USING MIND MAP TECHNIQUES TO IMPROVE ENGLISH VOCABULARY FOR NON-MAJOR STUDENTS AT HANOI OPEN UNIVERSITY

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Abstract: *This study examines the effectiveness of mind map techniques as a productive strategy to improve vocabulary competence among non-major students at Hanoi Open University. Mind maps appear to yield promising results in enhancing language learners' lexical ability by increasing student engagement, providing stimulation, and serving as an effective tool for developing other skills such as speaking, reading, listening, and writing. The research investigates the impact of the mind map approach on students' vocabulary improvement and overall linguistic performance. The data were gathered and processed through tests, questionnaires, and interviews. The findings suggest that mind map activities can significantly improve students' English lexical skills, especially in memorization and usage. In addition, the study features the positive effects of mind maps on students' motivation, involvement, and complete learning experience. The study thoroughly discusses the implications of these findings for English language teaching and learning, highlighting the importance of incorporating mind map strategies into the curriculum to promote effective language development and lexical skills.*

Keywords*: mind map techniques, vocabulary, test, questionnaire, interview, lexical skills, linguistic performance*

I. Introduction

English has been regarded as an essential foreign language for young learners. However, in order to acquire this language, students face several challenges, among which understanding and using vocabulary emerge as a prominent obstacle. Most learners understand the importance of vocabulary. Their efforts to learn English become useless if they do not know words and build their vocabulary. From my perspective as a teacher, this lack of vocabulary stems from their inability to find an appropriate method for learning new words.

Based on careful consideration of the reality of English language teaching and learning at Hanoi Open University, the study was conducted with this orientation to clarify the use of mind map activities to develop the lexical skills of English non-major students at HOU. Specifically, it attempted to:

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- Emphasize the effectiveness that mind map techniques brought to students;

- Investigate the attitude of students when the method of mind map activities is applied in classes.

To do the study, the researcher carried out a review and analysis of the references related to the study, designed questionnaires to conduct surveys of English language teachers' and students' opinions about the use of mind maps in their vocabulary lessons, performed classroom interviews, and conducted tests to get an overview of how mind maps are used in lexical classes and to what extent it can help to improve students' vocabulary performance.

II. Literature Review

In this section, the writer presents academic literature relevant to the research topic, including an introduction to vocabulary, mind mapping, and the advantages of using mind maps to improve students' vocabulary.

2.1. Vocabulary

2.1.1. Definition of vocabulary

As Webster (1994) noted, vocabulary, defined as a list of terms, is frequently used in all walks of life with reference to their definitions. Finocchiaro (1974) also explained that students' vocabulary can be categorized into two types: active and passive vocabulary. Moreover, Scrivener (1994) argued that vocabulary can be seen as a tool for conveying messages to listeners. When students recognize its value, they tend to pay more attention to using it. Vocabulary is closely related to other core language skills, such as writing, which requires recognizing words, understanding their meanings, forms, and syntactic functions, and using them effectively in context (Maden, 2021).

2.1.2. Classification of vocabulary

From Hatch and Brown (1995)'s perspective, word classification is based on functional categories called parts of speech, such as nouns, verbs, adjectives, adverbs, prepositions, conjunctions, and interjections. In addition, Hendrich et al. (1988) noted that vocabulary classification takes various forms: formal (word classes); mechanical (frequency); semantic (relationships between word meanings, such as synonyms and antonyms); and grammatical (grouping words by shared grammatical features).

2.1.3. Types of vocabulary

Vocabulary is classified into major types such as nouns, verbs, adjectives, adverbs, pronouns, prepositions, and conjunctions.

2.2. Mind map techniques

2.2.1. Definition of mind map techniques

Buzab (1993) defined 'mind mapping is a powerful graphic design technique, which provides a universal key to unlocking the potential of the brain'. McGriff (2000) stated that mind mapping is a productive way to help learners sort out their knowledge and grasp the central points and concepts in lectures and other educational material.

