



The Effectiveness of Semantic Mapping Strategy on Vocabulary Achievement of EFL Saudi Female Preparatory-Year Students

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Abstract

The purpose of this study was to investigate whether applying semantic mapping strategy to teach new vocabulary for preparatory-year EFL Saudi female students was useful on reading texts. To achieve the purpose of this paper, the study attempted to provide answers to two research questions: *How does the use of semantic mapping in teaching vocabulary affect EFL female Preparatory-year students' learning of new reading texts? Which types of semantic maps are effective in teaching vocabulary based-reading material?* The study participants were forty students divided into two groups: control and experimental group. The control group received a traditional instruction of vocabulary whereas the experimental group was taught through using five different types of the semantic mapping strategy, namely, concept categories map, hierarchical organization map, compare- contrast map, definition, description, example map and fishbone map. Both groups were tested before and after the experiment. Additionally, the experimental group was given a questionnaire to evaluate the five types of semantic mapping strategy. The results of the study indicated that semantic mapping strategies had a positive impact on students' vocabulary performance and reading. Moreover, concept- categories maps were regarded to be the best type of semantic mapping strategies preferred by students, followed by compare- contrast map. Finally, the questionnaire findings reflected students' positive attitudes towards using semantic mapping strategies with all its different types.

Keywords: EFL Saudi students, semantic mapping, English vocabulary

INTRODUCTION

This paper attempts to explore whether applying semantic mapping strategy to teach new vocabulary for preparatory-year EFL Saudi female students was effective in English reading classes. The question of which vocabulary to be taught during the reading class has been raised by several studies in the field of language teaching. MacCarten (2007)

suggested that the use of frequency lists would be helpful for teachers to choose the vocabulary items when following a particular order to teach them. Frequency lists are used in teaching reading as the teacher wants only the least frequent words. Hiebert & Kamil (2005) highlighted the idea of importance and utility in teaching vocabulary based reading texts. "Only words which are of some importance to learners are presented in the reading class" (p.12).

Vocabulary instruction is associated with the use of long-term memory as emphasized by Schmitt (2000). To foster vocabulary acquisition in the long-term memory, teachers and language researchers attempted several strategies of teaching vocabulary to students in reading classes. Among these strategies is the use of semantic mapping in teaching vocabulary. The strategy has some teaching privileges as it helps learners to categorize words in the reading text through visualization (Duffy, 2009). (Bear *et al.*, 1996) emphasizes the importance of the strategy as it prompts learners to activate their schemata when learning highly specialized vocabulary in different disciplines such as medicine.

Vocabulary association to the reading classes has been raised by researchers in the field of language teaching MacCarten (2007). Therefore, vocabulary integration into meaningful context through reading texts can enhance better learning outcomes of both reading and vocabulary (Nagy, 2005). According to Rivers 1981), most of the words are introduced through reading texts. Thus, Nunan (1989) supported this notion by confirming that readers depend on vocabulary existing in their mental structures while reading.

Finally, the whole discussion on vocabulary instruction and its connection to reading texts has come to the attention of the researchers of the current study. They, as teachers and educators in Saudi academic institutions, believe that vocabulary instruction has not been given yet sufficient attention in the Saudi context. Either it is taught as a part of reading comprehension passages with a few drill and practice exercises, or it is neglected at all. Therefore, the specific objectives of this study have come to address the effectiveness of integrating innovative vocabulary strategies on EFL Saudi female students' reading performance, besides investigating the learners' attitudes towards the semantic mapping, which is a strategy of novelty in the Saudi context.

LITERATURE REVIEW

The study investigates the effectiveness of semantic mapping strategies for improving EFL Saudi female preparatory students' performance in vocabulary learning. It also examines how these strategies may enhance their reading ability in different disciplines of university textbooks. This part presents the research related to semantic mapping and its connection to vocabulary and learning to read.

Semantic mapping is a strategy used in teaching vocabulary in a language classroom. Mah (2011) noted that Hanf (1971) was the pioneer who led to the developing of SM. This strategy is also known as mind mapping. In addition, the color map which Buzan

(1993) invented was called mind mapping. The SM strategy depends on relating new ideas to students' prior knowledge. The purpose of SM is to give students the ability to use their prior knowledge formally and establish a basis for what they will learn and read (Gouveia, 2004). According to Buis (2004), SM is a valuable strategy that helps ESL/EFL learners in reading and writing. Moreover, it enhances their interests in vocabulary learning. As well as it makes them "feel connected to the words they read" (Buis, 2004, P 20).

A study was conducted by Al-Ghazo (2015) to examine the effect of two vocabulary strategies on reading comprehension. She investigated the effect of SQ3R and semantic mapping on reading comprehension. Sixty students studying in Ajloun National University at Jordan were divided into two groups: control and experimental group. Both groups were little proficient in English and took a pre and a posttest. The results of the study showed a positive effect of the two strategies on teaching reading comprehension.

Omar (2015) conducted a study to find a method to enhance students' reading proficiency. He tried to investigate the effect of computer-based concept mapping on students' reading ability and comprehension. Twenty-five male students who registered for an EFL course at Umm- Alqura University participated in this study. The data were collected through a pretest, a posttest, and a questionnaire. The results of this experiment revealed that the use of computer-based concept mapping had a positive impact on students' reading proficiency and comprehension. Moreover, the researcher noted that "students showed a positive attitude towards using concept mapping to facilitate not only the reading skill but all language skills, as well" (p.1).

Sabbah (2015) investigated the effect of college students' self-generated digital mind maps on the reading comprehension. The researcher observed the inability of the foundation level students in achieving the aims of learning to read. Students were divided into two groups. A pre and posttests were administered to the students. Additionally, a questionnaire was given to the students. The results showed that the experimental group was affected positively by the treatment. Thus, the researcher recommended that "teachers should include questions that demonstrate the relationships among ideas and sub- ideas and implement computer assisted mind maps in the classroom" (p.23). Furthermore, students expressed enthusiasm about using self-generated digital mind maps. The researchers noted that students enjoyed using this strategy as they revealed that they saw it as "interactive game." She added that "using mind mapping as a group technique was right to students' cooperation" (p.24).

In Saudi Arabia context, Abdelrahman (2013) investigated the effect of semantic mapping as an instructional strategy for teaching vocabulary to EFL students. Fifty male students studying at Al-Imam Mohammad Ibn Saud Islamic University were divided into two groups. The experimental group was taught through using semantic mapping strategy. Four different types of maps were used to show lexical items for students in the experimental group including thematic maps, spider maps, problem and solution maps and fishbone maps. After ten sessions of treatment, a post test was given to both

groups. The result showed a positive effect of using semantic mapping better than employing traditional vocabulary teaching techniques. He noted that cooperative learning played a key role in vocabulary instruction.

Different from Abdelrahman (2013), Al-Otaibi, G (2016) used computer-assisted semantic mapping (CASM) on nursing students to map medical passages for helping such students in reading comprehension of medical texts. The students in such a group experienced problems in understanding the medical reading material. The subjects of the study were placed in control and experimental groups. Each group had 26 students. The control group was instructed traditionally by using the textbook. The experimental group (n = 32) received a combination of traditional in-class instruction and semantic mapping (SM). They were instructed through using software (FreeMind 0.8.1). A pre- and posttest were administered to gauge students' reading ability before and after the treatment, which lasted for eight weeks. The results revealed that SM was ineffective in improving students' reading comprehension due to the program's incapability of reinforcing reading comprehension. Moreover, the results showed that the participants lacked the necessary background knowledge that might help them infer and comprehend.

