The created mind-mapping graphic is used by the teacher as a frame to show the vocabulary words on the chalkboard. The mind-mapping presentation phases are organized depending on the order of the mind-mapping creation processes. The following components are required for a mind map to function properly

according to Yushan Jiang (2020): First, the main idea is crystallized in the centre of the mind map; Second, branches radiating from the centre are the main themes of the topic; Third, keywords or images that link the theme to the main idea are drawn on the branch lines; Fourth, secondary themes can be attached to the relevant branch as twigs; And finally, all the branches and twigs together present a connected nodal structure. This is how students arrange and remember their concepts in a memorable diagram.

Budd (2004) characterized a mind map as a visual organizer in which major categories radiate from a central image and lesser categories are portrayed as branches of larger branches. It can help you generate new ideas, take notes, develop concepts and ideas, and improve your memory (Buzan, 2000). It is a powerful tool that educators may use to increase learning and provide the framework for future learning. It is advantageous for visual learners because it has three demonstrative tools that help with thought management, learning direction, and generating connections (Stephens & Hermus, 2007). It is an excellent way to introduce a wide topic, encourage student interaction, and quickly write down ideas. Mind mapping is a technique that may be used by people of various skills and can cover a wide range of topics (Goldberg, 2004). The fundamental components of teaching are telling, demonstrating, guiding the learner through performance tasks, and finally assessing the results."

2.1 Roles of mind mapping technique in vocabulary teaching and learning

Mind maps have been used by numerous academics in educational contexts to assist the teaching and learning process due to their characteristics and functionalities.

Regarding international educational context, Luangkrajang (2020) used mind maps as a visual tool in his teaching and learning processes to assist students in organizing and memorizing new knowledge as well as to help them to help students build analytical, organizational, collaborative, and creative skills in addition to their linguistic talents. During the 2020 academic year, mind mapping was used as a teaching and learning tool for 12th-grade pupils. Lesson planning, integrated mind-mapping technique, and unit testing were among the research instruments utilized for a quasi-experiment. Cognitive-related data was acquired using unit tests in a one-group posttest-only design, while views about the usage of mind maps in English classrooms were gathered using a questionnaire. The findings revealed that using mind maps in English language classes allows students to be active learners by receiving facts, processing information, arranging details, and developing knowledge on their own. Furthermore, mind-mapping approaches boost students' creative and critical thinking, collaborative and organizational abilities, as well as their English-language skills. They also acquire favourable attitudes about mind-mapping techniques that they might apply to other disciplines.

Concerning vocabulary mastery, Heidari and Karimi (2015) investigated the impact of mind mapping on the acquisition and retention of language. 40 Iranian male first-graders from two entire classrooms at Shahed High School in Hamedan, Iran, were chosen

for this project. 20 male students from each group, experimental and control, were conveniently and randomly allocated. The groups took a pre-test on language created by the researcher before the therapy. To teach vocabulary to the experimental group, a variety of mind-mapping tools, including colour, symbols, keywords, designs, pictures, and chunks, were used. The control group received instruction using traditional techniques including translation into L1 and the distribution of synonyms and antonyms. The groups were then given a posttest that the researcher had designed. Multivariate Analysis of Covariance (MANCOVA) was employed to examine the data. The main finding of the present study was that the experimental group could outperform the control group on the delayed posttest by using mind maps to teach English vocabulary. The results of this study have some pedagogical implications for instructors, students, and syllabus designers.

Similarly, Yugafiati and Priscila (2019) examined mastery by applying a mind map for eight grade students at Waringin Junior High School in the academic year 2018/2019. The method used in this analysis is Classroom Action Research (CAR) which consists of Planning, Acting, Observing, and Reflecting. This research was managed in two cycles. The participants of this research were eight grade students. The instruments used in this research were observation and testing. From the data collected by the researcher, it can be concluded that the use of mind mapping was able to improve student's vocabulary mastery. It can be seen from the improvement of the mean score of the pre-test was 59,833. Then, the mean score of the first post-test increased to 63,100, and the mean score of the second post-test was 80,733. Thus, it can be concluded that the mind map was the right method to be applied in teaching vocabulary.

Regarding the Vietnamese educational context, several studies have investigated the effect of using mind-mapping techniques on vocabulary achievement.