2.2.2. Classification of mind mapping

Below are common types of mind maps.

- Tree Mind Map

In this form, the central idea is built like a trunk with big branches that spread out like tree limbs. This common type is useful for organizing knowledge or planning.

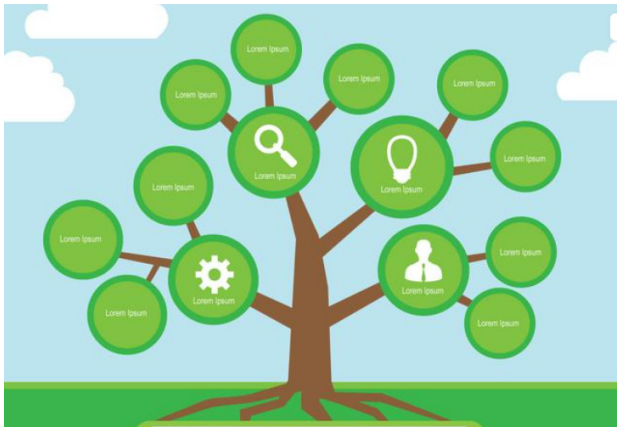


Figure 1. Example of tree mind map

- Network mind map

This type of mind map links ideas and concepts in a hierarchical system. It is good for creative brainstorming.

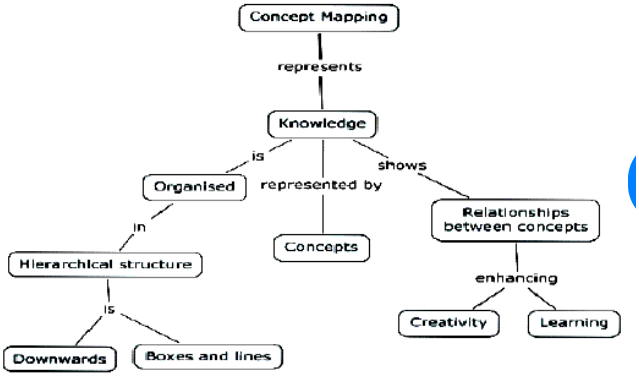


Figure 2. Example of network mind map

- Logic mind map

In this type, information is organized in a logical order, and it is useful for analyzing issues or building arguments.

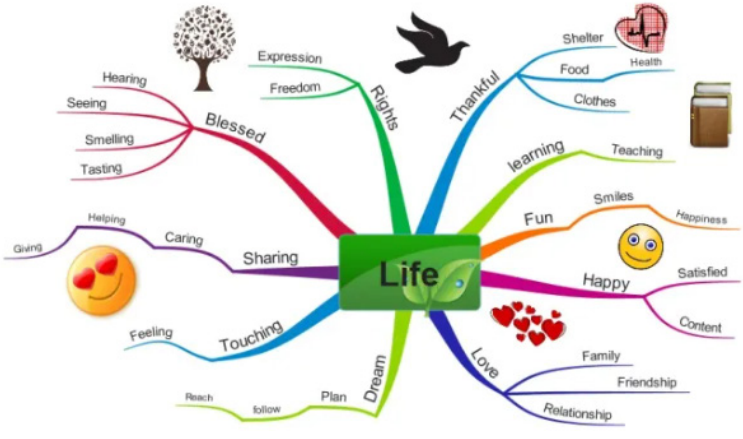


Figure 3. Example of logic mind map

- Picture mind map

This type focuses on using pictures rather than words to present ideas and concepts. This form helps support learners' visual memory.

