# EFFECTS OF USING SEMANTIC MAPPING ON ESP VOCABULARY RETENTION OF THE STUDENTS AT UNIVERSITY OF TECHNOLOGY –THAI NGUYEN UNIVERSITY

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SUMMARY

The study was an action research in which semantic mapping was applied as a technique in learning English for Specific Purposes vocabulary. The study aimed at evaluating the improvement of students' vocabulary retention after using semantic mapping and collecting students' attitudes towards this technique. The data collection instruments included a semi-structured group interview, Vocabulary Knowledge Scale (VKS) tests considered as two progress tests and a final test, and a questionnaire. The results from the tests proved the effectiveness of using semantic mapping in both short-term and long-term vocabulary retention. The students' positive attitudes towards semantic mapping and their suggestions show that semantic mapping could be applied in a bigger scale.

**Keywords:** *ESP, semantic mapping, vocabulary, vocabulary retention, attitudes*

## INTRODUCTION

### Rationale

During the recent years, English for Specific Purposes (ESP) has become an important subject in most vocational institutes. At Thai Nguyen University of Technology (TNUT), ESP courses are also delivered to students to fulfill their needs of studying English materials relevant to their majors including mechanical, electrical, electronic, civil and environmental engineering.

No one can deny the important part of vocabulary in language acquisition, especially in English, either for general purposes or for specific purposes. Its significance is emphasized by Wilkins (1972) [12]: "without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed". Vocabulary is also considered the key element of ESP according to Robinson (1991) [11].

Therefore, one of the most concerns about ESP teaching at our university is how to help students learn vocabulary better and improve their vocabulary retention. However, being a teacher of English, the researcher has recognized some problems after students finish their ESP course.

The most common problem is that they usually forget what they have learnt, especially vocabulary. That means their vocabulary retention is not good enough and most students still waste a lot of time looking up the meaning of terminologies even though they were delivered during the course. Lacks of vocabulary leads to many difficulties in dealing with their majors because students are required to read many English materials to look for further knowledge. The motivation for the researcher to carry out this study is helping students address their problem in vocabulary retention. Semantic mapping is chosen as a new method in teaching ESP vocabulary. How it improves the students' learning and vocabulary retention is what the researcher wants to find out after the study is finished. All the above-mentioned reasons inspired the researcher to conduct an action research titled "*Effects of using semantic mapping on ESP vocabulary retention of students at Thai Nguyen University of Technology*".

### Objective and research questions of the study

The objective of the study is to explore effectiveness of semantic mapping in improving students' ESP vocabulary retention

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and their attitudes to the applied semantic mapping. To achieve the objective, the study needs to answer two research questions:

Research question 1: To what extent does semantic mapping help students improve their ESP vocabulary retention?

Research question 2: What are the students' attitudes towards semantic mapping and their suggestions for future teaching and learning?

LITERATURE REVIEW

**Vocabulary and its role in learning English for Specific Purposes**

According to the Longman Dictionary of Contemporary English (1978) [10], vocabulary is defined as all the words that someone knows or uses. Hornby (2000:1331) [6] stated that vocabulary is "a list of words in a language with their meaning and it is a total number of words which (with rules of combining them) make up a language." Al-Kufaishi (1988:42) [1] indicated that "vocabulary is a vehicle of thought, self-expression, interpretation and communication."

A good mastery of vocabulary is essential for learners, especially for those who learn English for Specific Purposes. "It is to direct vocabulary learning to more specialized areas when learners have mastered the 2000-3000 words of general usefulness in English" (Nation, 2001: 87)[9].

**Challenges in vocabulary learning**

Many ESP teachers have found that vocabulary can be one of the major problems that affect student's understanding of scientific and technical texts. The difficulties that they encounter not only lie in technical but also semi-technical terms and sometimes even non-technical ones. As English words often more than one meaning, students would feel confused if they find some general words in a technical text but they do not understand their meanings. According to Kennedy and Bolitho (1984:58) [8], "Examples of such words are *cycle* (cf. its use in *the carbon cycle* or *a cycle of electricity*), *conductor*(in electricity), and *resistance* (in an electrical circuit)."

