

**Deanship of Graduate Studies  
Al-Quds University**

**The Effect of Using the Concept Mapping Method on EFL  
Vocabulary Achievement of Second Grade Students in Southern  
Hebron.**

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**The Effect of Using the Concept Mapping Method on  
EFL Vocabulary Achievement of Second Grade Students  
in Southern Hebron.**

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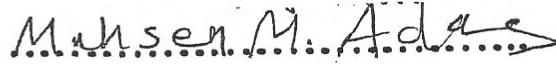
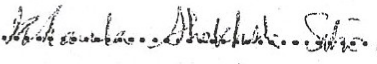
### Thesis Approval

The Effect of Using the Concept Mapping Method on EFL Vocabulary  
Achievement of Second Grade  
Students in Southern Hebron

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- 2- Dr. Mohsen Adas ...  ..... Internal examiner.
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**Declaration**

**I certify that this thesis submitted for the degree of Mater is the result of my own research, except where otherwise acknowledged, and this thesis (or any part of the same) has not been submitted for a higher degree to any other University or institution.**

**Signed.....**

**Amal Abu Allan**

**Date:**

## **Acknowledgements**

**On this page, I would like to express my gratitude to all those who gave me the possibility to complete this thesis.**

**Firstly, thanks to my supervisor Prof. Ahmad Fahim Jaber, who gave me this topic to work on it. All the inspiration and motivation behind this work is due to him. He proved to be an ideal supervisor during the thesis. His deep blue remarks on the first draft helped me a lot to learn and improve my thesis report; also his support, patience and kindness were nothing short of inspirational. I cannot remember a time when I left his office without a sense of renewed enthusiasm for continuing this work. Working with Prof . Ahmad gave me a deeper understanding of what it is to be a good teacher. The words are simply not enough to express my regards for him.**

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## **ABSTRACT**

### **The Effect of Using the Concept Mapping Method on EFL Vocabulary Achievement of Second Grade Students in Southern Hebron.**

**By**

**Amal Abu Allan**

**Supervised by**

**Prof. Ahmed Fahim Jabr**

**This study aimed at investigating the effect of using the concept mapping method in teaching the vocabulary of English as a foreign language on the second grade students in the school of Southern Hebron.**

**The population of this study consisted of all the second grade students studying during 2006/2007 at Southern Hebron Directorate. Students of the study sample were randomly sorted into two groups. The first group was taught English vocabulary by using the concept mapping method, while the other group was taught by using the traditional method.**

**This study attempted to answer the following major questions:**

**Is there an effect of using concept mapping method in teaching vocabulary of English Language on the achievement of second grade students at Southern Hebron Directorate?**

**From this major question the following sub-questions were derived:**

- 1. Is there a statistically significant effect of using concept mapping method on vocabulary achievement of second grade students who learn EFL due to their group?**
- 2. Is there a statistically significant effect of using concept mapping method on vocabulary achievement of second grade students who learn EFL due to gender?**

**3. Is there a statistically significant effect of using concept mapping method on vocabulary achievement of second grade students who learn EFL due to the interaction between group and gender?**

**To investigate the effect of using the concept mapping method in teaching EFL vocabulary, the researcher has prepared an achievement test, and in order to answer the study questions and test its hypotheses, the suitable statistical analyses were used, Means, standard deviations, ANCOVA.**

**The results of the study showed that:**

**There are statistical significant differences at ( $\alpha =0.05$ ) in the means of second grade students achievement test due to the group in favor of the experimental group.**

**There are statistical significant differences at ( $\alpha =0.05$ ) in the means of second grade students achievement test due to gender in favor of the female students.**

**There are statistical significant differences at ( $\alpha =0.05$ ) in the means of second grade students achievement test due to the interaction between group and gender.**

**In light of the previous results the researcher has presented recommendations, some of them are:**

- 1- For teachers, concept maps are useful tools for analyzing and planning instruction.**
- 2- For investigators, to do further similar studies.**

## ملخص الرسالة باللغة العربية

هدفت هذه الدراسة إلى استقصاء اثر استخدام الخرائط المفاهيمية في منهاج اللغة الإنجليزية على تحصيل المفردات لدى طلبة الصف الثاني الأساسي في مدارس مديرية التربية و التعليم التابعة للسلطة الفلسطينية في جنوب الخليل. مقارنة بالطريقة التقليدية.

و قد سعت هذه الدراسة للإجابة عن السؤال الرئيس التالي:

ما مدى تأثير استخدام الخرائط المفاهيمية في منهاج اللغة الإنجليزية في تحصيل طلبة الصف الثاني لأساسي في مفردات اللغة الإنجليزية مقارنة بالطريقة التقليدية؟ من خلال اختبار الفرضيات التالية:

1- لا توجد فروق ذات دلالة إحصائية عند مستوى الدلالة ( $\alpha = 0.05$ ) في اثر استخدام التعلم بالخرائط المفاهيمية على تحصيل الطلبة في تعلم مفردات اللغة الإنجليزية كلغة أجنبية تعزى إلى المجموعة.

2- لا توجد فروق ذات دلالة إحصائية عند مستوى الدلالة ( $\alpha = 0.05$ ) في اثر استخدام التعلم بالخرائط المفاهيمية على تحصيل الطلبة في تعلم مفردات اللغة الإنجليزية كلغة أجنبية تعزى إلى الجنس.

3- لا توجد فروق ذات دلالة إحصائية عند مستوى الدلالة ( $\alpha = 0.05$ ) في اثر استخدام التعلم بالخرائط المفاهيمية على تحصيل الطلبة في تعلم مفردات اللغة الإنجليزية كلغة أجنبية تعزى إلى التفاعل بين المجموعة و الجنس.

لقد تكون مجتمع الدراسة من جميع طلبة و طالبات الصف الثاني الأساسي في مديرية التربية و التعليم في جنوب الخليل و البالغ عددهم ((5454)) من العام الدراسي 2006-2007.

اختيرت عينة عشوائية ممثلة لمجتمع الدراسة مكونة من أربع شعب, شعبتان للذكور في مدرسة عثمان بن عفان الأساسية و شعبتان للإناث في مدرسة خولة بنت الازور و البالغ عددهم ((128)) طالبا و طالبة و قد تم تقسيم الشعب إلى مجموعة تجريبية و مجموعة ضابطة بطريقة عشوائية.

لقد قامت الباحثة ببناء اختبار تحصيلي, ثم التحقق من صدقه بعرضه على مجموعة من المختصين كما تم التحقق من الثبات باستخدام test-retest حيث بلغ ثبات الاختبار ((0.89)).  
تم استخدام المتوسطات الحسابية و الانحرافات المعيارية لعلامات الطلبة و كذلك تم استخدام تحليل التباين ((ANCOVA)).

وقد أظهرت نتائج الدراسة وجود فروق بين المجموعة التجريبية و الضابطة لصالح المجموعة التجريبية كما أظهرت النتائج وجود فروق بين الإناث و الذكور لصالح الإناث. و أخيرا أظهرت النتائج بان هناك فرق بين التفاعل بين المجموعة و طريقة التدريس .

و قد أوصت الباحثة بعدة توصيات منها تضمين الخرائط المفاهيمية في خطة المناهج الفلسطينية, و كذلك تدريب المعلمين على استخدام الخرائط المفاهيمية, القيام بدراسات مشابهة من قبل الباحثين للمرحلة الثانوية.



# Chapter One

## 1.1 Introduction

English is the most spoken languages in the world, it is important for travel, international business. It's also important for every person to learn it. They may need it for occupational or academic purposes.

زيتون (1994) mentioned that education has three elements; these are teacher, students and content. Moreover he said that the teacher is the most important of them, because if the students have the ability to learn, and the content is available and it is planned well, and the teacher is not available we will not achieve an effective teaching.

In order to learn any other language, first of all we need to learn its vocabulary, and we know that the English language have four skills which are listening, speaking, reading, and writing, and none of the four skills can be taught without using the essential vocabulary needed to teach it, (أبو قليبين, 2004)

Unfortunately, Arab students and particularly Palestinians who learn English at school, cannot speak English well, because schools in Palestine focus on grammar.

How can teachers help their students to build up a large foreign language vocabulary quickly, since words are the currency of education, (Camille, 2005). In addition, vocabulary instruction occurs in classrooms every day at a variety of levels and for a variety of purposes.

There are many different methods to teach students the English language. So, in order to teach vocabulary to our students, teachers should adopt an effective method that help them to a meaningful learning . In this respect the researcher will use the concept mapping method.

**One of the most helpful techniques (Novak & Gowin 1984), is to prepare concept maps.**

**Concept maps are graphical representations of information consisting nodes labeled lines. Nodes correspond to concepts that serve as units of thought or meaning (Fisher, Faletti, Patterson, Thornton, Lipson and Spring, 1990). Lines indicate relationships between pairs of concepts and labels on each line explain how two concepts are related (Jonassen, 2000).**

**Another characteristic of concept maps according to Novak & Alberto (2006) is that concepts are represented in a hierarchical fashion with the most inclusive, most general concepts at the top of the map and the more specific, less general concepts arranged below.**

**A final feature of concept maps is the inclusion of specific examples of events or features , these can help to clarify the meaning of a given concept.**

**According to Novak and Canas (2006); Meaningful learning has three requirements**

**1-The material to be learned must be conceptually clear and presented with language and examples relatable to the learner's prior knowledge.**

**2-The learner must possess relevant prior knowledge. This condition can be met after age 3 for virtually any domain of subject matter, but it is necessary to be careful and explicit in building concept frameworks if one hopes to present detailed specific knowledge in any field in subsequent lessons.**

**3-The learner must choose to learn meaningfully. The one condition over which the teacher or mentor has only indirect control is the motivation of students to choose to learn by attempting to incorporate new meanings into their prior knowledge, rather than simply memorizing concept definitions or propositional**

statements or computational procedures.