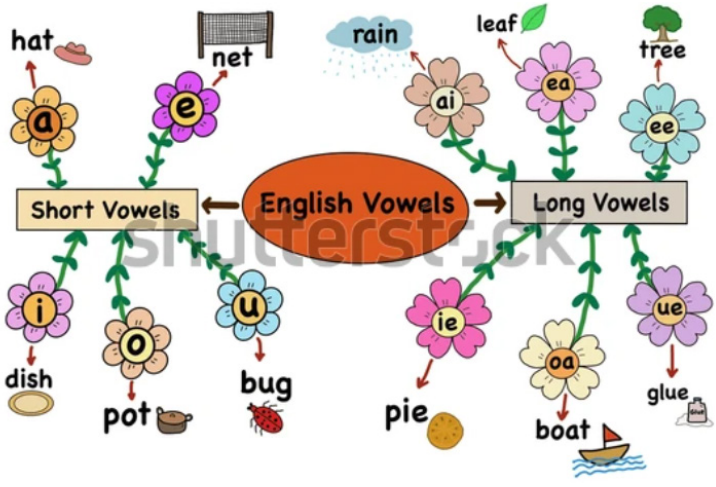


Figure 4. Example of picture mind map

2.2.3. Advantages of using mind map technique in teaching and learning vocabulary

Here are typical advantages of using mind maps in an educational environment, from the viewpoint of De Porter and Hernacki (2008). The first is improving flexibility. Learners can use the mind map technique to generate ideas anytime and anywhere. Second, mind maps help students concentrate on the topic. When the main topic is presented in highlighted form with vibrant letters and images, learners can focus fully without interruption. The next point is improving learners' comprehension. The evidence shows that mind mapping improves students' understanding and helps them absorb knowledge more easily because it presents information in an easy-to-recognize way and avoids confusion. The final advantage is enjoyment. Mind mapping uses pictures, graphic features, and attention-grabbing colors, so learners feel interested and engaged in the learning process.

III. Research methods

At Hanoi Open University, all students in this study are studying the coursebook New Headway 4th Edition, with 3 levels: Elementary, Pre-Intermediate, and Intermediate. This study uses a mix of methodologies to explore how mind mapping can upgrade students' lexical ability. The author uses a combination of quantitative data from tests and interviews and qualitative data from questionnaires to gain deeper insight.

3.1. Participants

The participants are 80 first-year undergraduates in the Faculty of Information Technology, Hanoi Open University. They take a second-level English course in their academic curriculum.

3.2. Data collection instruments

Data for the study were collected through the three main tools: tests, interviews and questionnaires.

Tests

Tests are used for all participants as a pre-test at the beginning of the semester and two post-tests at the end. The pre-test

investigates students' vocabulary stock. The post-tests evaluate improvements in students' lexical abilities after they are taught using mind map activities following the six-week teaching curriculum.

Interviews

Interviews are an effective tool for collecting qualitative data. The researcher designed the student interviews with 3 questions.

Interview for students

*Introduction***:** This interview aims to gather information about using mind mapping to learn vocabulary. Your responses will help us understand the effectiveness of mind maps in enhancing students' vocabulary learning.

Question 1. What do you think about the teacher's mind map technique in teaching vocabulary?

Question 2. What is the effectiveness of the technique for your vocabulary learning?

Question 3. What obstacles may you face when learning with this technique?

Questionnaire

The student questionnaire included 6 statements, as shown in the table below.

Instructions: This questionnaire aims to collect information and opinions about using mind mapping techniques to learn vocabulary. Please tick the appropriate column.

1. How do you find learning new words through the mind mapping technique?

□ highly interested □ interested □ not very interested

2. How do you feel when using mind map for learning new words

□ very anxious □ a bit nervous □ neutral □ confident □ very excited

3. What are the possible benefits of mind mapping technology?

Table 1. Students' opinions about using mind maps in learning vocabulary

	Opinion	1. Strongly agree	2. Agree	3. Disagree	4. Strongly disagree
1.	This technique helps learners learn new words, understand deeper and memorise longer.				
2.	This method stimulates students' teamwork competence.				
3.	This activity encourages my creativity.				
4.	Students can apply new words in real contexts more easily.				
5.	This way is useful to link prior knowledge with new items.				
6.	It is easy to organise ideas systematically.				