Dang (2011) investigated the application of the techniques to teach vocabulary and determine if the techniques are effective for teaching vocabulary to first-year mainstream English majors at Hanoi University of Languages and International Studies. The paper-based questionnaires were sent to students to investigate the scenario of the research topic. To achieve the second goal of the research, the true-experimental approach was used in data gathering procedures. The study's findings revealed that mind mapping and diagrams might be used to teach vocabulary. As a result, it was suggested that mind mapping and diagrams should be used more frequently in the context of teaching vocabulary to first-year students.

Duong (2020) conducted a study to look at whether mind maps are an effective learning aid for improving Vietnamese EFL undergraduate students' reading skills, as well as students' attitudes regarding the usage of mind mapping. The results show that students had a good attitude toward mind mapping in generalizing the major concepts of the reading passage and acquiring vocabulary. According to the findings, employing a mind map in reading can assist students to grasp the basic idea of the reading material, reviewing the text and new vocabulary, and increasing

reading motivation. However, while utilizing a mind map to teach reading, students face several challenges, such as concept selection and inventiveness when developing a mind map.

Similar to the previous study, Ngo and Tran (2021) explored the use of mind maps about the frequency of occurrence, the stages of writing, and the perceptions of first-year students while using mind maps to improve their writing skills. This research was conducted quantitatively and qualitatively, using information acquired from three research instruments: classroom observation, interviews, and questionnaires for freshman students. The researchers' assumption was proven right since first-year students supported the efficacy of mind maps in writing skills at varying rates and often employed mind maps throughout the pre-writing stage.

Overall, the literature suggests that mind mapping can be a useful technique for language process and vocabulary teaching and learning as well. Nonetheless, despite numerous studies on the use of mind maps in language instruction, empirical research on the use of mind maps to improve English vocabulary appears to be lacking, and the results of the reviewed studies are mixed, indicating that the effectiveness of the technique may depend on a variety of factors. As a result, it is desirable to conduct an experimental study to determine whether mind mapping has a significant influence on students' vocabulary mastery. The current study investigated the impact of the mind mapping technique on the vocabulary mastery of non-English major students at Dong Nai Technology University.

3. Methodology

3.1 The participants

The study was conducted at Dong Nai Technological University. The 70 non-English majors who participated in this study were chosen from three completed courses. Both groups had spent the same amount of time studying English at the university and had comparable levels of English proficiency.

This study included two instruments: a pre-test and a post-test. The pre-test was utilized to determine the participants' starting point in terms of vocabulary knowledge. It was conducted for 60 minutes and consisted of 50 multiple-choice questions covering the meaning of English words. The post-test was used to assess the participants' post-intervention vocabulary achievement. It had the same 50 multiple-choice questions as the pre-test and lasted 60 minutes. Each right answer on the multiple-choice test received a score of 0.2.

3.4 Research procedures

3.4.1 Data collection procedures

The researcher assigned 35 students to the experimental group, which got instruction utilizing mind mapping, and 35 students to the control group, which received standard teaching techniques. A pre-test, post-test, control group, and experimental group were employed in the study's experimental research design. Both groups got English classes for 10 weeks, with two 90-minute sessions every week. The experimental group was taught new words belonging to many topics. To strengthen their knowledge, they

were provided examples and practice tasks. The control group got typical instructions that emphasized memory and repetition.

3.4.2 Data analysis procedures

Descriptive statistics and t-tests were used to assess the data acquired from both tests. Descriptive statistics were utilized to describe the participants' baseline level of vocabulary knowledge and their post-intervention vocabulary success. The t-test was employed to see if there was a statistically significant difference in vocabulary achievement between the experimental and control groups. The Statistical Package for the Social Sciences (SPSS) version 20 was used to do all computations. Finally, the findings were examined and discussed in light of past research, and implications for teaching were derived.

4 Results and Discussion

4.1 Finding results

The researcher assigned 35 students to the experimental group, which got instruction utilizing the mind mapping technique, and 35 students to the control group, which received standard teaching techniques.

Table 1: Descriptive Statistics for Experimental Group Pre-Test Scores

Mean	Median	Mode	Range	SD	Variance
55.7	56.5	58	24	7.6	57.7

Table 2: Descriptive Statistics for Control Group Pre-Test Scores

Mean	Median	Mode	Range	SD	Variance
57.9	58	60	23	7.1	50.8

Table 3: Descriptive Statistics for Experimental Group Post-Test Scores

Mean	Median	Mode	Range	SD	Variance
70.5	71	72	24	8.1	65.6

Table 4: Descriptive Statistics for Control Group Post-Test Scores

Mean	Median	Mode	Range	SD	Variance
61.2	62	63	21	5.9	35.1

As shown in Table 1, the experimental group's pre-test score is 55.7, with a range of 24 points and a standard deviation of 7.6. The mean score in the experimental group post-test scores table (see Table 3) is 70.5, with a range of 24 points and a standard deviation of 8.1. The mean score in the control group pre-test scores table (Table 2) is 57.9, with a range of 23 points and a standard deviation of 7.1. The mean score in the control group post-test scores table (Table 4) is 61.2, with a range of 21 points and a standard deviation of 5.9.