Also, All and Havens (1997) mentioned that there are three key factors associated with meaningful learning. These are:

1. Meaningful learning involves the assimilation of new concepts and prepositions into existing cognitive structure.
2. Knowledge is organized hierarchically in cognitive structure and most new learning involves placing concepts and proposition into existing hierarchis.
3. The third factor is related to the idea that knowledge acquired by rote learning will not be assimilated.

Concept maps were developed in 1972 in the course of Novak's research program at Cornell University where he sought to follow and understand changes in children's knowledge of science (Novak & Musanda ,1991). During this course of this study the researcher found it difficult to identify specific changes in children's understanding of science concepts by examination of interview transcripts .

### **1. Definitions of concept maps**

According to Bruillaard and Baron, (2000 pp.10-13) concept maps are representation of concepts and their interrelationship that are intended to represent the knowledge structures that humans store in their minds

According to All and Havens (1997) concept maps are graphic or pictorial arrangements of the key concepts that deal with a specific matters.(pp. 25)

According to Okamoto (2001) Concept Mapping is a technique of graphically representing concepts and their hierarchical interrelationship, using spatial configurations of nodes and links to communicate about the concepts in a given domain.

According to Chularut and DeBacker (2004) concept mapping is a tool for representing the interrelationships among concept in an integrated, hierarchical manner. (pp248-263

According to Dehui (2005,pp1-4) concept mapping is defined as technique for representing knowledge in diagrams called "knowledge graphs" which are networks of concepts with relationships between them represented respectively by nods and links

According to Sket and Glazar (2005,471-477) concept map is a structural representation consisting of nods and labeled lines.

According to Novak,(1991,pp45-49). Concept maps are tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts or propositions, between two concepts.

The concept mapping method defined by Novak and Gowin (1984), involves a series of steps.

- 1- Define the topic or focus question. Concept maps that attempt to cover more than one question may become difficult to manage and read.
- 2- Once the key topic has been defined , the next step is to identify and list the most important or general concepts that are associated with the topic .
- 3- Once the key concepts have been identified and ordered, links are added to form a preliminary concept map.
- 4- Linking phrases are added to describe the relationship among concepts.
- 5- Once the preliminary concept map has been built , a next step is to look for cross-links which link together concepts that are in different areas or sub-domains on the map . Cross-links help to elaborate how concepts are interred related.

Many studies have shown that mapping yields benefits for learning, according to scholars Anderson and Ditson, (1999): concept mapping can help students' remember information longer, master complex, synthetic material.(pp 9-12).

## **2. The use of concept mapping**

**Concept mapping has been used as a strategy to represent knowledge in various fields. In education, concept mapping is considered as an effective strategy for promoting deep understandings of concepts and their relationships**

**White & Gunstone (1992) described uses of Concept Maps in education that are primarily based on assessment of changes in learner's understanding. These uses might include assessment of understanding of a limited aspect of a topic, assessment of whether learners can make links among concepts and the changes that occur in these links, assessment of whether learners understand goals of instruction, identification of which concepts are perceived as key concepts by learners, and promotion of collaboration among learners.**

## **3. Communication enhancement: Collaborative learning**

**Concept mapping is useful for sharing meaning between people and teams by explaining to one another their views and cognitive frameworks about a topic (Hughes & Hay, 2001). Thus, concept mapping can be used as a communication tool in discussion of concepts or ideas during collaborative work. Specifically, graphics-embedded concept maps can represent information in a way that may be more appropriate to communicating both contents and an idea about the complexity of content (Bruillard & Baron, 2000).**

**Collaborative construction of concept maps enables students to compare ideas with one another and reconstruct their own knowledge. Collaborative concept mapping can be effectively conducted using a networked computer environment. Students can exchange information and create a concept map jointly within the network environment (Chung, & Dennis,1997).**

## **4. Concept maps as Advance Organizers.**

**Ausubel (1968) advocated the use of advance organizers to foster meaningful**

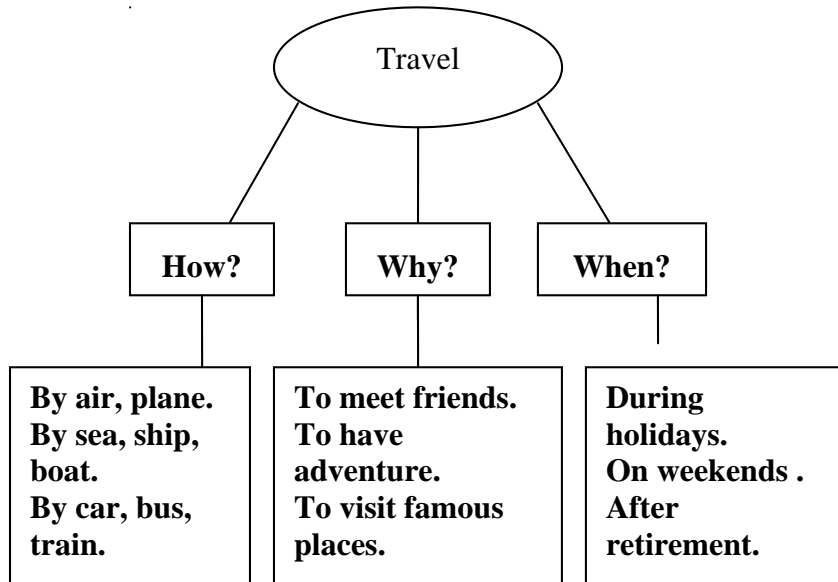
learning. Advance organizers are global overviews of the material that is to be learned. Ausubel suggested that advance organizers foster meaningful learning by prompting the learner regarding pre-existing subordinate concept that are already in the student's cognitive structure.

## **5. Using concept mapping for brainstorming**

Brainstorming is " a method for developing creative solutions to problems. It works by focusing on a problem and then deliberately coming up with as many deliberately unusual solutions as possible and by pushing the ideas as far as possible " (Mind Tools , 2002) .

Anderson and Freebody (1981 pp 77-117), say that concept mapping is an ideal tool for brainstorming, they identify several benefits of using teacher directed brainstorming it generates student interest in the subject area and helps them to make their current level of knowledge visible to themselves . For example if the teacher wants to teach the word travel, he or she can use some questions in order to brainstorming their children in the classroom like figure 2 ( Kang, 2004).

**Figure 2, brainstorming for travel.**



## **6. Concept maps as learning tools**

**Concept maps can be an effective way of learning because it requires explication and reflection (( making explicit what is normally implicit ))and may help the students to develop auto-monitoring ( Hammond,1994) and enhance their critical thinking . Moreover students can use concept maps to take class notes throughout the explanation of the teacher. A concept map can provide feedback to the students to check their understanding of the material, it also provides feedback to teacher, as well.**

**Concept maps have been used to assess students and their learning experiences. In a study conducted on 100 psychology undergraduate students and two lecturers, it was found that domain experts can provide measures for comparison and reconstruction of concept maps drawn by students and the different styles of these**

concept maps show individual differences in students' knowledge (Aidman and Egan 1998).

Novak and Gowin ( 1984 ) pointed out that concept maps are a kind of schematic summary of what students know . They can be used to display students' prior knowledge about a given topic or they can be used to summarize what has been learned. Also the researchers; noted that the act of mapping is a creative activity , in which the learner must exert effort to clarify meanings. Heinze and Novak (1996) & Pankratius (1993), have the same opinion that using the concept mapping method in teaching leads to meaningful learning , and enables students to master knowledge.

In the light of what preceded, we can notice the importance of using concept mapping strategy in teaching , and in view of the lack of studies of concept mapping in the Palestinian society, the researcher decided to study the concept mapping method in teaching English vocabulary. The study will be conducted on the fifth grade students during the year 2006-2007.

## **7. Concept maps as an evaluating tool**

The concept maps created by students can be evaluated in two ways: the direct approach where they are graded according to principles of learning theories- hierarchical organization, progressive differentiation, and integration reconciliation- or the indirect approach where map matching methods are employed. Relative significance can be given to the different concepts and relationships used and such maps are referred to as attributed concept maps. How to construct prototype maps and perform map matching has been an issue associated with the indirect evaluation approach, (Chen, 2001).

## **8. Concept Mapping as a “Metacognitive Tool”**

Concept mapping provides children opportunities to both monitor their own knowledge and control their thinking. In planning to build a map, the learner must reflect on prior knowledge, perhaps by asking “what do I know about...?”

(McAleese, 1998). Children must make important planning decisions about which concept will be the focus of attention, where the concept will be placed on the map, and in what ways concepts may be linked to one another. By rearranging items on the concept map and hearing classmates' thoughts about conceptual relationships, children are able to consider multiple perspectives and multiple ways that the final goal may be reached. Finally, by "telling the story" of the map by following the path of the links, concept maps provide a powerful tool to check "sense-making," as well as a visual means to repair or make corrections if an error is detected (Gallenstein, 2005).

## **9. Statement of the problem**

Vocabulary knowledge is fundamental to reading comprehension; one cannot understand a text without knowing what most of the words mean (Anderson 1981). Moreover, if we simply teach students more words they will understand a text better.