Hateman (2013) investigated the role of semantic mapping strategy and RAP (READING, ASKING and PUTTING the main idea) in two high schools. A proficiency test was administered to check the homogeneity of the participants. The study repeated a measured design with altering treatments. The participants were categorized into four groups (two from EL "English Learners" with LD "Learning Disabilities" and the other from FEP "Fully English Proficient" with LD). The first group of each two different groups was taught with traditional instruction followed by RAP. The other groups were trained with traditional instruction followed by semantic mapping. The results revealed that EL with LD who were taught with traditional instruction and followed by RAP gained significant improvement in reading comprehension, unlike FEP with LD group. Additionally, EL with LD was able to remember steps associated with RAP rather than that of semantic mapping. On the other hand, FEP with LD who were taught with semantic mapping after traditional instruction gained better results in reading comprehension, and they were able to remember steps associated with semantic mapping rather than that of RAP strategy.

Zahedi and Abdi (2012) compared the effect of semantic mapping strategy on forty Iranian learners of vocabulary mastery with direct translation approach. The participants were divided into two groups: control and experimental groups. The groups learned new words from the same source book, but with different strategies; unlike the control group who learned the new vocabulary with direct translation method, the experimental group was exposed to semantic mapping. The two groups sat for pre and post vocabulary tests. The results of their study indicated significantly significant differences between the two groups in the posttest. The mean score for the experimental and the control group was 22.750 & 17.850, respectively.

The study concluded there was a close association between "vocabulary learning strategy and better words retention"(P. 2278).

Asadollahfam & Shiri (2012) investigated the effect of eight types of semantic maps on reading comprehension. The eight semantic maps included "descriptive map, network tree, spider map, problem- solution map, fishbone map, compare & contrast map, series of event chain map and mind map" (p.97). Sixty female intermediate students participated in this study. They were homogenous in English proficiency as they passed the proficiency test (Shiraz University Placement Test) and scored 120 to 140 in the test. Students were divided into two groups: control and experimental group. The materials included 20 expository reading passages from different books. The experimental group was given an explicit introduction to using semantic mapping. The control group was taught using the grammar translation method. Both groups were tested on a pre and post online- tests. The result of the post-test showed a positive effect of using semantic mapping in teaching reading. The result of the tests also revealed that compare & contrast map and problem- solution maps were different from the other types of those two categories that required more time and efforts, as well as students, did not benefit from them. Moreover, these two maps proved to take more time in processing texts.

Almuhalell (2012) investigated how Collocational Mind Mapping (CMM) improved Saudi students' English vocabulary. She interviewed ten Saudi female students who were studying at Princess Norah bin Abdulrahman University at Riyadh before and after a training course. Those students were given a training session on how to use mind mapping in learning vocabulary. Besides, a questionnaire about their attitude toward collocational mind mapping to learn new vocabulary was piloted to the students. The findings of the study showed a positive attitude of students toward using CMM. Besides, the strategy proved to reduce students' errors and enhance their recalling ability. She added that students showed a high motivation toward using CMM in learning new vocabulary.

May (1994) asserted that "dictionaries are traditionally designed as memory refreshers; their format is not intended to teach"(p.219). However, some factors may affect the success of using semantic mapping strategy. Khoii & Sharififar (2013) noted that" the amount of students' attention and engagement in classroom discussion related to the semantic mapping and their strategy for vocabulary acquisition and learning may influence the success of this strategy" (p.207). Thus, semantic mapping approach contributes to creating proficient readers by helping them establish a relationship between different lexical items (Broughton *et al.*, 1980). With semantic mapping, learners can organize words in meaningful manners that expand their words knowledge and strengthen their ability of reading (Sokmen, 1992).

According to above-presented studies, it is clear that few studies in Saudi Arabia have investigated the role of SM in teaching vocabulary for EFL students at university level. Besides, researchers have not studied the types of semantic maps extensively. The present study will attempt to explore the effect of SM on EFL female preparatory year

students' performance with regards to vocabulary existing in their reading texts. It will also investigate students' attitudes towards five different types of semantic maps including concept categories map, hierarchical organization map, definition - description - example map, compare and contrast map and fishbone map.

Furthermore, the current study goes in line with other studies conducted on semantic mapping concerning Saudi EFL context (Siddiqi, 2007; Al-Jarf, 2009; Almuhailel, 2012; Abdelrahman, 2013). All these studies have attempted to explain the idea of using semantic mapping. They reflected varying results ranging from positive and negative effects of using the strategy in teaching vocabulary for Saudi EFL learners. However, these studies have been conducted on teaching vocabulary to students specializing in English, while the current study is targeting a different group of EFL female Saudi students who are joining the preparatory-year program in various majors.

RESEARCH PROBLEM AND SIGNIFICANCE

Vocabulary learning has sometimes become an obstacle for EFL learners involved in university scientific programs (Bennett, 2006). According to the researchers' classroom observations, Saudi students have encountered this problem in their endeavor to learn the English vocabulary. Therefore, the present study is conducted in an attempt to solve EFL Saudi female students' problems through teaching them the semantic mapping method as an innovative strategy that may improve the learners' vocabulary in English reading classes. In particular, the study will contribute to enhance the vocabulary learning of the preparatory-year students who learn English for specific purposes (ESP), and who will graduate as doctors, scientists, engineers, and nurses. Moreover, the present study will raise the Saudi learners' awareness of the types of semantic mapping, and it will investigate the students' preferences of which category will help them better learn the vocabulary of reading texts of each subject area they are studying, i.e., medicine, pharmacy, social sciences, etc.

Research Questions

In the view of the research problem, the study attempts to answer the following two research questions:

1. How does the use of semantic mapping in teaching vocabulary affect EFL female Preparatory-Year students' learning of new reading text?
2. Which types of semantic maps are more effective in teaching vocabulary based-reading material?

METHOD

Research Design

The present study is a quantitative study as it investigates the effect of semantic mapping strategy on EFL female preparatory year students' vocabulary performance through reading texts. Moreover, it used a descriptive design in the form of a survey to

investigate students' attitudes toward particular types of semantic maps. The researchers developed a pre- post vocabulary test (Appendix 1) and a semantic mapping attitude survey (Appendix 2) to collect the data.

Participants

The participants of this study were forty female students at the preparatory year at Taibah University in Madinah, Saudi Arabia. The study was conducted during the second semester of the academic year 1436-37 A.H. (2015/16). Participants were all middle proficient in English. Their median age is 19. They were students at the preparatory year, which was the first year before they specialized in a particular field including medicine, dentistry, pharmaceuticals, computer science, biology, chemistry, physics, and mathematics. The subjects were divided into two groups: control (N= 20) and an experimental group (N=20). They were randomly assigned to the two groups.

Students' level of proficiency in English was determined by a placement test provided to them by Taibah University. All students took a placement test in the first week of the academic year. Subsequently, they were assigned to high, upper intermediate and low intermediate level. Participants in the present study were all from lower intermediate level according to their grades on the placement test. Thus, homogeneity of students' level of English was assured before the experiment.

Material

Materials used to conduct the study consisted of a questionnaire (Appendix 2), Vocabulary Pre-Post Tests Appendix 1), and seven reading texts.

The questionnaire (Appendix 2) was developed by the researchers to elicit students' attitudes toward different types of semantic mapping strategy. After reviewing the literature of some studies such as Alotibi (2016), Bennett (2006) and Sabbah (2015), the researchers designed the first version of the questionnaire consisting of eighteen items. However, some of them were adopted by other researchers, and they were modified to match the research purpose. For instance, items (2, 3 and 8) were chosen from Alotibi (2016, p.141). Items (9, 11 and 12) were adopted from Sabbah (2015, p.19). After getting its validity by submitting it to some experienced professors in language teaching, the second and last draft of the questionnaire consisting of twelve items was presented to the participants of the experimental group in English and Arabic versions. A Five- Point Likert Scale type questionnaire was designed to investigate the best type of semantic mapping. Students were asked to answer each item in the questionnaire by giving numbers for the strategies next to it. There are five responses according to Likert scale that varies from *strongly agree*, *agree*, *neutral*, *disagree* to *disagree* (Dörnyei, 2007, p.105) strongly.