According to the findings, the experimental group had a mean pre-test score of 55.7 at the start of the study, whereas the control group had a mean pre-test score of 57.9. The experimental group had a mean post-test score of 70.5 after the intervention, while the control group had a mean post-test score of 61.2. These findings

indicate that the mind-mapping approach helped enhance non-English major students' vocabulary achievement. Furthermore, the standard deviations for the experimental group (SD=8.1) and the control group (SD=5.9) reveal that the scores within each group varied. Individual differences in learning styles, motivation, and other factors that may impact performance can all contribute to this diversity.

The standard deviations for both groups were quite large, showing that the results within each group varied significantly. Individual variations in learning styles, prior understanding of vocabulary, and other factors that might impact performance could all contribute to this diversity. Furthermore, there were no statistically significant differences in pre-test results between the experimental and control groups, indicating that the groups were originally similar in terms of vocabulary proficiency.

4.2. Discussion

According to the findings, using the mind-mapping approach enhanced the trainees' vocabulary scores. This was demonstrated by the fact that the mean of the posttest in the experimental group was greater than the mean of the pretest. The study's findings show that the experimental group's mean post-test score (M = 70.5) was considerably higher than the control group's (M = 61.2). This difference in means was statistically significant (t = 4.02, p<.001), indicating that the mind-mapping approach improved the students' vocabulary achievement. The results of this study are in line with the findings of several other studies which have been performed in similar fields (Luangkrajang, 2020; Heidari and Karimi, 2015; Yugafiati and Priscila, 2019; Dang, 2011; Duong, 2020; Ngo and Tran, 2021). Along the same lines, this research finding confirmed Buzan and Buzan's (1993) claim that mind mapping may be employed specifically for vocabulary instruction.

One possible explanation for this finding is that mind mapping assists students in seeing the links of various words in a topic, making it simpler for them to retain and recall. Students can grasp the larger picture and uncover patterns and correlations between distinct concepts by arranging information into a visual map. Another benefit of adopting mind mapping is that it promotes active learning and student participation. Students are actively involved in developing their maps, rather than simply listening to the teacher or reading the textbook, forcing them to think critically and creatively about the content. This form of active learning can improve knowledge retention and transfer.

The current study contributes to the body of knowledge by establishing the efficacy of mind mapping in enhancing vocabulary learning results in non-English major university students.

In conclusion, the current study contributes to the expanding body of evidence supporting the efficacy of mind mapping in enhancing learning outcomes. The findings imply that mind mapping might be a valuable method for boosting vocabulary acquisition among university students who do not major in English. However, further study is required to completely understand the aspects that contribute to mind mapping's efficiency and to better establish the circumstances in which it is most successful.

5. Conclusion

In a nutshell, the findings of the study imply that applying the mind-mapping approach may greatly improve the vocabulary accomplishment of non-English major students. This discovery is significant for language teachers seeking effective teaching ways to assist their students learn vocabulary more effectively. The findings of the study also contribute to the expanding body of research on the efficacy of mind mapping as a teaching aid in language acquisition. More studies might look at the long-term impacts of mind mapping on students' vocabulary mastery and its usefulness with other language skills like speaking and listening. Nonetheless, the current analysis demonstrates the potential of mind mapping as a valuable technique for improving vocabulary success among Dong Nai Technology University non-English major students.

However, it is crucial to emphasize that this study has numerous limitations. First, the sample size was tiny, limiting the generalizability of the findings. Second, the research solely evaluated vocabulary achievement and did not evaluate other components of language acquisition, such as speaking and writing abilities. Future studies might overcome these limitations by testing a broader range of language skills and utilizing a bigger sample size. Furthermore, the research challenges may be expanded to other subjects and situations. Multiple data-collection approaches, such as class observation, focus groups, and case studies, would be beneficial to produce more accurate and dependable results. With such results and recommendations, the current study intends to be useful for future research.

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