أبو قليبين (2004) indicated that there are many problems which may arise in teaching vocabulary. These problems can be clarified by the following two questions.

What words should the teacher choose to teach?

And what meanings of a word should students look up in the dictionary?

As a result. This study attempts to investigate the effect of using concept mapping method in teaching the vocabulary of English as a foreign language on the achievement of second grade students in the school of Southern Hebron.

## **10. Questions of the study**

This study attempted to answer the following major question:

Is there an effect of using concept mapping method in teaching vocabulary on the achievement of second grade students at Southern Hebron Directorate?

From this major question the following sub-questions were derived:

- 1. Is there a significant difference at ( $\alpha =0.05$ ) in the achievement of students in English vocabulary due to method of instruction?**
- 2. Is there a significant difference at ( $\alpha =0.05$ ) in the achievement of students in English vocabulary due to gender?**
- 3. Is there a significant difference at ( $\alpha =0.05$ ) in the achievement of students in English vocabulary due to the interaction between method and gender?**

## **11. Hypotheses of the study**

The following null hypotheses were derived to answer the questions of the study:

- 1. There are no statistical significant differences at the point of ( $\alpha =0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to method.**
- 2. There are no statistical significant differences at the point of ( $\alpha =0.05$ ) in the means of the second grade students achievement of EFL vocabulary due to gender.**
- 3. There are no statistical significant differences at the point( $\alpha =0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to the interaction between group and gender.**

## **12. Objectives of the study**

The study aimed at investigating the effect of using concept mapping method in teaching English vocabulary to second grade students. The study also aims to deduct the effect of numbers of variables (group, gender and the interaction between group and gender).

## **13. Significance of the study**

The concept mapping method was first used by Novak (1990), with emphasis on its use in science teaching. He specifies this strategy to be limited to scientific studies only.

**As a result this study will use the concept mapping method in teaching the English language vocabulary because of the lack of the studies that deal with this strategy.**

**There are few studies on concept mapping in Palestine**

**The researcher used this strategy to encourage teachers to use a new method in their teaching instead of using the traditional one.**

**Moreover the importance of this study comes from the findings and recommendations of many researchers such as القاروط (1998) زلوم (2000) , Novak, et al, (1983), Okebukola (1990) .**

#### **14. Limitations of the study**

**This study is limited to the following:**

- 1. This study was limited by male and female second grade students in the Palestinian public schools.**
- 2. This study was limited to vocabulary achievement by using concept maps**
- 3. This study was limited by using three units of student's book.**

**Chapter Two**  
**REVIEW OF RELEATED LITRETURE**

## **Chapter Two**

### **REVIEW OF RELEATED LITRETURE**

**Teachers can employ various methods to help students see how ideas or concepts relate to one another and fit into a large picture. Understanding the relationship among concepts help students grasp them more quickly, and efficiently and develop well structural mental pictures about the content they are learning ( Goldman and Rakestraw,2000).**

**Many Arab learners who learn the English are unable to see how the content presented from lesson to another is connected. So it is important to help our students to recognize that all concepts are related to one another.**

**A teacher who wants to implement vocabulary to his student can use a variety of methods to heighten students interest, so in this respect the researcher will use the concept mapping method in order to teach her students.**

**The importance of teaching English as a foreign language at schools of the Arab world was confirmed by Nasr (1972,pp133-137) in the following commentary:**

**"The English language is more widely used around the world than ever before. More and more people are using it in business, industry, politics, education, and the various professions. The more widely English is used, the greater is the need to teach it as a foreign language, and the greater the need to teach it, the greater is the need to train teachers to teach it." As a result a number of researchers who were interested in this profession especially, the English language teaching, made several research studies to see the effect of using concept mapping method on students' achievement.**

**This chapter reviews some of the previous studies which are conducted to know the effect of using the concept mapping method on students**

achievement in general, and on their achievement in English in particular. These studies are presented under three main titles:

The first title dealt with the relevant literature concerned with English language teaching.

The second title introduced the relevant literature concerned with other subjects.

The third title introduced Arabic studies.

### **1. First: Relevant studies concerning English language teaching**

Praita ((without year)) tried to study the effects of the use of concept maps on the teaching and learning of English grammar.

The sample of the study consisted of (94) students, in Delhi. A t-test at the beginning of the study was applied to check if the two groups (control, experimental) are comparable. The results of the study showed that the students who were imparted learning experiences through concept map signaled a better performance on their understanding of the concepts of English grammar as compared to the ones taught through commonly prevalent options.

In trying to reveal the effect of using concept mapping on enhancing text comprehension and summarization abilities, (Chang et al, 2002), took a sample consisting of "126" from fifth grade students from four classes in an elementary school in Taiwan.

The group included "60" girls and "66" boys. The four classes were randomly assigned to three experimental groups and one control group. The four groups consisted of 26, 32, 34, and 34 students respectively.

The results of the study showed that the map-correction method enhanced text comprehension and summarization abilities and that the scaffold-fading method facilitated summarization ability.

The map correction strategy worked significantly better for improving the reading comprehension of elementary school students than scaffold-fading and map-generation methods of concept mapping or not using concept mapping strategies at all.

Concept mapping for enhancing text summarization, the post hoc comparison using the Bonferroni method revealed that the map-correction group achieved better scores in the summary post test than the map generation and control groups did, also the scaffold fading group.

The scores on the summary post test for the map generation and control groups did not demonstrate any significant difference.

The map-correction strategy had a significantly greater influence on the participants' text summarization ability than did the map generation method or not using any concept mapping strategy.

The scaffold-fading strategy, in turn was superior to no concept mapping strategy in enhancing the participants' text summarization ability. Finally the text generation abilities of students using the map-generation method were not significantly different from those of students who used on concept mapping

The purpose of a study by Twyman et al (2003) was to describe the positive impact of concept-based instruction on one English language learner in a rural school district. The sample of this study consisted of seventh grade students, (34), they were divided into two groups: experimental and control. In order to achieve the goals of the study the researcher used a unit of instruction that covered four Meso-American civilizations—Olmec, Maya, Aztec, and Inca—using *Our World's Story* (Boehm, Hoone, McGowan, McKinney-Browning, ) and the videotapes.

The results of the study showed that no statistical differences were apparent in the maps created by Students in the experimental versus the control group, statistically significant differences were found between the two groups in their

writing. As the data indicate, the experimental group outperformed the control group on the extended-response essay

Moreover, in their study Chularut and DeBacker (2003) tried to investigate the effectiveness of concept mapping used as a learning strategy with students in English as a Second Language classroom. They chose a sample of "79" students, (47) males and (32) females. (55) of the participants were college undergraduates, while (24) were high school students .

The sample of the study was divided into two groups (a) concept mapping group and (b) individual study plus discussion group, they were placed in two groups, an experimental and a control group. Both groups were given a pre-test and a post-test for the purpose of testing for the effect of concept mapping .

The results of this study showed a statistically significant interaction of time , method of instruction and level of English proficiency for self monitoring self efficacy ,and achievement. The concept mapping group showed significantly greater gains from pre-test to post-test than the individual study group, both groups had significantly higher achievement scores at the post-test compared to the pre-test, but the concept mapping group was found to have significantly greater achievement gains than the individual study plus discussion group.

Moreover, in (2004) Boulineau, et al, tried to examine the use of story-mapping to improve the reading comprehension of six third- and fourth-grade students with specific learning disabilities who exhibited reading deficits. Also of interest was whether the effects would maintain once the intervention was discontinued.

Using a descriptive, three-phased, single-subject design, the effect of story-map instruction on student participants' comprehension of story-grammar elements was monitored. The results of this study suggest that story-grammar instruction improved the participants' identification of story-grammar elements via story-mapping when reading a narrative text.

In his study Ching, L. (2004) used concept maps to gauge students' understanding; this study was tried out in a technical writing classroom at the University of Nanyang. Students were introduced to concept mapping and did a concept map on the topic "Singapore".

The results of the study showed that the concept maps were very helpful to the teacher in providing an insight into students' level of understanding; and also to the students, as it helped them to integrate what they have discussed into their approach to writing their report.

Another example of investigating the effect of using concept mapping on students' achievement, was the study of Wan and Dwyer (2004). Its purpose was to examine the instructional effect of three concept mapping strategies used to facilitate students' achievement of different educational objectives. The sample of the study consisted of "156" college students. These students were randomly divided into four groups.

- 1- The control group.
- 2- The concept identifying mapping strategy group.
- 3- The proposition identifying mapping group.
- 4- The students generated mapping group.

The results of the study showed that:

**1- there were statistically significant differences between the control group and the concept identifying mapping strategy group in all criterion test.**

**2- the significant differences were also between the control group and the students generated mapping strategy group in the identification, terminology and total criterion test.**

**3- there were no statistical significances among the three concept mapping strategy groups.**

**Chapman et al (2006) tried to determine whether memory support and elicited production differentially benefited fast mapping of new vocabulary (comprehension, production accuracy, and speed) in adolescents with Down syndrome (DS) compared with typically developing (TD) children matched for syntax comprehension. The study also examined predictors of individual difference within groups. The sample of the study consisted of 19 adolescents with DS to fast map new noun vocabulary was compared with 18 TD children matched for syntax comprehension.**

**The results of the study indicated that the DS participants' speed of comprehension of fast-mapped words was differentially increased compared with the TD syntax-comprehension-matched group, by memory support. Elicited production improved production fast-mapping for all participants, and memory support improved it in the absence of elicited production. Comprehension predicted individual differences in fast-mapped comprehension in DS.**

**Jose and Rice (2006), in their article discussed some aspects related to the process of text analysis with a concept map aiming at structuring textual knowledge and achieving a better information in the context of teaching technical translation.**

The researchers chose a sample of (14) Francophone students (7 males and 7 females). They were divided into two groups, group (A): concept mapping technique group and group (B): traditional analysis technique group.