3.3. Procedures for data collection

Data were collected over six weeks from second-year English non-major students in the two classes of the 35th course in the Faculty of Information Technology, Hanoi Open University. Data collection was conducted directly in classes through questionnaires, interviews, and pre-tests and post-tests

3.4. Data analysis

The information collected was then analyzed to achieve the outcome of the study, and then had discussions about

it. The data from the student interviews and pre-test and post-test results were statistically analyzed and converted into numbers and percentages, then presented in charts. These figures showed participants' opinions on using mind map activities to enhance their vocabulary learning capacity.

IV. Research results

4.1. Pre-test and post-tests' results and analysis

The table below illustrates the results of the pre-test and post-tests completed by the students.

Table 2. The scores of the pre-test and post-tests

Score	Pre-Test	Post-Test 1	Post-Test 2	Average
Excellent (8.5-10)	5% (4)	13% (10)	16% (13)	
Good (7.0-8.4)	15% (12)	21% (17)	24% (19)	Pre-test: 5.5
Average (5.5-6.9)	36% (29)	45% (36)	47% (38)	Post-test 1: 6.3
Weak (4.0-5.4)	25% (20)	12% (10)	8% (6)	Post test 2: 6.5
Very bad (0.0-4.0)	19% (15)	9% (7)	5% (4)	

The table presents the level of enhancement in vocabulary skills based on the pre-test and post-test results. Significantly, the number of students gaining an average score from 5.5 to 6.9 in the pre-test and post-test both attribute the highest percentage with 36% and 45%, 47% respectively (equivalent to 29 and 36 and 38 students). Noticeably, before using the mind mapping strategy, the number of students ranked poorly on a scale from 0 to 4 had a rate of 19%. This result dropped to 9% in post-test 1 and merely 5% in post-test 2. This suggests that few students used vocabulary poorly after participating in the mind map activities. Additionally, the number of students with weak scores (averages from 4.0 to 5.4) dropped dramatically from 25% (20 students) to 12% (10 students) and 8% (6 students) in the oral tests. The remaining two rankings, excellent and good, progressively rose and reached 16% (13 students) from just 5% (4 students), respectively, in the post-tests. This shows that students' lexical capacity improved significantly after implementing the mind map strategy. Accordingly, this application positively impacts learners' progress in vocabulary skills. This result aligns with Al-Otaibi (2019) and Shi and Tsai (2024), which show that mind mapping has positive impacts and improves vocabulary retention.

4.2. Questionnaire

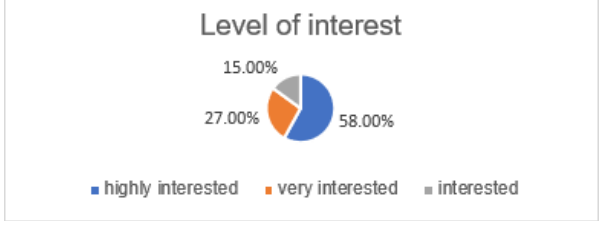


Figure 5. The level of interest in mindmapping activities

From figure 5 below, we can see that a majority of students show interest in this technique. Most of them are highly fascinated by this learning strategy. This number accounts for 58%. Nearly one third (27% of students) express their keen interest in mind mapping activities, meanwhile 15% are interested in this kind of work. None of them chose to be completely uninterested. This shows

that students tend to pay close attention to vocabulary activities when learning foreign languages, as new words are seen as a tool for developing other language skills like reading, writing, speaking, and listening.