In the designed questionnaire, the researchers asked the participants to organize the strategies by responding to each item using a five- point Likert scale. To make sure that students were able to answer the questionnaire and understand the different five types of semantic mapping strategies, an explanation paper (Appendix3) was given to each

student, and they were asked to read it thoroughly. Besides, the researchers gave a brief explanation about the different types of semantic mapping strategies and the form of the questionnaire.

The reliability of the questionnaire about students' attitude toward different types of semantic mapping strategy was established by calculating the correlation between items and using Cronbach's alpha, which was measured with the value of (0.515), and thus it was considered reliable.

For the Vocabulary Pre-Post Tests, the control and the experimental groups were given the pre- test (Appendix 1) to ensure there was homogeneity in their level of vocabulary, and to make sure that the vocabulary items were new to them. The pre vocabulary test was designed to match the students' textbook exercises to ensure students' familiarity with them. The test contained multiple choice questions and matching the underlined words in the sentences with their right definitions. Before the test, students were informed that they would be tested for this research, and only the researchers of the current study would use the results.

The control and experimental groups were given the posttest, which was the same of the pretest at the end of the experiment. The reason for retesting them was to collect information about the two groups' vocabulary performances after the experiment. The post vocabulary test was given to the experimental group to find the impact of semantic mapping strategy on their vocabulary performance. The pre-post vocabulary tests (Appendix 1) were designed after making modifications on the vocabulary. Huges (2003) notes that all the vocabulary that is being presented to students should be included in the test. Thus, the vocabulary items in the pre-post vocabulary tests were taken from a list designed by the researchers, based on students' reading book.

The reliability and validity of the pre-and post-tests were measured. The reliability of the vocabulary test was established by using the test- retest reliability and Cronbach's Alpha, which was measured with the value of (0.907). The validity was determined by submitting the test to four professors experienced in language teaching to judge its validity (Appendix 4). They approved that the test had content as well as face validity. The test looks as "it measures what it was supposed to measure" that it obtained face validity (Huges, 2003, p. 33). Hence, it can be said that the pre-post vocabulary tests had face validity.

The reading material consisted of seven reading texts taken from the students' reading and writing book assigned to them by the university. The book *"Reading and writing"* by Gramer& Ward (2012) consisted of ten units. Each unit contained two reading texts, a writing exercise, some vocabulary drills, grammar rules explanation, and exercises. Students were required to study three books from the same series. The chosen book was level three in the series, which students usually took in the last third of the second semester. The book content was designed to give students exposure to the academic texts, skills, and vocabulary. Each reading text was preceded by new vocabulary explanation and exercises including, fill in blank from specific vocabulary and match

words with their definition. Furthermore, each reading text was followed with reading comprehension exercises. The researchers chose only seven reading texts from the students' book *"Reading and writing"* by Gramer & Ward (2012) namely, "How to make a strong first impression", "Job interviews 101", "Knowing your tastes", "Finding balance in food", "Practice makes...pain?", "Cars that think" and "The biology of altruism."

Procedures and Data Collection

After taking the permission from the Deanery of Educational service, the researchers started preparing the experiment along with the help of the English language center in Taibah University. Two groups consisting of 40 students were assigned to the researchers for testing the students. The participants were randomly placed into two groups: control (N=20) and experimental group (N=20). The experiment lasted for three weeks from March, 27th until April, 14th. The researchers taught the two groups for three weeks along with the help of two experienced teachers who were responsible for teaching the chosen groups. The participants in each group met the researchers in three sessions in each week. Each session lasted for forty minutes and was divided into three phases: introductory phase, the vocabulary instruction phase, and the activities phase.

The First Phase

The introductory phase of each session was the same for the two groups. In each session, students were introduced to the new text with a brief explanation. Then, they were asked to read the text silently and underline the challenging and new vocabulary. These steps were followed in each session for the two groups during the experiment.

The Second Phase

The vocabulary instruction phase consisted of different teaching strategies for both groups. The control group was asked about the difficult vocabulary. Then, they received a traditional explanation for the vocabulary including paraphrasing, giving examples, and using mimes or pictures. This procedure was followed for all the reading texts.

On the other hand, the experimental group received another teaching strategy for explaining the new vocabulary which was semantic mapping. The new words were introduced first using paraphrasing, giving examples or using mimes or pictures. After identifying the new vocabulary, the teacher paraphrased those using different semantic maps. Five different types of semantic maps were used to explain the new vocabulary of the course as shown in the figures below. In each week, specific types were introduced to the participants in the experimental group. For instance, in the first week, two semantic maps were presented to students, namely concept categories map (Figure 1) and hierarchical organization map (Figure 2), adapted from Alber (2010, p.43). Students were encouraged to use prior knowledge to fill in the maps. The first two types were introduced in the first week of the experiment. For each new word, the teacher drew a map on the board that consisted of a new word as a concept word, and the students

were asked to generate words. The students have been invited to think about kinds of the concept word to fill in the concept categories map.

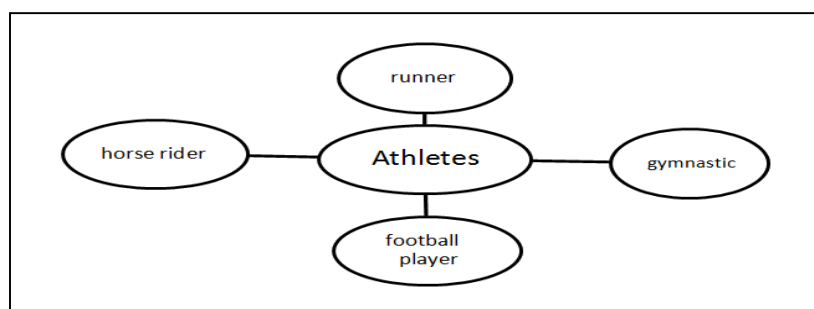


Figure 1. A semantic map using concept-categories type.

While the hierarchical organization map (Figure 2) was filled with any vocabulary items, students generated them and related each to the concept word. Each word in the hierarchical organization map could lead to more vocabulary that could enrich the hierarchy of the map.

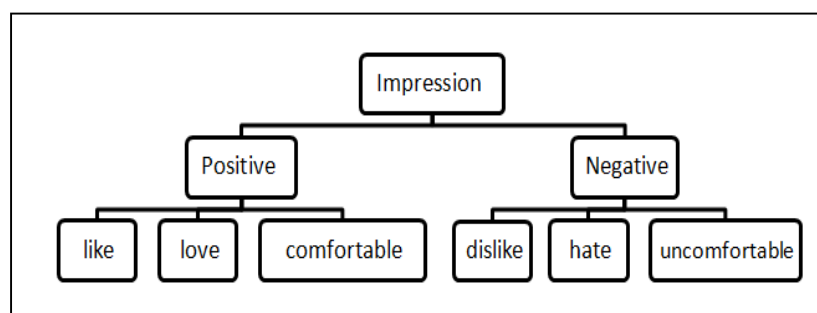


Figure 2. A semantic map using hierarchical organization type.

In the second week, students were introduced to another two types: compare- contrast map (Figure 3) adapted from Asadollahfam & Shiri (2012) definition- description, and example map (Figure 4), adapted from Alber (2010). Two words were introduced in the compare- contrast map. Students were encouraged to use their previous experiences and knowledge to compare and contrast the new words.

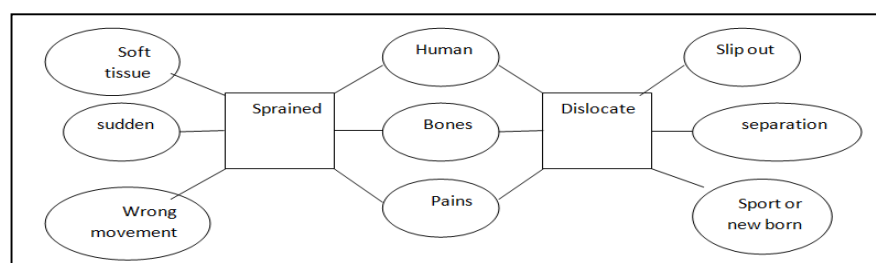


Figure 3. A semantic map using compare-contrast type.