The two groups (Gr. A, and Gr. B) were subjected to recall test free recall and recall by questionnaire.

Moreover, the researchers introduced a likert type test composed of nine questions to assess their perceptions of training and to test their perception of text difficulty, background knowledge motivation, clarity of arguments organization, etc. The results of this study showed that the recall average for Gr. A was 50.5% of the text value, while the recall average for Gr. B was 36.42%. This means that the free recall results in a better performance for group A than group B.

In trying to reveal the effect of training in concept mapping on students achievement in a traditional classroom test, Fraser and Edwards (2006), said that students who did not achieve a high level of concept mapping showed no significant improvement in performance on normal classroom end of unit achievement test. Over half of the students who achieve a high level of concept mapping mastery also showed a significant improvement in performance test.

## **2. Second: Relevant studies concerning other subjects and activities**

**Concept mapping has proven to be an effective and useful tool for many subjects.**

**In order to investigate the effect of concept mapping in science on science achievement, Rao (without) chose a sample of (89) eighth grade students' .He divided them into two groups: experimental group (47) and control group (42).**

**The researcher used an achievement test, pre and posttest to achieve the goals of the study. These tools were administered to both experimental and control groups.**

**The results of the study showed that (a) the experimental group had performed better when compared to the control, group on the achievement test, (b) the F values showed that there is a difference between and within the different intelligence groups of the experimental group in their post achievement test, (c) there was no difference observed between girls and boys in their achievement.**

**Laight (without) tried to examine student attitudes to concept maps introduced as a learning resource in large class undergraduate pharmacology lectures in relation to preferred learning style and to subsequently evaluate their facility for 'teaching to all types'. In addition, the relationship between student receptivity to concept maps and student approaches to learning was also of interest.**

**The sample of the study consisted of Pharmacology undergraduates during Stage 2 large class renal pharmacology lectures.**

**The results of the study showed that (A) there was no statistically significant association between the self-reported usefulness of concept maps and any of the (B) There was a statistically significant association between this simplified interpretation of the RASI and the reported usefulness of concept maps.**

In his study, Freeman (without) he used concept maps to assess students' understanding of information systems. Also he tried to make comparisons of the students' maps and to the maps of experts, he provided information regarding how much is remembered from the previous courses and whether the concepts that are remembered. Finally, whether there are major differences between the student maps and the expert maps. The sample of this study consisted of the senior-level, undergraduate IS course.

The results of this study showed that this assignment was found to be fun for the students. Many students commented that they learned a lot from the assignment and they found the assignment enjoyable, especially since it was so unlike any other assignment they were doing at the time.

A study by Bousquet (1982), was focused on the use of concept maps to help students identify logical relationships between a new concept and concepts already known and to compare three versions of concept mapping. The sample of this study consisted of \*114\* students, they were randomly assigned to one of three concept mapping groups: (1) hierarchical-propositional; (2) hierarchical; and (3) propositional.

The results of the study indicate that prior knowledge, cognitive development, and reasoning ability showed little relationship to students' concept mapping performance. For two groups, prior knowledge explained more variability in post-test scores than did cognitive development.

The goal of a study by Bascones & Novak (1985) was to test the effect of Concept mapping on students' problem solving in physics. The teaching process used in this study was based on Ausubel's (1968) theory of meaningful learning. The course was a required physics course taught throughout Venezuela. The design involved two groups. The treatment group had general-to-specific orderings of

content and routine Concept Mapping exercises, while the control group had traditional instructional methods.

The results of this study showed that there was no statistically significant effect of ability. Also it showed large effects in favor of the treatment group on every test administration and at all ability levels.

In (1989), Jegede tried to find out if the metacognitive strategy of concept mapping reduces anxiety and thereby enhances achievement in biology. The sample of the study consisted of (51) senior secondary one (grade 10) students participating in this experiment. In order to achieve the goals of the study the researcher used two instruments--the Zuckerman affective adjective checklist and a Biology achievement test.

The results of the study indicated that concept mapping is significantly more effective than traditional expository strategy in enhancing learning in biology. It has, in addition, positively affected students' anxiety towards the learning of biology.

Schmid and Telaro, (1990) tried to investigate the effectiveness of concept mapping on high school biology achievement and to assess this by studied academic ability level. The subject matter was a unit of biology course on the nervous system. The researchers used two groups: experimental and control group, crossed with three levels of academic ability (high, medium and low).

The results of the study indicated that the helpfulness of concept mapping increased as groups went from high to medium to low ability.

In trying to investigate the effect of the study skill strategies of concept mapping and cooperative learning on students' academic achievement, Seaman (1990), chose a sample of forty fifth grade students, they were placed in three

groups: (1) cooperative concept mapping groups, (2) a standard concept mapping group and (3) a control group. The students studied a science text and were later tested on their learning. The results of the study indicated that the students in both concept mapping groups received higher scores on weekly vocabulary tests and the final unit test than did students in the control group.

The purpose of a study by Schick (1991), was to utilize the concept map, a visual representation of a learner's thought processes, as an assessment tool to evaluate the effects of both bibliographic instruction and Discipline-Based Art Education (DBAE) training on the library skills of elementary art teachers in a visual arts resource center. The sample of this study consisted of \*37\* students. A 2x2 factorial post-test-only control group design was chosen to test for the effects and possible interactions of the two independent variables. The results of the study showed that there were no significant differences at the  $p < 0.05$  level among the mean concept map scores of the four groups under study.

Improving that concept mapping can be used as an effective tool for improving the academic performance of sophomore-level BSN nursing students in an introductory nursing research course, Rooda, (1994) chose a sample consisted of (50) students, they were divided into two groups, experimental group (24) and control group (36). Students developed concept maps following class instruction, handouts, and group practice.

The results of the study showed that:

- (A) No significant differences due to age, overall grade point averages, and gender
- (B) there is statistically significant at 0.001 between groups in favor of the experimental group.

**(C) Overall mean scores were 4.53 and 4.25 for experimental and control groups, respectively. The difference between the mean scores was found to be statistically significant at the 0.001 level ( $t = -6.08$ ,  $df = 97.3$ ).**

**The purpose of study by Esiobu and Soyibo (1995) was to test the effect of concept mapping and vee diagramming in different forms of instruction. The sample of the study was (808) tenth grade high school students in the United States, they were divided into two groups, experimental group (406) students, and the control group (402). They were randomly assigned to their groups.**

**In order to achieve the goals of the study the researchers used a biology achievement test, an ecology achievement test and a genetics achievement test. The results of the study indicated that the students in the experimental group outscored these in the control group in all learning conditions.**

**The goal of Hall and O'Donnell (1996) was to test free recall memory of material presented as either text or as a concept map. The sample of this study were undergraduate psychology (43) class, they were randomly divided into two groups, experimental (22) and control (21) group.**

**Two sets of learning materials were created to describe relationships between the sympathetic and parasympathetic divisions of the autonomic nervous system, one was a regular text, the other a concept map.**

**The results were that the concept mapping group showed better recall for both superordinate and subordinate materials. The concept mapping group reported higher concentration and motivation.**

**The purpose of study by Bolte (1997) was to explore the combined use of concept maps and interpretive essays as a method of assessment in three mathematics courses. The primary objectives were to describe and document: (1)**

the use of concept maps and written essays to assess the connectedness of students' knowledge; (2) the correlation between students' scores on the concept maps and written essays, course exams, and final grades; and (3) the degree to which learning was enhanced through the use of concept maps and written essays. The sample of this study consisted of elementary teachers (N=23), calculus students (N=63), and prospective secondary mathematics teachers (N=17).

The results of the study indicated that concept maps combined with written essays are viable tools for enhancing and assessing students' organization of mathematical knowledge.

In (1997), Ruiz-Primo et al, tried to examine the effect of concept sampling on map scores. The researcher examined two mapping techniques: (1) students generated the 10 concepts from chemistry to construct a map; and (2) the assessor provided a list of 10 concepts. The sample of this study consisted of forty high school students.

The results of the study indicated that: (1) the two mapping techniques were statistically equivalent; (2) students' concept-map scores generalized across samples of concepts; (3) concept maps could be reliably scored, even though they involved complex judgments; and (4) multiple-choice test and concept maps measure somewhat different aspects of science knowledge.

Gerchak et al (2000), tried to investigate the use of concept maps as a process for evaluating students knowledge interaction in industrial engineering. The sample of this study consisted of (46) student ,(22 sophomores, 12 juniors and 12 seniors),

The results of this study showed that:

1. There were significant differences relative to the number of semester completed.
2. There were significant differences among sophomores, juniors and seniors.
3. There were no significant differences with respect to gender.