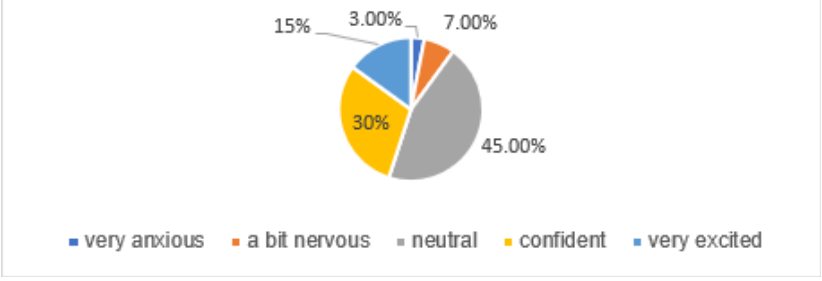


Figure 6. Students' feelings in mind mapping activities

Figure 6 shows how students feel when using mind maps to learn new words. Significantly, nearly half of the students (45%) feel neutral when they apply mind map techniques. At this pre-intermediate level, students are fairly well equipped with an English background and vocabulary-learning strategies. However, a large number of students (30%) feel confident when taking part in this type of activity. This may indicate that this method is easy to apply and becomes familiar to the learners. Surprisingly, only 3% of the students show their anxiety, while 7% feel a bit nervous when employing this methodology in their lexical learning.

The table below demonstrates students' responses to statements concerning the effectiveness of mind mapping activities.

Table 3. Students' comments on group work activities in learning speaking

(1: highly agree; 2: agree; 3: disagree; 4: strongly disagree)

Statements	Opinions	Number of students	%
1. This technique helps learners learn new words, understand more deeply and memorise longer.	1	23	28.7
	2	37	46.2
	3	17	21.2
	4	3	3.7
2. This method stimulates students' teamwork competence.	1	45	53
	2	29	36.2
	3	5	3.7
	4	1	1.2
3. This activity encourages students' creativity	1	33	41.2
	2	38	47.5
	3	9	11.2
	4	0	0
4. Learners can apply new words in real contexts more easily.	1	46	57.5
	2	30	37.5
	3	4	5
	4	1	1.2
5. This way is useful to link prior knowledge with new items.	1	27	33.7
	2	38	47.5
	3	11	13.7
	4	4	5

Statements	Opinions	Number of students	%
6. It is easy to organise ideas systematically.	1	44	55
	2	33	41.2
	3	2	2.5
	4	1	1.2

The starting opinion has an outcome of 28.7% of students who strongly agree that it helps learners learn new words, understand more deeply, and memorize longer. This number is nearly double (46.2%) that say 'agree'. Around a fifth of students (21%) disagree with this statement, while a small number (3.7%) strongly disagree.

Looking at the second viewpoint, more than half of students (53%) strongly believe that the mind mapping technique improves their teamwork skills, while more than a third agree. Only 5 students (3.7% equivalently) hold objective positions, and just one student out of 60 strongly disagrees.

According to the results for the third point of view, surprisingly, nearly half of the students (47.5%) are convinced that mind map activities benefit their creativity; the number of students who strongly agree ranked second at 41.2%. Only 9 students, or 11.2 % feel disapproved, and none of them express strong disagreement.

Looking at the fourth view, the chart shows that 46 students out of 80 (57.5%) strongly agree that the mind map tool enables them to apply new words in real contexts more easily. At the same time, the number of students who say 'agree' is relatively high. This accounts for 37.5%. Furthermore, only 5% of students disagree with this view, while just 1 student (1.2%) is not satisfied with it.

In the next statement, we can see that nearly half of learners (47.5%) agree that mind mapping helps them link prior knowledge with new information. This viewpoint also gets agreement from a third of students (33.7%). 13,7% do not follow this idea, and 5% strongly disagree.

As stated in the last viewpoint, when asked how useful mind map activities are for organizing ideas systematically, 44 out of 80 students (55%) strongly approve. Similarly, 41.2% of students agree with this statement. Only 2 candidates (2.5%) do not trust this idea, whereas 1 student (1.2%) thinks this technique does not work for organizing ideas systematically.