In definition-description, and example map (Figure 3-4), the teacher selected a new word, explained it using paraphrasing, pictures or mimes, then, she asked the students to describe them. After knowing its meaning and usage, students offered a definition of the word using their own made definition without using any dictionary. Afterward, an

example of the word in context was generated and written in the example section of the map. Moreover, the teacher used the previous maps that were introduced in the first week along with the new types.

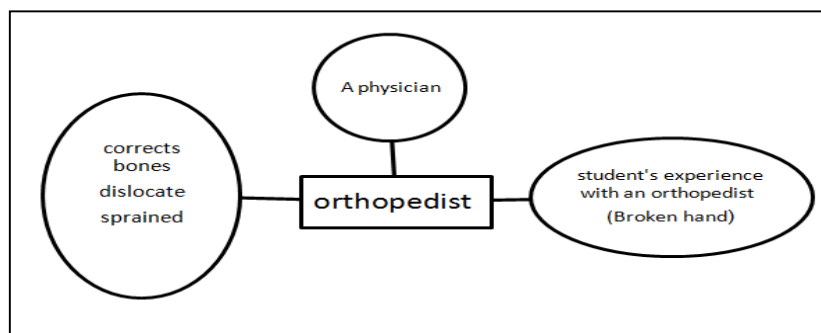


Figure 4. A semantic map using definition, description, example type.

The third week was the last week of the experiment, and for that reason only, one map was introduced to students namely, fishbone map (Figure 5) adapted from Asadollahfam & Shiri (2012) and (Abdelrahman, 2013). In this type of maps, students were asked to list the words that caused and lead to the concept word. This map was considered a cause- effect map. Students were also encouraged to use their prior knowledge of vocabulary in this type.

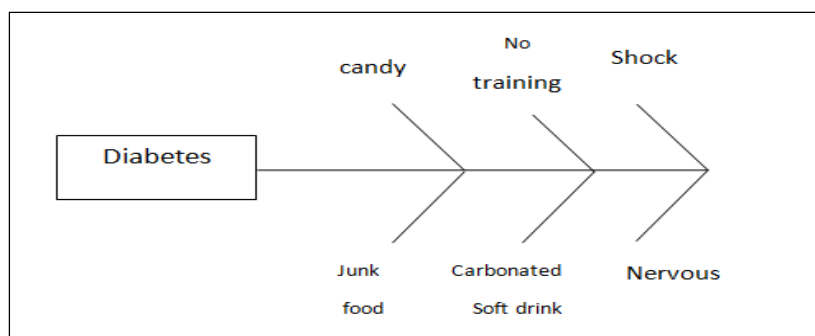


Figure 5. A semantic map using the fishbone type.

The Third Phase

In this phase, students in the control group were asked to answer the exercises in their book that included; "choosing the correct words to complete sentences and matching words with their definitions."

The experimental group, on the other hand, was given another type of activities besides the same exercises given to the control group. The other type of activities included group work to generate distinct maps for different words from the reading texts. This phase was similar in all sessions during the experiment. In this phase, the teachers of the two groups cooperated with the researchers by giving her feedback after each meeting about students' understanding of vocabulary and reading texts.

Data Analysis

The statistical measures used for data analysis of the study were T- test, which was applied to compare the results of the two groups' means for the pre- post-tests in an attempt to measure students' performance on vocabulary before and after the experiment. Besides, descriptive analysis of means and averages were used to show differences in students' responses to the questionnaire. Finally, validity test including ease and distinction coefficients and correlation coefficients were calculated to ensure tests validity.

RESULTS

The authors of the current study posted two research questions, whose total answers constructed the main body of the study findings. The following sections demonstrate presentations to the results of the research questions.

Results of Question One

This part presents the results related to the first question of the study, which was stated as follows:

How does the use of semantic mapping in teaching vocabulary affect EFL female Preparatory-year students' learning of the new reading text?

To detect the performance of the two groups on the pre-test, a t-test was applied for independent samples, as shown in the following table.

Table 1. T-Test of the Experimental and Control Groups for the Pre-Test

Group	No	Mean	Std. Deviation	T	DF	Sig.
Experimental	20	9.700	2.7164	-.110-	38	.913
Control	20	9.800	3.0366			

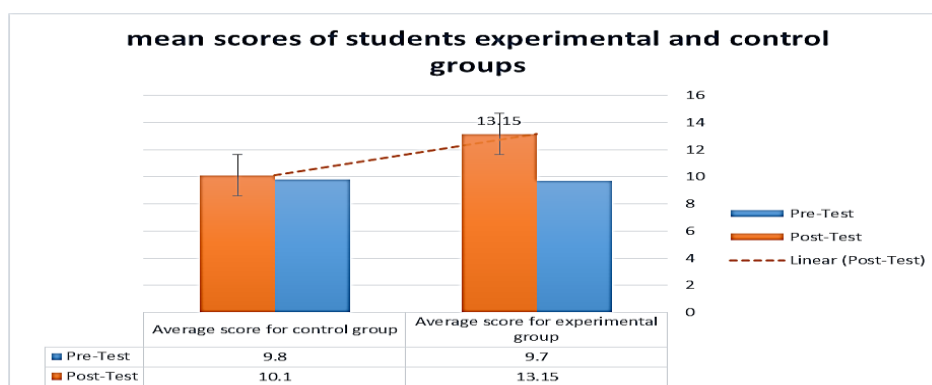
Table 1 illustrated the means and standard deviations of the scores for the experimental and control groups on the pre-test. It showed that there were no statistically significant differences between students in the two groups, as t-test significance level was less than (0.05), where the level of the significant value (0.913) was non-statistically significant. Therefore, this result indicated that the two groups were equal in their learning ability of the new reading texts before using the semantic mapping technique applied in the study. Moreover, this result showed that the two groups of students were equivalent concerning their vocabulary performance level before the experiment.

To verify the existence of statistically significant differences at the level of significance less than (0.05) among students who received instruction through semantic mapping (experimental group), and among those who were taught using traditional methods (control group), t- test was used as shown in the following table:

Table 2. T-Test of the Experimental and Control Group for the Posttest

Group	No	Mean	Std. Deviation	T	DF	Sig.
Experimental	20	13.15	3.4683	2.921	38	.006
Control	20	10.10	3.1271			

According to table 2, means and standard deviations of the scores for experimental and control students groups for the post-test were calculated. The level of the statistically significant difference between them was considered less than (0.05), through using the t-test. It showed that there were statistically significant differences between the two groups, which could be attributable to the use of semantic mapping technique in teaching the vocabulary of the reading texts, where the experimental group received a mean value of (13.15), and the control group received a mean value of (10.10). More specifically, the following figure 6 illustrated the mean scores for the experimental and the control groups in the pretest, and posttest:

**Figure 6.** Mean Scores for Students in the experimental and control groups on the pre-posttest.

The figure above showed that there were significant improvements in the results of the groups in the posttest. However, students in the experimental group with a mean score (13.15) outperformed the control group with a mean score of (10.1) in the posttest.

To ensure the validity of the test, ease and distinction coefficients for the test questions were calculated as shown in table 3.