**4. There were no significant differences between students who indicate that they had work experience versus those who did not have work experience.**

**The purpose of a study by Luchini et al (2000) was to evaluate the efficiency of a teaching approach based on concept maps rather than a classic one. The sample of this study consisted of 145 teachers and 2129 pupils of 5 towns from Northern to Southern Italy (Treviso, Pordenone, Perugia, Palermo and Oristano).**

**The results of the study showed that the teachers who worked on concept-based programs found that class interviews were an excellent tool in highlighting the individual's and the group's knowledge both at the beginning and at the end of the teaching experience.**

**Jessica et al (2000) tried to investigate the use of concept maps as a process for evaluating students' knowledge integration and to develop a quantitative, concise, and expeditiously scoring tool.**

**The sample of this study consisted of sophomore, junior and senior industrial engineering students. The first phase of the experiment began in April 2000 with 46 students (22 sophomores, 12 juniors and 12 seniors). The second phase was conducted in September 2002 with 27 seniors (13 of whom had previously completed the maps as sophomores). In both cases, students were asked to develop maps for the central concept industrial engineering.**

**The results of the study showed that:**

- (A) There were a significant difference among sophomores, juniors and seniors.**
- (B) There was a significant difference relative to the number of semesters completed, the number of industrial engineering courses taken, and the level of work experience.**
- (C) There were no significant differences with respect to gender.**

**(D) There was no significant differences between students who indicated that they had work experience versus those who did not have work experience**

**In their study Chang, et al, (2001) tried to test the benefits for learning of three different kinds of uses of Concept Maps. The design involved four conditions, one control and three experimental, and a pre- and posttest.**

- (A) In the Map Generation group, students constructed a Concept Map for the material from scratch.**
- (B) In the Map Correction group, students were given an “expert-generated” Concept Map for the material, in which some errors had been introduced. Students were to find and correct these errors.**
- (C) In the Scaffold-Fading group, students were progressively weaned from pre-constructed Concept Maps.**
- (D) The control group received no adjuncts at all, just the original text to read and study.**

**The results of this study showed that (A) the map-correction group did better on the (comprehension) post-test than the map-generation and control did. (B) there were no significant between the scaffold-fading, map-generation, and control group.**

**In (2001) Nicoll et al , chose a sample of (20) students to investigate the value of using concept mapping in general chemistry and, more particularly to see if concept mapping would produce a more interconnected knowledge base in students compared to ordinary instruction. Students were divided into two groups, one as the control group which contains five males, and five females, while the other as the treatment group which contains two males and eight females. The subject matter of this study included electron bonding, electro negativity and molecular geometry.**

The results indicated that the concept mapping group (treatment) knew more concept, more linking relationships, and had no more erroneous more than the control group.

Moreover, Paul et al in (2002) tried to examine the effectiveness of using mind map study technique to improve factual recall from written information. Two groups were chosen; self-selected study technique and mind map.

The researcher chose a sample of (50) second and third year medical students. The results of this study indicated that mind maps provide an effective study technique when applied to written material.

Willits (2002) tried to investigate the effectiveness of concept mapping method and learning styles on seventh graders learning geography.

The participants were taught three chapters and tested on each chapter; also delayed recall essay question were given. Then the students were taught the concept mapping method.

The results of this study showed that a statistical significance in the chapter test, but not in the delayed recall answers. All students except one said they would include concept mapping into their study methods.

Zittle (2002) tried to determine the relative effectiveness in producing analogical transfer of studying text, studying a completed concept map, or filling in a blank, but structural concept map.

This study involved three groups, study text (48), study concept map (42), SAFI (selected and fill in concept map 149). All the three groups read the problem text. The text group studied the key points of the problem in text form.

The concept map group studied the same points shown in the form of a completed map. The SAFI group studied using a structural concept map with links filled, but the nodes blank, and was to fill in the content for the concept map.

Then all groups attempted to solve the problems and were given incremental hints until they were successful. The results of the study showed that the text and concept map groups scored higher than the SAFI group

Also in (2002), Cakir et al tried to compare the effects of concept mapping and conceptual change texts instruction over traditional instruction on 10th grade students' understanding of acid and base concepts. The sample of this study consisted of 110 students from 6 classes of a chemistry course. There were four experimental group classes and two control group classes. Two experimental groups classes were instructed with concept mapping instruction; and the other two experimental groups were taught with conceptual change texts instruction and the next two classes were assigned as control group students were instructed according to traditional instruction.

The results of the study showed that concept mapping instruction and the conceptual change texts instruction caused a significantly better acquisition of scientific conceptions related to acids and bases than the traditional instruction. Also, there was no effect of gender difference on understanding of acid and base concepts.

In order to examine the effect of using concept maps as a study tool on the achievement in chemistry, Boujaoude and Attieh (2003), chose a sample of sixty grade 10 chemistry student from a co-educational private high school in Lebanon. They were divided into two sections, these sections were randomly assigned to the experimental and control groups.

To achieve the aims of the study, two tests were used. One of the tests measured students pre-requisite knowledge in topics related to the ones overall during the study. The second test measured students' achievement at the conclusion

of the study. Moreover, the researchers developed an expert concept map and a scoring rubric to monitor students when constructing concept maps.

The results of the study showed that there was a significant difference for the questions at the knowledge level, on which the experimental group scored 8% higher than the control group. On the other hand, no significant differences were found at the comprehension level and application and above level.

There was a significant interaction between group and sex. The mean of the females in the experimental group was 18% higher than that of the females in the control group. Also there was a significant interaction between group and sex at the knowledge level, the mean for the females in the experimental group was 19% higher than that of the females in the control group, while the mean of the males increased by 9%.

In trying to reveal the effectiveness of concept mapping on the science achievement Snead and Young, (2003) chose African American middle grades science students distributed into eight different classes by ability level, they were divided into two groups control and experimental. Also in order to achieve the goals of the study the researchers used pretest-posttest.

The results of the study indicated that there was a statistically significant effect between concept mapping and student achievement among the average ability (lower) level students.

In (2004) Chiu tried to examine the influence of various conflict management mechanisms embedded into computer-supported collaborative concept mapping systems on the behaviors and learning of elementary students. The sample of this study consisted of ninety-six fifth and sixth grade students. Four conflict management mechanisms were compared: an assign design, in which the mapping control was designated to a particular group member; a rotate design, in which the mapping control was rotated among the group members; a give design, in which the

child with mapping control could relinquish control to another group member; and an open design, in which every group member simultaneously had mapping control.

The results of the study indicated that each conflict management mechanism has a different effect on the elementary students.

Hsu (2004) conducted a study to examine the effects of adopting concept mapping in problem based learning (PBL) scenario discussion on learning outcomes in a nursing course. The researcher chose a sample of (92) college students .Class one consisting of (49) students, was assigned to the control group, class two consisting of (43) students, was assigned to the treatment group.

The results of the study showed that the experimental group had significantly higher proposition and hierarchy scores for their concept maps compared with the control group. There were no significant differences in the cross-link and example scores between the two groups.

In their study Shian and Hui-Ju (2004) tried to explore the effect of improving teachers' knowledge of practice when they learn the concept-map method in the Mathematical Teacher Professional Growth Community, also to find out how to use the concept map to improve teachers' professional knowledge, and what was helpful for teachers to use it.

The sample of this study consisted o of 13 math teachers, these teachers were divided into four groups. Once groups were formed, teachers were given concept-maps and directed to use them when designing learning activities, lesson content, and personal reflection of teaching practice. Four dimensions of teachers' knowledge of practice were: (1) teaching activity design, (2) learning content design, (3) implementation in practical teaching, and (4) reflection of teachers.

The results of this study showed that:

- 1. A concept map is a good tool for teachers to prepare and design their teaching activity systematically. It enhances teachers as good curriculum designers.**
- 2. Concept maps strategy enable teachers to communicate their thinking regarding teaching and learning content. It is a useful method to integrate teachers' experiences in the discussion or group working.**
- 3. Concept maps strategy allows teachers to continuously reflect, reconsider, and modify their teaching. It is helpful for teacher to be a good action researcher.**

Moreover, in (2004) Yin et al, make a comparison of two concepts mapping techniques; construct a map with (C) and construct a map with selected linking phrases (S). By sharing (92) eighth graders, (46) were girl and (46) boys.

In the created linking phrases condition students are provided concept and asked to construct a map using self-created linking phrases. In contrast, the selected linking phrases mapping technique supplies students with both linking phrases and concept term; students need to select and assemble the concepts and linking phrases.

The researcher randomly assigned students to one of four mapping sequences:

- 1. CC: constructed a map with created linking phrases then constructed a map again with created linking phrases (n= 26).**
- 2. SS: constructed a map with selected linking phrases then with created linking phrases a gain (n=21).**
- 3. SC: constructed a map with selected linking phrases then with created linking phrases (n= 23).**
- 4. CS: constructed a map with created linking phrases then with selected linking phrases (n=22).**

The results indicated that the two mapping techniques are not equivalent: the (C) technique is better than the (S) technique in capturing student's partial

knowledge, even though the (S) technique can be scored more efficiently than (C). The (C) technique is more suitable for formative assessment while the (S) technique is better fit for large scale assessments.

In his study Graff (2005) tried :

(A) To attempt to confirm previous findings on recall performance by users with different cognitive styles in different hypertext architecture conditions.

(B) To investigate differences in the density and complexity of the concept maps produced by individuals possessing different cognitive styles.

(C) To investigate differences in perceived usability of different hypertext architectures.

The sample of this study consisted of \*55\* students (46) males and (9) females, they were first year undergraduate students from three classes, studying computer science.

The results of this study are presented in three sections: for recall, for the concept mapping task, and finally for the hypertext usability scores.