Overall, the mind mapping technique is a great aid in learning for many reasons. Mind maps stimulate creativity and help students generate new ideas. This is because mind maps help learners gain a better overview and connect ideas and thoughts visually. Moreover, this strategy improves memory and helps students remember vocabulary longer and recall it more easily. This view is consistent with Farrand, Hussain, and Hennessey (2002), who found that mind mapping improved long-term memory for factual information. Next, mind maps enhance vocabulary acquisition and allow participants to make connections between words and concepts, facilitating better understanding of contexts. Finally, working on the mind map project allows learners to cooperate. Hence, it encourages their teamwork capacity enthusiastically and effectively.

4.3. Results and analysis from learners' interviews

Interviews were used to collect information for a deeper understanding. In this study, 30 students randomly selected from 2 English classes were interviewed. The interview results are shown in the following table.

Table 4. Students' interview results

Answers	Number of students	Percentage
1. What do you think about the teacher's mind map technique in teaching vocabulary?		
- I see learning by drawing mind map is really interesting and enjoyable. We feel so excited and attentive in class.	23	76
- We can remember new words more easily and don't feel mixed up.	27	90
- It's a great tool for mapping ideas. It makes us think in a structured way to produce ideas.	20	66
- It's fun and effective to work with other members in the class. We can give ideas together and can learn from each other very much. It makes us engaged in our study.	15	50
2. What is the effectiveness of the technique for your vocabulary learning?		
- It helps me understand and use words correctly in a complete sentence	20	66
- New words are categorised into groups, so we can memorise quickly.	24	80
- It gives us a chance to improve our creativity.	18	60
- Mind map tool helps to clarify complex lexical relationships	21	70
- This technique makes us do activities and increases our participation. It turns passive learning into an active process.	25	83
- I can use the words I have learned in listening, reading and writing more accurately and clearly.	17	56
3. What are the possible obstacles you may have when learning with this technique?		
- Mind mapping is sometimes time-consuming and brings not much benefit.	10	33
- When working with the teacher, I feel I lose some information as the ideas on the mind map are far from the topic. And I feel overwhelmed at that time	8	26
- I have no difficulties in using mind map.	28	93

When asked for their opinion on teachers' use of mind maps in teaching vocabulary, the students expressed positive views toward this learning method. Most of them (76% or 23 students) said that they felt really interested in this tool. The class becomes more exciting with activities such as drawing, creating concepts, contributing ideas, coloring, and so on.

This technique seems much more effective and interactive than traditional learning methods. This encourages teamwork skills among students, as shown by 50%.

Moreover, some students (66% or 20 students) said they could produce ideas in a structured way and develop their vocabulary understanding on a larger scale as they were exposed to purposefully linking ideas.

Moving to the next segment, what benefits do students see in using mind maps to learn vocabulary? 83% (25 students) regard this method as a tool that turns passive learning into an active process. Mind mapping turns passive recipients of information into active participants in their learning. Making a mind map requires learners to group, analyze, paraphrase, or summarise the information they have acquired. This deepens their understanding.

It is undeniable that the mind map method improves learners' memory remarkably, as 24 students (80%) confirmed this. The information is presented in a sequential structure, which helps learners retain and memorize it quickly.

Moreover, 70% say mind maps help them clarify complex lexical relationships by organizing ideas in an easy-to-follow way that enables students to simplify complicated word structures.

66% of students confirm that this technique helps them grasp and use words correctly in a complete sentence. Instead of learning new words separately, mind maps help them differentiate parts of speech, such as nouns, verbs, adjectives, and adverbs, and understand their meaning and how they function in a sentence.

More than half of the students (60%) consider mind maps motivating and a way to enhance their creativity and imagination. Creating images, colors, and visuals permits students to express their thoughts uniquely. This gives learners a fresher way to approach a subject.

Many students (56%) evaluate mind maps as an aid for applying the words they have learned in listening, reading, and writing more accurately and clearly.