Table 3. Ease and Distinction Coefficients

Question	Distinction coefficient	Ease coefficient
1	0.33	0.80
2	0.40	0.38
3	0.47	0.48
4	0.47	0.53
5	0.33	0.35
6	0.33	0.53
7	0.33	0.35
8	0.53	0.63
9	0.67	0.63
10	0.53	0.75
11	0.40	0.33
12	0.53	0.58
13	0.40	0.30
14	0.67	0.48
15	0.20	0.33
16	0.20	0.65
17	0.47	0.25
18	0.47	0.30
19	0.40	0.45
20	0.47	0.63
21	0.53	0.45
22	0.53	0.20
23	0.40	0.23
24	0.47	0.18
25	0.53	0.33
26	0.33	0.84
27	0.47	0.25
28	0.40	0.23
29	0.60	0.33
30	0.80	0.38

Table 3 showed ease and distinction coefficients values for each question in the test. It was evident from the results that the ease coefficients values ranged between (0.18 - 0.84), and all were acceptable, where the question was acceptable if the ease of coefficient value varied between values (0.15 - 0.85). The distinction of coefficient between values also ranged between (0.33 - 0.80), and all values indicating the acceptance regarding distinction coefficient varied, as well. This procedure was used to determine the characteristics of the test questions and how to distinguish between the participants with high level, and individuals with low-level, where the question was accepted if the distinguishing coefficient was greater than 0.30 value.

Moreover, the internal validity of all questions was investigated using Pearson Product-Moment Correlation Coefficient. The results are shown in table 4.

Table 4. Correlation Coefficients with Total Score

		With Total score correlation
a1	r	.366*
	p-value	.020
a2	r	.410**
	p-value	.009
a3	r	.553**
	p-value	.000
a4	r	.454**
	p-value	.003
a5	r	.523**
	p-value	.001
a6	r	.273
	p-value	.088
a7	r	.377*
	p-value	.016
a8	r	.292
	p-value	.068
a9	r	.557**
	p-value	.000
a10	r	.420**
	p-value	.007
a11	r	.448**
	p-value	.004
a12	r	.463**
	p-value	.003
a13	r	.486**
	p-value	.001
a14	r	.643**
	p-value	.000
a15	r	.496**
	p-value	.001
a16	r	.347*
	p-value	.028
a17	r	.621**
	p-value	.000
a18	r	.539**
	p-value	.000
a19	r	.347*
	p-value	.028
a20	r	.485**
	p-value	.002
a21	r	.636**
	p-value	.000
b1	r	.718**
	p-value	.000
b2	r	.599**
	p-value	.000
b3	r	.707**
	p-value	.000
b4	r	.759**

b5	p-value	.000
	r	.516**
b6	p-value	.001
	r	.589**
b7	p-value	.000
	r	.690**
b8	p-value	.000
	r	.730**
b9	p-value	.000
	r	.811**

*. Correlation is significant at the 0.05 level (2-tailed).
 **. Correlation is significant at the 0.01 level (2-tailed).

Table 4 indicated that all correlation coefficients between the questions and the total score for the test were statistically significant at (0.05) level. This finding suggested that all questions were valid to gauge what they intended to measure.

Results of Question Two

In this part, an analysis of the questionnaire responses was presented to answer the second research question and to find the differences between different types of the semantic mapping strategies.

Which types of semantic maps are more effective in teaching vocabulary based-reading material?

Table 5. Semantic Maps Means

Semantic Mapping Types	N	Minimum	Maximum	Mean	Std. Deviation
Fishbone map	20	1.25	4.33	2.8535	.66658
Hierarchical organization map	20	1.83	4.17	2.8630	.60874
Definition, description, example map	20	1.42	4.42	2.9295	.60666
Compare-contrast map	20	2.33	4.25	3.1320	.57768
Concept - categories map	20	2.17	4.25	3.2170	.55203

The table above showed the results for the target semantic mapping types. Fishbone map got the least mean with (2.8535) and Standard deviation of (0.66658). Whereas, concept-categories map got (3.2170) with Standard deviation of (0.55203). The results showed that the concept-categories map was the best type of semantic mapping strategies according to students' responses. Moreover, compare – contrast map was the second best type of the intended semantic mapping approach. Moreover, the results of the questionnaire were calculated using average score for each item concerning students' responses to the types of semantic mapping strategies.

Table 6. Responses to the Questionnaire

	Items	Concept categories map	Hierarchical organization map	Compare-Contrast map	Definition, description, example map	Fishbone Map
1	It helps me in relating the new words with prior knowledge.	3.7	3.4	2.6	2.75	2.7
2	It enhances my critical thinking.	3.05	2.7	3.55	3	2.65
3	It helps in expanding my vocabulary knowledge.	3.4	3.25	3.5	2.2	2.9
4	Using this type of maps while reading is useful and easier to acquire new vocabulary.	2.7	2.85	3.05	3.1	3.35
5	This kind of maps can be utilized as a group work.	3.05	3.1	3.3	3.2	2.65
6	This type is more useful as individual work.	3.05	2.75	2.8	2.8	3.85
7	This type needs more help from the teacher.	2.6	3	3.15	3.15	2.65
8	I like to use this type in learning new words.	3.65	2.75	3.1	3	2.75
9	More effort and time are needed in building this kind of maps.	2.75	2.2	3.75	2.9	2.45
10	I think I may use this type a lot in memorizing new words.	3.65	2.9	2.9	3.3	2.35
11	I can apply this type to learn new words through different language skills such as writing or reading	3.55	2.75	3.05	2.85	2.8
12	I will encourage my friends to learn and use this type of maps	3.45	2.7	2.85	2.9	3.15

Table (6) provided different means for each item concerning the various types of the semantic mapping strategies. It demonstrated that students had different responses to each type based on the different items provided.

A description of the experimental group's responses to each item in correlation to different types of semantic mapping strategies of the questionnaire is provided below:

- *It helps me in relating the new words with prior knowledge.* The concept-categories map scored the highest mean in responding to this item with a mean score of (3.7). The hierarchical organization map had a mean score of (3.4), which was higher than the other types.
- *It enhances my critical thinking.* The compare-contrast map recorded the highest mean in responding to this item with a mean score of (3.55). The concept-categories map received a mean of score (3.05), which was higher than the other types.
- *It helps in expanding my vocabulary knowledge.* The compare-contrast map received the highest mean in responding to this item with a mean score of (3.5).

The concept- categories map scored a mean score of (3.4), which was higher than the other types.

- *Using this type of maps while reading is useful and easier to acquire new vocabulary.* The fishbone map had the highest mean in responding to this item with a mean score of (3.35). The compare-contrast map got a mean score of (3.05), which was higher than the other types.
- *This type of maps can be used as a group work.* The compare-contrast map scored the highest mean in responding to this item with a mean score of (3.3). The definition, description, example map got a mean score of (3.2), which was higher than the other types.
- *This type is more useful as individual work.* The fishbone map got the highest mean in responding to this item with a mean score of (3.85). The concept-categories map had a mean score of (3.05), which was higher than the other types.
- *This type needs more help from the teacher.* Two types received the highest mean in responding to this item, which were the compare- contrast map and definition, description, example map with a mean score of (3.15).
- *I like to use this type in learning new words.* The concept- categories map recorded the highest mean in responding to this item with a mean score of (3.65). The compare- contrast map received a mean score of (3.1), which was higher than the other types.
- *More effort and time are needed in building this kind of maps.* The compare-contrast map received the highest mean in responding to this item with a mean score of (3.75). The definition, description, example map got a mean score of (3.05), which was higher than the other types. This negative response indicated that these two types were the least favorable ones and not the best.
- *I think I may use this type a lot in memorizing new words.* The concept- categories map got the highest mean in responding to this item with a mean score of (3.65). The definition, description, example map received a mean score of (3.3) which was higher than the other types.
- *I can apply this type to learn new words through different language skills such as writing or reading.* The concept- categories map scored the highest mean in responding to this item with a mean score of (3.55). The compare- contrast map received a mean score of (3.05), which was higher than the other types.
- *I will encourage my friends to learn and use this type of maps.* The concept-categories map got the highest mean in responding to this item with a mean score of (3.45). The fishbone map got a mean score of (3.15), which was higher

than the other types. The responses to the questionnaire showed that students preferred some types of semantic mapping strategy to some other categories.