**Recall:** No significant main effects could be observed for architecture or cognitive style, although a significant interaction effect was observed ( $F[4, 46] = 3.04, p = .02$ ).

**Concept mapping task:** No significant effects were observed for cognitive style, although the greatest variation in density scores occurs for the intermediates.

**Hypertext usability:** No significant differences were noted.

The purpose of a study by Jitlakoat (2005) was to study the effectiveness of concept mapping on nursing competencies of primary medical care among fourth year Assumption University nursing students.

The samples of this study were: (15) fourth year nursing students who studied primary medical care subject and primary medical care practicum.

The results of the study showed that level-nursing competencies of primary medical care in the respondents before and after participating in research activities were significantly different ( $P=0.00$ ). Evidently, participants had improved their primary medical care competencies in all aspects.

Concept maps are also used in collaborative learning, to improve this idea, (Kinchin & Hay, 2005) tried to stimulate interest in practical classroom application of concept mapping strategy as an approach to enhance collaborative learning. They chose students on a postgraduate teacher preparation program for nurses. The sample of this study was Students on a postgraduate teacher preparation programmed for nurses, were arranged in triads on the basis of the morphology of individually-produced concept maps for the topics of 'genetics' and 'pathogenic microbes'.

The results showed that the participants arranged in triads of individuals having very different knowledge structures were found to make a greater improvement than those arranged in triads composed of individuals with qualitatively similar knowledge structures.

Lee and Nelson (2005) tried to investigate the effects of two types of maps (generative vs. completed) and the amount of prior knowledge (high vs. low) on well-structured and ill-structured problem-solving performance. The sample of this study consisted of (44) undergraduates in an introductory instructional technology course; they were randomly divided into two treatments that used generative and completed concept maps.

The results of the study indicated that the participants were differentiated by prior domain knowledge, high or low. Although the high knowledge-generative group outperformed the other three groups on well-structured problem-solving performance, it did not have an effect on ill-structured problem-solving performance.

Lin et al (2005) tried to examine the effects of computer-based concept mapping as a prewriting strategy for middle school students' persuasive writing in the language arts classroom. The researcher chose a sample of 278 eighth-grade language arts/English students 51% were female and 49% were male.

The researchers used two assessment instruments in this study: the State of Idaho's Direct Writing Assessment rubric (DWA) and a concept map rubric developed by the Center of Electronic Studying at the University of Oregon

The results of this study showed that: Computer-based concept mapping was shown to enhance idea generation and the total quality of the students' prewriting concept maps in preparation for a persuasive writing task. Contrary to expectation, the students who generated paper-and-pencil concept maps scored better in persuasive writing according to the criteria contained in the state-authorized writing rubric than the students who generated computer-based concept maps

In order to be able to inquire the effect of conceptual change texts accompanied with concept mapping instruction, compared to traditional instruction (TI), on 8th grade students' understanding of solution concepts and their attitudes toward science as a school subject, Uzuntiryaki et al, (2005) chose a sample of (64) students from two classes of a general science course. The students were divided into two groups (experimental and control). The experimental group received the conceptual change texts accompanied by concept mapping in a lecture by the teacher. While the control group received traditional instruction in which the teacher provided instruction through lecture and discussion methods.

The results showed that conceptual change text accompanied by concept mapping instruction caused a significantly better acquisition of scientific conceptions related to solution concept and produced significantly higher positive attitudes toward science as a school subject than the traditional instruction.

**In their study Wachanga and Orora (2006) tried to investigate the effects of using the cooperative concept mapping (CCM) teaching approach on secondary school students' motivation in biology.**

**The sample of this study consisted of 156 second grade students in the secondary school cycle, in Gucha District, Kenya. They were divided into four groups, two experimental and two control groups, as follows:**

**Group I (Experimental group) N = 43**

**Group II (Control group) N = 45**

**Group III (Experimental group) N = 38**

**Group IV (Control group) N = 30**

**The results of the study showed that:**

**(A) Students exposed to the cooperative concept mapping approach have significantly higher motivation than those taught through regular methods.**

**(B) That there is no statistically significant gender difference in motivation towards the learning of biology among secondary school students exposed cooperative concept mapping**

**In their study Vakilifard and Armand. (2006) aimed at observing the effects of an instructional sequence, based on the most effective approaches tested in first language on informative text comprehension in French as a second language.**

**The sample of this study consisted of 18 students. They were assigned to either an experimental group (9) or a control group (9). The instrument of this study was a questionnaire composed of 10 items.**

**The results of the study showed that the experimental group demonstrated better performance in comprehension tasks than the group having used the traditional approach.**

The results of the auto-questionnaire indicate that almost all the members of the experimental group pointed out that the use of the concept map led them to better understand the text by presenting first of all, the organization and the structure of the text, and then , by identifying the principal ideas presented in the text .

The purpose of a study by Zepur (2006) was to explore the effect of concept mapping, as a metacognitive teaching strategy on the critical thinking skills and dispositions of junior and senior level baccalaureate nursing students, also to evaluate the changes in students' concept mapping skills over time.

The sample of this study consisted of (77) students, they were divided into two groups: (32) Students in the experimental group and (45) students in the control group.

The results of the study showed that there was no statistically significant difference in group means between the experimental group and the control group, on posttest critical thinking skills and on posttest critical thinking disposition.

Wang (2006) tried to explore the instructional effects of prior knowledge and three concept mapping strategies in facilitating achievement of different educational objectives. The subject matter was a 2,000 word expository text about the physiology and functioning of the human heart. The experimental population included "290" undergraduate students from a large comprehensive state university.

The experimental population was divided into four experimental treatments:

T1: control, n = 42.

T2: concept matching mapping, n = 50.

T3: proposition identifying mapping, n = 44.

**T4: students generated concept mapping, n = 46.**

**"182" sets of data were used for hypothesis testing by using MANOVA with the alpha level set at .05.**

**The result of the study showed that: Among the subjects identified as possessing low prior knowledge:**

**T2: achieved significantly higher scores than the control on the entire criterion test.**

**T3: achieved significantly higher scores than the control group on the criterion test of terminology and on the total test.**

**T4: achieved significantly higher scores than the control ( T1 ) on the terminology criterion test.**

**Regarding the significant differences found on the terminology and students generated concept matching mapping T2 was the most effective, and students generated concept mapping T4 was the least effective.**

**Natalia et al (2007), tried to examine the effects of map structure, concept quantification, and focus question on dynamic thinking during a Concept Map construction task by using three experiments groups.**

**The first experiment compared cyclic and hierarchical structures, the sample of this experiment consisted of ((112)) undergraduate university students. The aim of Experiment 1 was to compare cyclic and hierarchical structures. The results showed that there was a significant difference in maps dynamic score between the cyclic structure and the tree structure and also between the cyclic structure and the cross-link structure .**

**The second experiment examined the impact of the quantification of the header concept in the map, the sample of this study consisted of (75) undergraduate university students. It was designed to examine the effect of concept quantification.**

The results of the second experiment demonstrate that concept quantification is a very powerful technique for encouraging dynamic thinking in concept maps—more powerful than the cyclic structure.

The third experiment explored the effect of the focus question on the map. For all three experiments, the content of the CMaps was assessed for the number of dynamic propositions and the number of quantified concepts. The sample of this study consisted of ((81)) undergraduate university students. The results of this study showed that there were no significant differences for the concept quantification scores of the two conditions.

The purpose of a study by Asan (2007) was to determine the effects of incorporating concept mapping on the achievement of fifth grade students in science class. The study was conducted with twenty-three students at Ata Elementary School, Turkey. The students were tested with teacher-constructed pre- and post tests containing 20 multiple-choice questions. The pupils in the experimental and control groups were exposed to the same teaching techniques covering a unit on heat and temperature. They were given the same pretest after the initial lessons. However, after the pretest, the control group was given a traditional oral review of the material and the experimental group was exposed to the review by the use of Inspiration, which is computer based concept mapping tool. After these reviews, the students on both groups were given the posttest. Test scores were analyzed for any statistically significantly difference in the scores on the test. The results from present study indicate that concept mapping very effective in teachin

### **3. Third: Arabic studies.**

In a study (without year ) aimed at investigating the effective of using Vee Mapping of Teaching Science on the achievement and acquisition of science processes for Ninth-Grade Students. The sample of this study consisted of (147) ninth-grade students from Ahmed bin Saeed Basic Education School-Cycle two in Batinah North Oman. The sample was randomly divided into two groups: the experimental group which was taught by Vee Mapping and consisted of (74) students. The second group was the control group which was taught by conventional or normal method and it consisted of (73) students.

To achieve the goals of the study, the researcher prepared two tools, an achievement test which consisted of (26) questions which were in multiple-choice, completion and short essays question forms.

Te results of the study showed that:

(A) there are statistically significant differences between the two groups in favor of the experimental group, in the achievement test

(B) there are statistically significant differences in acquisition of science processes as a whole and in the process of interpreting data, deduction, classification, prediction, controlling variables and formulating hypothesis.

(C) There was no significant differences in the skills of observation and using numbers.

In (1998) القاروط tried to examine the effect of using concept mapping on the achievement of Biology in tenth grade students. She chose a sample of (141) students. They were divided into four sections in four schools (2 for males and 2 for females). They were divided into four groups, (2 experimental and 2 control) .