However, the most important factor causing difficulties for students in their ESP learning is they have problems in vocabulary retention which is clearly shown in the next part.

**Retention and memory**

Retention is defined as "an ability to remember things" according to Hornby (2000:1297) [6]. For the purpose of this study, vocabulary retention can be clarified as "the storage of vocabulary in the memory, which becomes available for use when needed".

**Semantic mapping as a strategy to improve vocabulary retention**

According to Baleghizadeh and Naeim (2011) [2], "semantic mapping falls under the general category of graphic organizers and is used in different subjects areas in order to help learners understand the relationships and form concepts about broader topics". The basis of semantic mapping is the relationship among its elements (here, the words). Once this relationship is established, the learners will remember them more easily.

**The Action Research method**

Action research is identified with three main characteristics, namely "carried out by practitioners", "collaborative" and "aimed at changing things" by Kemmis and McTaggart (1988) [7].

The research model employed in the study is described in the figure below.

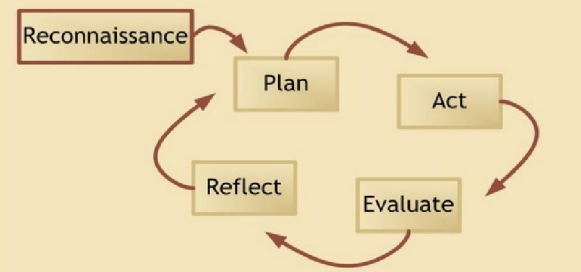


**Figure 1.** *An action research cycle*

*(Adapted from [4])*

METHODOLOGY

**Participants**

The subjects of this study were twenty-two students aging from twenty to twenty three, twenty boys and two girls. They all finish General English courses and most of them are third year students.

The practitioner and the researcher at the same time was responsible for the design and implementation of the semantic mapping in teaching ESP vocabulary, and later collecting and analyzing the data.

**The material**

All the vocabulary being taught in this course was taken from the book titled: "Oxford English for Electrical and Mechanical Engineering" by Eric H. Glendinning and Norman Glendinning (Oxford University Press, 1995) [5].

**Data collection instruments**

This study used three tests in the format of Vocabulary Knowledge Scale (VKS) tests which served as two progress tests, a final test to collect data.

Questionnaire was also another instrument for collecting data in this study. In the words of Brown (2000), cited in Dörnyei (2003) [3], questionnaires are "any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers of selecting from among existing answers". This makes questionnaire data was particularly appropriated to quantitative, statistical analysis.

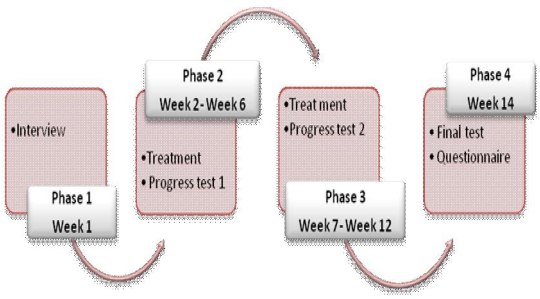


**Figure 2.** *The data collection procedure*

**Data collection procedures**

Figure 2 illustrates the procedures of collecting data for the study.

RESULTS AND DISCUSSIONS

**Research question 1: To what extent does semantic mapping help the students improve their ESP vocabulary retention?**

After identifying the problems, the researcher carried out thetreatment as the next step in the action research cycle: intervention. After each phase, a progress test was administered to check students' short-term retention.

To assess the improvement of students' vocabulary retention, the researcher would present the result of each test, compare the results between the first progress test and the second one, then compare the final test (the delayed post-test), and finally compare the three tests with each other.