As for the challenges facing learners, 93% report no worries when using mind maps to learn new words. However, 10 students think mind mapping is time-consuming. Once you get started, it's easy to lose track and overthink information you've already concluded.

Another problem is feeling overwhelmed. 26% of students say they tend to add too much information and are sometimes unsure where to start and where to end the flow of words.

V. Conclusion

At the beginning, the study provides a theoretical background of two issues: mind mapping tool and vocabulary. This research used tests, questionnaires, and interviews as the main data collection instruments. The findings show that implementing mind maps brought benefits for students' vocabulary learning. This strategy increased students' attention and involvement in the task through a variety of mind map activities, which made the lecture more engaging. Also, when students worked together, they had more time to interact, exchange information, and express their creativity. When designing a mind map, various colors and images stimulate the brain, making learning more enjoyable and helping students memorize and recall words more easily and for longer. Additionally, mind maps enrich students' lexical world by introducing a wider range of vocabulary in a logical, structured way. They can also make a practical connection between prior lexical knowledge and new items. Consequently, because mind maps are widely used in vocabulary classes, they are highly beneficial for improving learners' lexical proficiency.

VI. Limitations of the study

Despite the effort put into this research, the study cannot avoid some shortcomings. First, the number of students involved is limited to only 80, which may not represent all students in the university. Therefore, the results may not be sufficiently objective. It would be essential to extend to a larger scale. This would make the results more reliable. Secondly, due to time constraints and inconvenience, the study could not be carried out across all university faculties. This leads to a lack of external validity.

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SỬ DỤNG SƠ ĐỒ TƯ DUY ĐỂ NÂNG CAO VỐN TỪ VỰNG TIẾNG ANH CHO SINH VIÊN KHÔNG CHUYÊN TẠI TRƯỜNG ĐẠI HỌC MỞ HÀ NỘI

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Tóm tắt: *Nghiên cứu này nhằm tìm hiểu chiến lược hiệu quả của kỹ thuật sơ đồ tư duy nhằm nâng cao khả năng từ vựng cho sinh viên không chuyên tại Trường Đại học Mở Hà Nội. Sơ đồ tư duy dường như mang lại hiệu quả khả quan trong việc tăng cường khả năng từ vựng cho người học ngôn ngữ khi kỹ thuật này thúc đẩy sự tham gia của sinh viên, tạo hứng thú khi học và đóng vai trò như một công cụ hiệu quả để giúp sinh viên tiếp thu các kỹ năng khác như Nói, Đọc, Nghe và Viết. Nghiên cứu này cố gắng tìm hiểu tác động của phương pháp sơ đồ tư duy đối với sự cải thiện từ vựng của sinh viên và việc thực hành ngôn ngữ của họ.Dữ liệu nghiên cứu được thu thập và xử lý thông qua các bài kiểm tra, bảng câu hỏi và phỏng vấn. Kết quả thu được cho thấy các hoạt động sơ đồ tư duy có thể cải thiện đáng kể kỹ năng từ vựng của sinh viên, đặc biệt là khả năng ghi nhớ và khả năng sử dụng từ. Thêm vào đó nghiên cứu còn chỉ ra những tác động tích cực của sơ đồ tư duy đối với động lực, sự tham gia và trải nghiệm học tập toàn diện của sinh viên.Ý nghĩa của những phát hiện này đối với việc dạy và học tiếng Anh được thảo luận kỹ lưỡng nhằm nhấn mạnh tầm quan trọng của việc tích hợp phương pháp sơ đồ tư duy vào chương trình giảng dạy nhằm thúc đẩy sự phát triển ngôn ngữ và kỹ năng từ vựng hiệu quả.*

Từ khóa: *kỹ thuật sơ đồ tư duy, từ vựng, bài kiểm tra, bảng câu hỏi, phỏng vấn, kỹ năng từ vựng, thực hành ngôn ngữ*

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