DISCUSSION

The present study was designed to determine the effect of using semantic mapping strategy on EFL Saudi female preparatory-year students' vocabulary performance in reading texts. Besides finding the best type of semantic maps from the five determined types adapted from Alber (2010), Asadollahfam & Shiri (2012) and (Abdelrahman, 2013). This study found that semantic mapping strategy had a positive impact on increasing students' level of vocabulary. The findings of the present study also proved that students preferred some types of semantic mapping more than others. The concept- categories map and compare- contrast map were more favorable to students.

For instance, the finding of the first question showed that the groups increased their vocabulary performance after the experiment concerning the effectiveness of using semantic mapping on students' ability to learn the new vocabulary of reading texts.

Moreover, the results of the experimental group showed that students increased their level of vocabulary more significantly than the control group as they got a mean score of (13.15), whereas the control group received a mean score of (10.10). This result goes in line with the findings of similar studies in different contexts including vocabulary performance and retention (Alhossan, 2013; Abdelrahman, 2013; Almuhailell, 2012; Zahedi & Abdi, 2012), reading skill (Al-Ghazo, 2015; Omar, 2015; Halterman Jr, 2013; Asadollahfam & Shiri, 2012; Siddiqi, 2007; El-koumy, 1999) and writing skills (Al-Jarf, 2009; Mah, 2011).

However, some studies found that semantic mapping strategy had no significant impact on students learning (Al-Otibi, 2016 & Khoii & Samira, 2013). The reason for such findings as Khoii & Samira (2013) suggested was that the educational system was a memorization- oriented system, and students used to memorize words by heart through repetition. While Al-Otibi, (2016) found that SM strategy had a positive impact on vocabulary retentions and learning texts. It did not affect reading comprehension due to the clash between the educational system and what students' book enforced.

Additionally, the findings of the students' responses to the questionnaire showed that the participants were motivated toward using semantic mapping strategy, especially the concept-categories map and compare-contrast map. They were enthusiastic to learn the differences between the types of semantic mapping strategies and how they could apply them in learning new vocabulary. This finding was supported by Sabbah's study (2015), which revealed that students were highly motivated toward the semantic mapping strategy. Students stated that semantic mapping strategy was more beneficial when it was used as a group work such as the compare –contrast type and definition, description, example, or individual work as the fishbone map and concept- categories map. This finding was consistent with Abdelrahman (2013), who confirmed that different types of semantic mapping yielded positive results when they were used in

individual, pair or group work. Nevertheless, students in the present study generated more words in group or pair work. They participated more when they shared their ideas with their friends in the group. Similarly, Clarke (1991) found that mapping provided a social context for presenting better ideas, and it helped students to share visions with others.

Semantic mapping types were used in the current study as a pre reading activities as students learned the new words before discussing and reading intensively. The results of the study revealed that it was more useful to teach vocabulary before going to reading texts. Zahedi & Abdi (2012) who found that semantic mapping worked efficiently in the introductory phase of the session highlighted this finding. Working in a group, students may save more time rather than working independently.

Furthermore, a significant finding of the different types of semantic mapping strategy has shown that students have positive attitudes toward the concept- categories type. In this type, students were encouraged to use prior knowledge and to think about kinds of the concept word. Similarly, Duffy (2009) found that semantic mapping strategy was helpful and more beneficial if students visualized a word along with its conceptualized meaning.

Additionally, students preferred to use the compare-contrast map to other types, except the concept-categories map. They agreed that it was useful although compare- contrast map needed more time and teacher modeling. It helped them in enhancing their critical thinking and expanding their vocabulary. However, and interestingly, this was contrary to a study conducted by Asadollahfam & Shiri (2012), who found that compare and contrast maps were not preferred by students as they needed more time and effort without any benefit. Finally, they concluded that compare- contrast type did not help their students to read faster as the other types in the current study.

Moreover, definition, description, example map was the third favorable type by participants of the present study. Students were motivated to suggest examples related to their lives during the experiment. However, they were less motivated to invent their definitions of words and give them a description. This finding was supported by (Beck *et al.*, 2013) and May (1994) who noted that students needed to be trained and motivated before prompting them to construct their definitions of the words. Students suggested that this type needed more time, effort and teacher support. Moreover, they needed to know the different uses of a word to make a correct definition and proper description of it. Although this type was somehow difficult according to students' response, it might help students to use words creatively in a way that might lead to better word memorization (Nation, 2013).

On the other hand, hierarchical organization map received the smallest scores by the study participants although the students expressed their positive attitudes towards it in relating new information to prior knowledge. This result could be attributed to the mismatch between the traditional graphic organizers, namely, tree map with this type. Students might not notice the differences in this new type where they were prompted to

list a positive or a negative use of meaning for each word. This result is due to the short time, which leads to insufficient concentration on a certain set of vocabulary, and to less experience required to this particular type.

The least favorable type of maps for the students was the fishbone type, which was also known as the cause-effect type. In contrast, Asadollahfam & Shiri (2012) found that this type helped students to read much faster although it needed more time. However, this type can be used best to introduce medical words, which make students think of causes for them (Nation, 2013). In addition, it may be utilized with words related to emotions, feelings or impressions.

Furthermore, semantic mapping strategy usually needs more time to construct from both the teachers and the students. For instance, Alotibi (2016) found that semantic mapping was useful, but it consumed more time needed for teachers' modeling and students' training. Nevertheless, in the present study, students confirmed that only some types of semantic mapping needed more teacher modeling and students training, which consumed more time and effort from both the students and the teacher such as compare-contrast map, definition, description, and example map.

In sum, semantic mapping strategy is considered to be a useful strategy that helps students to deal with words creatively. It helps students to remember words more efficiently as it enhances the use of associating meaning with prior knowledge. Some types of this strategy are more favorable by students and thus may be considered the best types including concept categories map, compare-contrast map, and definition, description, example map. In contrast, other types including hierarchical organization map and fishbone map are less preferred by the students. Different types of semantic mapping strategy may be used with different words, but few types are somehow restricted to a particular set of words.

Most studies about using semantic mapping found that it was an effective strategy to teach new vocabulary, but it consumed more time and effort from both the teacher and the students. The present study was different from other studies as it suggested and discussed some types of semantic mapping strategies and tried to find the best type among them that might help them save the class time. The best types may be used to teach vocabulary effectively, while other types may not help students to remember words effectively due to the cost of time and efforts. Moreover, few studies used the semantic mapping strategy with ESP female students in a similar manner to the current study, which investigated the effectiveness of semantic mapping strategies and some of their types on enhancing the vocabulary of the preparatory year students receiving English instruction in different university subject areas. Accordingly, these differences distinguish the current study from the other studies conducted on the same theme.

PEDAGOGICAL IMPLICATIONS

Semantic mapping strategies have proven its effectiveness in vocabulary learning. It associates knowledge and experiences with the new information being presented to

students. It is a helpful strategy for teaching abstract vocabulary to learners. According to Heltai (1996), students should make some mental effort in learning the meaning of new vocabulary. Involving the brain in making association and construction of meaning may help in more retention of words and generate in depth some levels of cognitive understanding (Heltai, 1996).

Semantic mapping strategy is used to teach vocabulary for EST learners as they may face a lot of academic and sub-technical vocabulary. Subsequently, it will help them in reading academic texts more efficiently (Heltai, 1996). Moreover, a successful teaching of reading texts may involve using students' prior knowledge of words by connecting what students have already known with the new words or information in the texts (Hiebert & Kamil, 2005). Therefore, to help students improve their level of vocabulary in the reading texts, semantic mapping strategies may be used as an instructional strategy which the study has proven to have a significant impact on students' performance. Thus, preparatory year students need to learn how to use their experiences and associate them with the new knowledge of vocabulary. Besides, they need to practice the types of semantic mapping to get used to applying them to learning new and challenging words.