Two paired-samples t-tests were conducted using Statistical Package for the Social Sciences (SPSS) version 20. The first was to compare the score gained from the progress test 1 and progress test 2 while the second was to compare the progress test 2 and the final test. Looking at the confidence intervals, we see that the 95% confidience interval for the mean difference between the progress test 1 and 2, and the progress 2 and the final test is respectively -.92 &-.63 and -.44&-.19. The mean differences of the two pairs are respectively -.77 and -.32, which show that the students have made improvements after the two intervals.

In conclusion, the comparison between the progress test 1 & the progress test 2 andthe progress test 2 &the final test has proved the improvement of students' vocabulary retention. This improvement was not only for a short term (during the course and right after the course) but it could stay stably for a long term (two weeks after the treatment) for almost all the students (18/22 students).This proved the effectiveness of introducing and implementing semantic mapping as a technique for remembering in teaching and learning ESP vocabulary.

**Table 1.** *Output from the paired samples t-test*

| | | Paired Differences | | | | |
|---|---|---|---|---|---|---|
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference Lower | Upper |
| Pair 1 | Progresstest1 - Porgresstest2 | -.77818 | .32840 | .07001 | -.92378 | -.63258 |
| Pair 2 | Porgresstest2 – Finaltest | -.32273 | .27715 | .05909 | -.44561 | -.19985 |

**Research question 2: What are the students' attitudes towards semantic mapping and their suggestions for future teaching and learning?**

To find the answer to the second research question, the researcher delivered a questionnaire to all students after they finished the final test. Results from this questionnaire are described as follows:

***Students' attitudes towards semantic mapping***

In terms of the students' attitudes towards semantic mapping, the researcher focused on three main aspects: the importance, its effectiveness and the pleasure that it could give to students while learning, as perceived by students themselves. Firstly, the students' evaluation of the importance of semantic mapping was illustrated as follows:

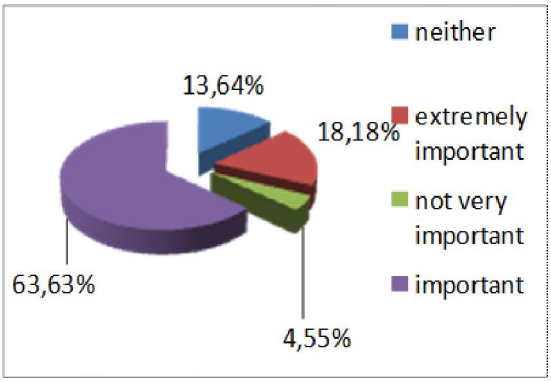


**Figure 3.** *Importance of semantic mapping*

As can be seen from the above figure, the majority of the students accessed semantic mapping as important (63.63%) and extremely important (18.18 %) whereas 13.64% of them are not sure whether semantic mapping is important for them or not. Only one student (4.55%) gave mark 2 (semantic mapping is not very important). None among 22 students gave mark 1, which means no one evaluated the treatment of using semantic mapping while learning ESP vocabulary as being unimportant at all.

Secondly, after collecting all the students' ideas about the effectiveness of semantic mapping, the researcher presented it under the figure 4.

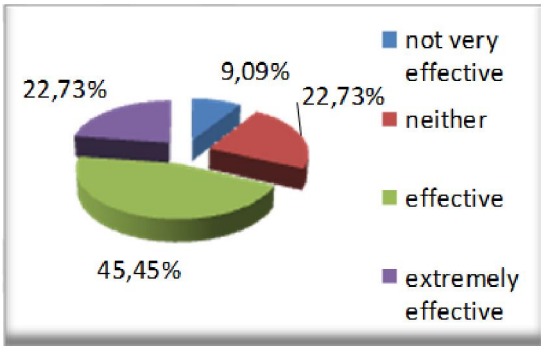


**Figure 4.** *Effectiveness of semantic mapping*

The above pie-chart indicates how effectively students assessed the using of semantic mapping in learning ESP vocabulary. 45.45% of the students thought that semantic mapping was effective and it is very happy that 22.73% of them showed high appreciation to the treatment. However, the same amount of students (22.73%) did not give any clear opinion about the effectiveness of the treatment. Only 9.09 % of the students gave mark 2 when evaluating the scheme, which means only 2 among 22 students regarded semantic mapping as having comparatively limited effectiveness to him/ her.