To achieve the aims of the study the researcher used an achievement test. The results of the study showed that:

**(A) There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group in the achievement test in favor of the experimental group.**

**(B) There was no statistical significant difference at ( $\alpha =0.01$ ) in the interaction between gender and group.**

**(C) There was no statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group due to gender.**

**(D) There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group on the delayed achievement in favor of the experimental group.**

**(F) There was no statistical significant difference at ( $\alpha =0.01$ ) between the means of the students on the delayed achievement due to gender.**

Moreover, in her study, زلوم, (2000) tried to investigate the effect of concept mapping method on the achievement and retention of concepts in the topic water. The sample of the study consisted of (162) students (male and female) who were divided into two groups, experimental group which consisted of (82) students, and the controlled group which consisted of (70) students. To achieve the aims of the study the researcher used an achievement test.

The results of the study showed that (a) there were significant differences due to sex, treatment and interaction between them at the pretest (b) there was a significant difference due to the treatment in favor of the concept mapping method.

To investigate the effect of using two concept maps in teaching mathematics on students achievement , البرواني ( 2002) chose a sample of (84) students, they were divided into three groups, one control group and two experimental groups, one group was study by using general concept maps and the

other by using programmed concept maps. To answer the questions of the study the researcher used an achievement test.

The results of the study showed that:

There was no statistical significant difference at ( $\alpha =0.05$ ) between the means of the students who studied by using general concept maps and the traditional one.

There was a statistical significant difference at ( $\alpha =0.05$ ) between the means of the students who studied by using programmed concept maps and the traditional one.

There was no statistical significant difference at ( $\alpha =0.05$ ) between the means of the students who studied by using programmed concept maps and the general concept maps.

In (2002), الدوسري tried to investigate the effect of using concept mapping on the achievement and acquiring information of fifth grade students in history. The sample of this study consisted of 56 students, they were divided into two groups, experimental group(27) and control group (29).In order to achieve the goals of the study the researcher used an achievement test, a pre-test and post-test.

The results of the study showed that:

Teaching by using concept mapping has an effect in acquiring information due to the experimental group.

Teaching by using concept mapping has no effect on achievement.

In trying to investigate the effect of using the concept mapping method on the achievement of third grade students in science, ميكي (2002) chose a sample consisted of 58 students, they were divided into two groups, experimental and control.

In order to achieve the goals of the study the researcher used an achievement test, also she used pre-test and post-test. To test the hypotheses of the study the researcher used (Tow-way ANOVA) and Newman-Keules Test.

The results of the study showed that:

(A) That there was a significant difference between the experimental and controlled groups in the achievement test in favor of the experimental group.

(B) That there was a significant difference between the experimental and controlled groups in the achievement test due to the level of the achievement.

(C) That there was a significant difference between the experimental and controlled groups in the achievement test due to the interaction between the teaching method and the level f the achievement .

In (2003) السيد tried to investigate the effect of using concept maps collaborative in teaching science on sixth grade student's achievement, attitudes, achievement motivation and self-esteem.

The sample of this study consisted of (60) students (female), they were divided into two groups, experimental and control group. In order to achieve the goals of the study the researcher used these instruments: teacher book, an achievement test in science, attitude scale of Tows , attitude scale of Coopersmith , also he used two test one for achievement motivation and the other for self-esteem.

The results of the study showed that:

There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group in the achievement test in favor of the experimental group.

**There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the control group in the achievement test and post-test in favor of the post-test.**

**There was no statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group in the post-test and the pre-test.**

**There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group in the post-test in favor of the experimental group.**

**There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group in the attitude scale in the post-test in favor of the experimental group.**

**There was a statistical significant difference at ( $\alpha =0.01$ ) between the means of the students of the experimental group and control group in the in the post-test in favor of the experimental group.**

**In (2003) السراني tried to investigate the effect of using concept maps in teaching Biology (101) on student's achievement and attitudes. The sample of this study consisted of (75) students, they were divided into two groups, experimental and control group.**

**In order to achieve the goals of this study the researcher used an achievement test, and to test the hypotheses of the study the researcher used ANCOVA.**

**The results of the study showed that:**

**(A) There was a significant difference between the experimental and control groups in the achievement test in favor of the experimental group.**

**(B) There was no statistical significant difference at ( $\alpha =0.05$ ) between the means of the students attitudes due o the group of teaching.**

In order to examine the effect of using concept maps on the development of some physics concepts by secondary school first year female students and the extent to which they retain these concepts, ميفا (2003) chose a sample of (124) secondary school first year female students representing four classes. The experimental groups' random design was used by having three study groups. The first experimental group students (with previous training of preparing them) were taught by using concept maps. The second experimental group students (without previous training of preparing them) were also taught by using concept maps.

However, the students of control group were taught by using the traditional method

To achieve the aims of the study an achievement test was designed to measure the extent of physics concepts being developed by female students and the extent to which they retain these concepts.

The results of the study indicated that the achievement of the secondary school first year female students in the two experimental groups taught by using concept maps (with and without previous training of preparing them) was better than those of their peers in the control group. Further, there was no statistically significant difference between the achievements of the two experimental groups of students

The first experimental group students, taught by using concept maps with training on how to retain information, were found superior comparing to their peers in the control group

There was no statistical significant difference between the retention of students of both the experimental groups. The overall academic level of students indicated no statistically significant effect on their retention of information. Finally, the interaction between using concept maps and the overall academic level of secondary school first year female students showed no statistically significant effect on their retention of the covered information in the learned topic.

In her study أبو دلاخ (2004) aimed at investigating the impact of using concept circle diagrams strategy on achievement motivation, test anxiety, and immediate and long term achievement of ninth grade students in minerals , rocks and another natural recourses subject in chemistry and earth science.

The sample of this study consisted of (155) students, they were divided into four sections, and in order to achieve the goals of the study the researcher prepared an achievement test, also she used an achievement motive scale.

The results of the study showed that:

- \* There were statistical significant differences at ( $\alpha =0.01$ ) between scientific achievement means of the students of the experimental group and the control group in favor of the experimental group.
- \* There was no statistical significant differences at ( $\alpha =0.01$ ) between scientific achievement means due to gender.
- \* There was no statistical significant differences at ( $\alpha =0.01$ ) between scientific achievement means due to the interaction between teaching method and gender.
- \* There were statistical significant differences at ( $\alpha =0.01$ ) in the achievement motive means of the students the experimental group and control group in favor of the experimental group.
- \* There were statistical significant differences at ( $\alpha =0.01$ ) in the achievement motive means duo to gender.
- \* There were statistical significant differences at ( $\alpha =0.01$ ) in the achievement motive means duo to the interaction between teaching method and gender.
- \* There were statistical significant differences at ( $\alpha =0.01$ ) in the achievement motive means of the students de to time, in favor of immediate achievement motive scale.
- \* There were statistical significant differences at ( $\alpha =0.01$ ) in test anxiety mean of the students between the experimental group and control group in favor of the experimental group.

\* There were statistical significant differences at ( $\alpha =0.01$ ) in test anxiety mean of the students due to gender, in favor of females in experimental and control group.

\* There was no statistical significant differences at ( $\alpha =0.01$ ) in test anxiety mean of the students due to the interaction between teaching method and gender.

\* There was no statistical significant differences at ( $\alpha =0.01$ ) in test anxiety mean of the students due to time.

\* There were statistical significant differences at ( $\alpha =0.01$ ) for each of the teaching method and gender on the interaction between dependant variables; scientific achievement, achievement motive and test anxiety.

\* There were no statistical significant differences at ( $\alpha =0.01$ ) for the interaction between teaching method and gender on the interaction between dependant variables: scientific achievement, achievement motive, and test anxiety.

ألرحمة , (2004) tried to investigate the learning cycle and concept mapping strategies in the first secondary scientific stream students' achievement in science. The sample of this study consisted of (110) students, and they were divided into four groups, group one was taught by using the traditional method, group two was taught by using learning cycle, group three was taught by using concept mapping method, and the fourth group was taught by using the interaction between the cycle learning and the concept mapping method.

The results of the study showed that: there was a significant difference between the students who studied in the interaction between the cycle learning and the concept mapping method, and the students who studied in the traditional, concept mapping and the cycle learning in favor of the interaction between the cycle learning and concept mapping method.

That there was no significant difference due to the interaction between the teaching method (the traditional, cycle learning, concept mapping and the interaction between the cycle learning and the concept mapping method).

In his study الخوالدة (2005) aimed at answering the following questions:

1– What is the effect of teaching via concept mapping on undergraduates majoring in class teaching achievement in Biology and Health concepts?

2– What is the effect of teaching via concept mapping on scientific thinking of undergraduates majoring in class teaching?

The sample of this study consisted of two sections of undergraduates majoring in class teaching in Al Al–Bayt University. They were divided into an experimental group (73 Sts) and a control group of (69) students.

The results of the study showed that:

1–The means of performance of undergraduates on the experimental group achievement in Biology and Health concepts on the post test was more than that of undergraduates in the control group at ( $p= 0.001$ ).

2–The means of performance of undergraduates on the experimental group on the scale of post–scientific thinking skills was more than that of undergraduates in the control group at ( $p = 0.001$ ).

In trying to investigate the effectiveness of the modified learning cycle and concept mapping strategies in the first secondary scientific stream students' achievement in Biology and in their acquisition of science process skills compared to the conventional method of teaching Biology. الخوالدة (2007) chose a sample consisting of 280 in six sections in two governmental schools in Mafraq; (A girl school and a boy's school). They were divided into three groups, two experimental groups and one control group.