The findings of the study show that semantic mapping has a positive effect on students' vocabulary performance. Therefore, language instructors are encouraged to help their students to use the semantic mapping strategies and to train them to use their different types. They should help their students by varying the strategies for vocabulary instruction. Additionally, semantic mapping strategies may be helpful for teaching both concrete and abstract vocabulary, but they should not be overused (Heimlich & Pittelman, 1986). Hence, teachers and language instructors should be aware not to overuse one of the vocabulary strategies over the others, as students may get bored or confused if many vocabularies are being introduced to them with only one strategy. Additionally, there is a demand for language instructors to avoid using dictionary definitions or giving mother tongue equivalent for the new words. Furthermore, language instructors are advised to select the most appropriate strategy for each new and low-frequency words especially those words that may be used more by the students in their majors. Besides, language instructors in the preparatory - year should help their students in their vocabulary needs. Besides the academic words, which are assigned to them. They may help students by using these words to learn more specialized and technical terms. Moreover, Language instructors who are confronted with students in medical or engineering majors will use the mapping strategies for their students to read the technical books (Broughton *et al.*, 1980). Therefore, language instructors, especially teachers in preparatory-year for science majors are advised to prepare a proper vocabulary instruction during the teaching of other skills especially reading comprehension. They may vary activities to teach vocabulary, which may include semantic mapping types to enhance the students' critical thinking (Browning & Herron, 2012).

Finally, the findings of the study may encourage curriculum designers to be aware of these new and efficient strategies for teaching the language skills. They may give more time to help students learn the English language in different subject matters. They are advised to introduce the various types of semantic mapping in students' book to help learners use them more efficiently on different language skills. Universities and English language centers also should design courses or conduct workshops for language instructors to train them on how to use semantic mapping types in teaching vocabulary and other language skills.

CONCLUSIONS

Based on the findings of the study, the researchers concluded that students who were exposed to use semantic mapping strategy showed higher results than the other students who were taught traditionally. The students were motivated to use different types of semantic mapping strategy, but certain kinds were more preferred by the students such as concept- categories map and compare-contrast map. Furthermore, the study concluded that more time and effort from both the teacher and the students were required to use certain types such as compare- contrast type and definition, description, example type. Finally, the students showed positive attitudes toward different types of semantic mapping that helped them in enhancing critical thinking and expanding their level of vocabulary. Among these types was the fishbone, which was the best strategy to apply individually, whereas compare-contrast type worked better in a group activity.

RECOMMENDATIONS

Based on the findings, the study recommends more studies are needed to help preparatory year students in learning English for specific purposes. Besides, educators, language teachers, and instructors should vary their strategies in vocabulary instruction and include semantic mapping as one of the effective strategies, especially in academic and technical vocabulary for the preparatory year students. The study further recommends future studies to be conducted on comparing the use of the five selected semantic maps in teaching the language skills including reading comprehension or writing. As the present study was limited to EFL female students, further studies may investigate the male students or the two genders and compare their results. Besides, the sample of the study was limited to preparatory year students. Therefore, other studies may choose other samples from schools or university levels. Finally, the study suggests that a future study may investigate the impact of other types, rather than those five in the present study on affecting students' vocabulary performance.

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APPENDIXES

Appendix I

Vocabulary Test (Pre-test and posttest)

Name:

Group:

Q: 1 Complete the sentence. Choose A, B, or C.

(21 marks)

- 1- My laptop is not working. I need a..... to help me fix it.
 - a) stranger
 - b) scientist
 - c) professional
- 2- Mobile programs have to your privacy.
 - a) expect
 - b) maintain
 - c) avoid
- 3- Nowadays, some kids programs in television are Parents have to watch the program before their children do.
 - a) offensive
 - b) polite
 - c) pleasurable
- 4- He always..... the stories. I knew that he wanted people to see him as the greatest person in the world.
 - a) observed
 - b) exaggerated
 - c) increased
- 5- She others' times so she does not spend a lot of time talking with them about anything.
 - a) recognizes
 - b) appreciates

- c) applies
- 6- He is a lucky man. He is the only one who from the fire in that building.
- a) avoided
 - b) excepted
 - c) survived
- 7- In order to speak English like native speakers, one has toit a lot with other people.
- a) practice
 - b) read
 - c) participate
- 8- She always cries when people get angry with her. She is too
- a) careless.
 - b) sensitive.
 - c) polite.
- 9- Because he the gas in his car, he must stop at the gas station to refill it.
- a) spent
 - b) expanded
 - c) consumed
- 10- Last time I saw Amal, I did not her at first. She has changed her style.
- a) miss
 - b) recognize
 - c) describe
- 11- My grandfather is not allowed to eat any dessert because he has
- a) stomach.
 - b) Asthma.
 - c) diabetes.
- 12- Smoking people are if they do not quit smoking.
- a) at least
 - b) at worst
 - c) at risk
- 13- The teacher will make an this time and retest those who did not attend the exam.
- a) initial
 - b) offensive
 - c) accepted
- 14- Bad mood should not your way of dealing with people.
- a) influence
 - b) identify
 - c) change
- 15- After the accident, he needs..... In order that he can walk on his feet again.
- a) reconstruction
 - b) rehabilitation
 - c) relearning
- 16- Ali always trains in the gym. He dreams of becoming one of thein the Olympics.
- a) actors
 - b) assistants
 - c) athletes

- 17- Do not be..... . People will not deal with you anymore.
 a) shy
 b) aggressive
 c) afraid
- 18- Tomorrow, the company is celebrating its tenth anniversary. It is really a special.....
 a) experiment.
 b) discussion.
 c) occasion.
- 19- She feels for the poor. She is a person.
 a) compassionate
 b) sorry
 c) careful
- 20- The math problem is very I cannot solve it by myself.
 a) easy
 b) hard
 c) complex
- 21- Abeer works with her group in the class. Her in the task is the writer.
 a) role
 b) standard
 c) accomplishment

Q 2: Match each underlined word with the correct definition.

(9 marks)

- | | |
|--|---|
| 1- Each one will take her <u>portion</u> of food. | a- () suppose |
| 2- Scientists prove Einstein's theory of gravity after 100 years of its discovery. | b- () a person who asks to be chosen for something |
| 3- Are you able to access the university <u>database</u> ? | c- () reply |
| 4- People can <u>hypothesize</u> but they need to prove it. | d- () a person who cares for others without regard for his/her own needs |
| 5- She wants someone to <u>respond</u> to her questions. | e- () part or section |
| 6- He is <u>recovering</u> after the injury. | f- () a person who works in bones treatment and surgery. |
| 7- She is the <u>applicant</u> for the new job. | g- () information |
| 8- She is really an <u>altruist</u> . She helped us a lot in her spare time | h- () getting better |
| 9- I am thankful to the <u>orthopedist</u> who helped me in relocating my injured leg. | i- () a set of ideas |

Appendix II

Questionnaire: A questionnaire was about Preparatory Year Female Students' attitude towards using particular types of semantic mapping and their influence on vocabulary performance

Dear student:

Thank you for participating in this questionnaire which is about different types of semantic mapping strategy in learning new vocabulary through reading texts. Be sure that your answers will be treated with complete confidentiality.