When mentioning about the pleasure that students could gain while using semantic mapping to learn vocabulary, the results

revealed that almost of the students found it interesting and enthusiastic. This could be illustrated by the following chart:

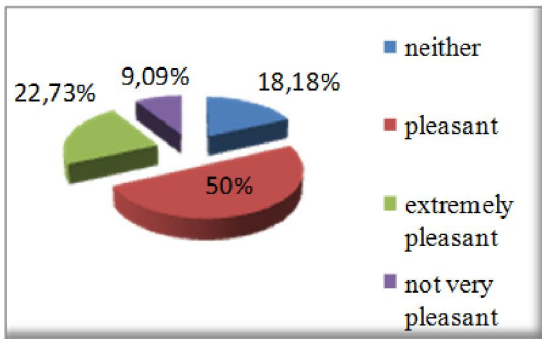


**Figure 5.** *Pleasure when using semantic mapping*

The number of students who felt comfortable and being motivated when learning vocabulary using semantic mapping was 72.73% (22.73% highly appreciated and half of the students (50%) liked them).

In short, through the first part of the questionnaire with three small questions about how students evaluated the using of semantic mapping, in general, the students highly appreciated and gave positive opinions to the treatment.

## CONCLUSION

The teacher, also the researcher, conducted a teaching plan in which she introduced and applied semantic mapping as a vocabulary learning technique. During the course, two progress tests were given to students to check their improvement in vocabulary retention. The results from these two tests showed a significant increase in short-term retention for all students. A final test was conducted two weeks after the end of the course revealed the improvement for long-term retention of 18/22 students, which is a rather remarkable sign of better retrieval.

The findings from the questionnaire indicated students' positive attitudes towards semantic mapping. Almost all the students could see the importance of semantic mapping and found it comfortable when learning ESP vocabulary with semantic mapping.

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TÓM TẮT

# NHỮNG TÁC ĐỘNG CỦA VIỆC SỬ DỤNG SƠ ĐỒ NGỮ NGHĨA ĐỐI VỚI KHẢ NĂNG GHI NHỚ TỪ VỰNG TIẾNG ANH CHUYÊN NGÀNH CỦA SINH VIÊN TRƯỜNG ĐẠI HỌC KỸ THUẬT CÔNG NGHIỆP – ĐẠI HỌC THÁI NGUYÊN

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Nghiên cứu này là một nghiên cứu hành động trong đó sơ đồ ngữ nghĩa được áp dụng như một phương pháp để học từ vựng tiếng Anh chuyên ngành. Mục đích của nghiên cứu này là đánh giá sự cải thiện về khả năng ghi nhớ từ vựng của sinh viên sau khi sử dụng sơ đồ ngữ nghĩa; tìm hiểu về thái độ của sinh viên với phương pháp học từ vựng này. Các công cụ thu thập dữ liệu cho nghiên cứu bao gồm phỏng vấn bán cấu trúc cho cả nhóm sinh viên, các bài kiểm tra từ vựng, và một bảng câu hỏi điều tra. Kết quả từ các bài kiểm tra cho thấy tính hiệu quả của sơ đồ ngữ nghĩa trong việc ghi nhớ từ vựng cả ngắn hạn và dài hạn. Thái độ tích cực đối với sơ đồ ngữ nghĩa cùng với các gợi ý của sinh viên cho thấy rằng sơ đồ ngữ nghĩa có thể áp dụng trên một quy mô lớn hơn.
**Từ khóa:***Tiếng Anh chuyên ngành, sơ đồ ngữ nghĩa, từ vựng, khả năng ghi nhớ từ vựng, thái độ*

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