Instructions

After you read each statement in the table, please write a number next to it and under each strategy. Rate the strategies on a scale of 1-5 as follow:

Items	Concept categories map	Hierarchical organization map	Compare- Contrast map	Definition, description, example map	Fishbone Map
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- (5) Strongly agree موافق بشده
 (4) Agree موافق
 (3) Do not know لا أعرف
 (2) Disagree لا موافق
 (1) Strongly disagree لا موافق إطلاقاً

The Students' Questionnaire

Please rate each statement and write a number under each strategy as in the previous example:

1	It helps in expanding my vocabulary knowledge. يساعدني هذا النوع من الخرائط على ربط المفردات الجديدة بالمعلومات السابقة.
2	It enhances my critical thinking. يساعد هذا النوع من الخرائط في رفع مستوى التفكير الناقد.
3	It helps in expanding my vocabulary knowledge. يساعد هذا النوع في زيادة معرفتي للمفردات.
4	Using this type of maps while reading is useful and easier to acquire new vocabulary. استخدام هذا النوع من الخرائط خلال القراءة يساعد في اكتساب المفردات الجديدة بسهولة ويسر.
5	This type of maps can be used as a group work. يمكن استخدام هذا النوع من الخرائط كنشاط جماعي.
6	This type is more useful as individual work. هذا النوع من الخرائط عملي أكثر كنشاط فردي.
7	This type needs more help from the teacher. يحتاج هذا النوع من الخرائط مساعدة المعلمة في التطبيق.
8	I like to use this type in learning new words. أرغب باستخدام هذا النوع من الخرائط في تعلم المفردات الجديدة.
9	More effort and time are needed in building this kind of maps. يحتاج هذا النوع من الخرائط إلى الكثير من الجهد والوقت.
10	I think I may use this type a lot in memorizing new words. أعتقد أنني قد أستخدم هذا النوع كثيراً في عملية حفظ المفردات الجديدة.
11	I can apply this type to learn new words through different language skills such as writing or reading أستطيع تطبيق هذا النوع لتعلم مفردات جديدة من خلال مهارات اللغة المختلفة مثل القراءة والكتابة.
12	I will encourage my friends to learn and use this type of maps سأشجع صديقاتي على تعلم واستخدام هذا النوع من الخرائط

Appendix III

Explanation for the types of Semantic Mapping

Dear students,

We have studied a lot of vocabulary through reading texts. These vocabulary were introduced to you through semantic mapping strategy. This strategy linked the vocabulary you are already learnt before with the new one. You were trained to use five types of semantic maps which are:

- 1- Concept categories map.
- 2- Hierarchical organization map.
- 3- Compare- Contrast map.
- 4- Definition, description, example map.
- 5- Fishbone map.

Please, have a look to an example of each of these maps below then kindly answer the questionnaire.

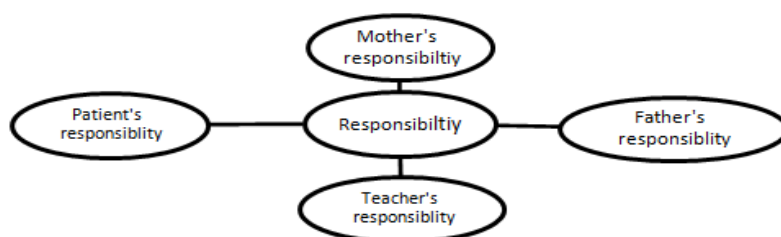
عزيزتي الطالبة،،

لقد درسنا معاً الكثير من المفردات الإنجليزية من خلال نصوص القراءة. وقد شرحت لكي هذه المفردات من خلال إستراتيجية الخرائط الدلالية وهي إستراتيجية تربط المفردات التي تعلمتها سابقاً بالمفردات الجديدة. وقد تدريب على خمسة أنواع مختلفة من الخرائط الدلالية.

أرجو منك الإطلاع على أمثلة لهذه الخرائط في الأسفل ومن ثم التكرم بإجابة الاستبيان

1- Concept categories map

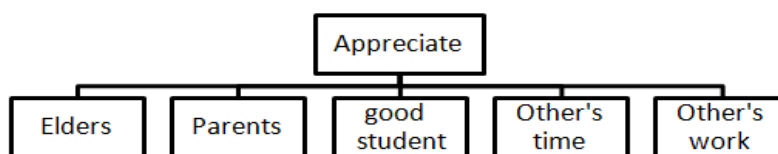
This type of semantic maps relate the new words with words that you know before. The related words are part or kinds of the new one.



2- Hierarchical organization map

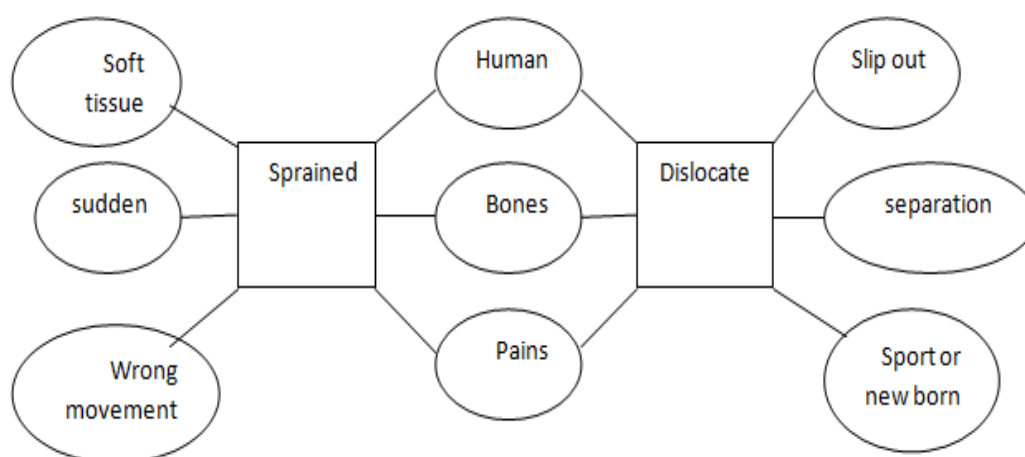
This type of semantic maps relate the new words with words that you know before. The words are related to the new word but not necessarily part or kinds of it. You may add any words you remember that reminds you of this new word.

Item	Concept categories map	Hierarchical organization map	Compare-Contrast map	Definition, description, example map	Fishbone Map
It enhances my critical thinking. يساعد هذا النوع من الخرائط في رفع مستوى التفكير الناقد.	3	4	5	2	1



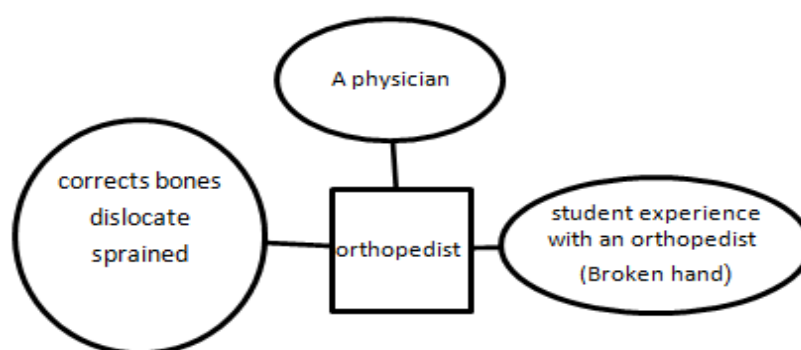
3- Compare- Contrast map.

In this type of semantic mapping, you compare and contrast two new words with each other. To make such a comparison, you need to remember as many words as you can that you have learnt before.



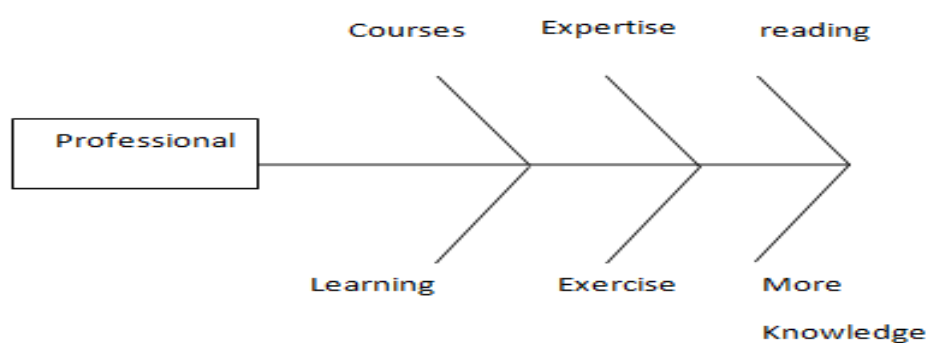
4- Definition- Description- Example map

In this type, you may add your own definition, description of the word and an example.



5- Fishbone Maps

This type of semantic maps links the new words with its causes.



Appendix V

List of Arbitrators

Dr. Azmi Adel

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Dr. Imed Bouslama

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