The results of the study indicated that:

(A) There were statistically significant differences in the first secondary scientific stream students' achievement due to the teaching strategy. Superiority was on the part of students taught by the modified learning cycle strategy and concept

**mapping strategy compared with those taught through the conventional method but an equal effect of the modified learning cycle strategy and concept mapping strategy was traced.**

**(B) There were statistically significant differences in the first secondary scientific stream students' acquisition of science process skills attributed to the teaching strategy. The students taught through the strategy of modified learning cycle were superior to those taught through the conventional method and the concept mapping strategy but an equal effect of the concept mapping strategy and conventional method was traced.**

## **Chapter three**

### **Procedures**

### Chapter three

This study aimed at investigating the effect of using concept mapping method on the achievement of English foreign language vocabulary in second grade students at Southern Hebron.

This chapter presented the population, sample of the study, instruments, variables of the study, and the statistical analysis that the researcher used for testing the hypotheses of the study.

#### 1. Population of the study

The population of the study consisted of all second grade students (male and female) at Southern Hebron Directorate for the academic year (2006 – 2007).

According to the records and registers of the Ministry of Education, the total number of the students in the year (2006-2007) was about (5454) male and female, (2767) were male and (2687) were female.

Table No.(3.1) Distribution of schools, groups and section of classes.

School name	Othman basic school for boys		Khawla basic school for girls	
Teaching method	The traditional method	Concept mapping method	The traditional method	Concept mapping method
Class section	B	A	A	B
Students number	32	32	32	32

## 2. Sample of the study

The sample of this study consisted of (128) boys and girls of second graders. The researcher selected two schools; these two schools were Othman basic school for boys and Khawla basic school for girls. \* 64\* second graders were distributed in two classes, in the boys school \*32\* in second grade \*A\*, and \*32\* in second grade \*B\*. On the other hand \*64\*girls were distributed in two classes, \*32\* in second grade\*A\*, and \*32\* in second grade \*B\*. As is clarified in table No. (3.2). While

Table No. (3.2) Sample Distribution by gender.

Gender	Number of students	Percent
Male	64	50%
Female	64	50%
Total	128	100%

## 3. Procedures

The researcher prepared an achievement test in English language, (Appendix .1).

The achievement test was send to a committee of English language teacher, (Appendix, 2), to revise it and to suggest things to be added or deleted, all of them agreed that it was a good English test and some of them suggested to change some of the questions. Moreover; this test was used as a pre-test and post-test.

The researcher got a recommendation letter from the gradate studies in Al-Quds University to facilitate her work, after that the researcher got a permission from the Directorate of Education at Southern Hebron for applying her research in its schools.

The researcher held a meeting with the teachers who were participating in the training session of concept mapping method which was conducted by the ministry of education and chose two of them to teach the experimental groups by using the concept mapping method.

The researcher prepared daily plans (appendix, 3) for teaching three units from the students book, units two, three and four, with the help of the two teachers, who taught the experimental group by using the concept mapping method.

The study was applied during four weeks. Two teachers from both schools cooperated to teach English vocabulary to second grade students by using concept mapping method to the experimental groups, and to the control groups by using the traditional method.

#### **4. The study design**

The point of this research was to determine the effects of using the concept mapping method in teaching the vocabulary of the English as a second language.

As a result the researcher used the experimental approach.

This study included the following variables:-

The independent variables: which included the

1. Teaching method (( method of using concept mapping and the traditional method in teaching vocabulary)).
2. Sex, ( male and female) students.

The dependent variable, which included learning the vocabulary of unit 2, 3 and 4 in students book.

#### **5. Instrument of the study**

To achieve the aims of the study the researcher used an achievement test, appendix ((1)) and some work sheet appendix ((4)). The achievement test was send to a

**committee of English language teacher, (Appendix, 2), to revise it and to suggest things to be added or deleted, all of them agreed that it was a good English test and some of them suggested to change some of the questions**

## **6. Test Validity**

**The achievement test was judged by a committee of English language teachers, appendix ((2))**

## **7. Test reliability**

**The researcher used test and retest, after correcting the test which was applied after two weeks of the study the results were analyzed by using Pearson correlation. The reliability of the test reached about (0.89).**

**Chapter Four**  
**Results and Discussion**

## **Chapter Four**

### **Results and Discussion**

**The main purpose of this study was to investigate the effect of using concept mapping method on the second grade students' achievement.**

**Also, this study aimed at investigating the effect variables such as gender, teaching method and the interaction between the teaching method and group.**

**This chapter presents the results which are related to the students achievement in the pre-test and post-test.**

**In order to investigate the hypotheses of this study the researcher used the means, standard deviations and (ANCOVA).**

#### **1- The results of the first question**

**Is there a statistically significant effect of using concept mapping method on vocabulary achievement of second grade students who learn EFL due to their group?**

**And in order to answer this question, the researcher used the means and stander deviation for the students achievement in the pre-test and post-test as the following table shows (4.1)**

**Table No.(4.1) Means and Standard Deviation of the Students Achievement in the pre-test and post-test due to group.**

<b>Group</b>		<b>Pre-test</b>	<b>Post-test</b>
<b>Control</b>	<b>Mean</b>	<b>38.3281</b>	<b>39.0156</b>
	<b>Number</b>	<b>64</b>	<b>64</b>
	<b>Std. Deviation</b>	<b>13.0007</b>	<b>13.0912</b>
<b>Experimental</b>	<b>Mean</b>	<b>39.6094</b>	<b>55.2031</b>
	<b>Number</b>	<b>64</b>	<b>64</b>
	<b>Std. Deviation</b>	<b>15.8811</b>	<b>13.7173</b>
<b>Total</b>	<b>Mean</b>	<b>38.9688</b>	<b>47.1094</b>
	<b>Number</b>	<b>128</b>	<b>128</b>
	<b>Std. Deviation</b>	<b>14.4696</b>	<b>15.6327</b>

And in order to know if there is an effect in using the concept mapping method on the students achievement the researcher used analysis of covariance (ANCOVA) as the following table shows (4.2)

**Table N0.(4.2) ANCOVA results for the differences in the effect of using concept mapping method on the student's vocabulary achievement in English as a foreign language in the vocabulary achievement test due to group, gender and the interaction between group and gender.**

<b>Source</b>	<b>Type II Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig</b>
<b>Corrected Model</b>	<b>28210.757</b>	<b>4</b>	<b>7052.689</b>	<b>306.996</b>	<b>0.000</b>
<b>Intercept</b>	<b>2703.033</b>	<b>1</b>	<b>2703.033</b>	<b>117.660</b>	<b>0.000</b>
<b>Before</b>	<b>17024.601</b>	<b>1</b>	<b>17024.601</b>	<b>741.061</b>	<b>0.000</b>
<b>Group</b>	<b>7309.309</b>	<b>1</b>	<b>7309.309</b>	<b>318.166</b>	<b>0.000</b>
<b>Gender</b>	<b>457.277</b>	<b>1</b>	<b>457.277</b>	<b>19.905</b>	<b>0.000</b>
<b>Group*Gender</b>	<b>390.113</b>	<b>1</b>	<b>390.113</b>	<b>16.981</b>	<b>0.000</b>
<b>Error</b>	<b>2825.712</b>	<b>123</b>	<b>22.973</b>		
<b>Total</b>	<b>351506.000</b>	<b>128</b>			
<b>Corrected Total</b>	<b>31036.469</b>	<b>127</b>			

**\*0\* Significant at ( $\alpha = 0.05$ ).**

We can see from table No.(4.2). that (F) between the control and experimental group is ((318.166)) and the significant is ((0.000)) and it is less than ((( $\alpha = 0.05$ )))and this mean that there is a differences between the control and experimental group, and table No. (4.4) shows modified standard means of the students achievement on the post-test due to their group

**Table No. (4.3) Modified standard means of the students achievement on the post-test due to their group.**

**Table No. (4.3).Dependant Variable: AFTER**

<b>GROUP</b>	<b>MEAN</b>	<b>Std.Error</b>
<b>Control</b>	<b>39.537</b>	<b>.599</b>
<b>Experimental</b>	<b>54.682</b>	<b>.599</b>

And from table No. (4.3) we can see that the modified standard means of the students achievement in the experimental is ((54.682)) and the modified standard means of the students achievement in the control group is ((39.537)) and this show that the difference on the achievement test was in favor of the experimental group.

This result a greed with the results of most of the previous experimental studies such as Kuo et al (2002), Chularut and DeBacker (2003), Wan and Dwyer ( 2004 ), Jose and Rice (2006), Bousquet (1982), Schmid and Telaro, (1990), Seaman (1990), Schick (1991). They also agreed with other Arabic studies such as ميقا (2003) and أبو دلاخ (2002).

The results of the first hypothesis indicated that the students achievement was affected too much by the use of the concept mapping method in teaching English.

The researcher thinks that the teachers accept the new methods in teaching English because thy find it so attractive method in teaching their students. This may also be due to the influence of teachers who accept the new techniques. Also, the use of the concept mapping method in classroom stimulates learners.

## **2-The results of the second hypothesis**

There are no statistical significant differences at the point of ( $\alpha =0.05$ ) in the means of the second grade students achievement of EFL vocabulary due to gender.

From going back to table No. (4.2) we can see that (F) for the variable gender is (19.905) and the significant is (0.000), and it's less than ( $\alpha = 0.05$ ) and this means that there was a difference between male and female. And table No. (4.4) shows modified standard means of the students' achievement on the post-test due to gender.

**Table No. (4.4). Dependent Variable: AFTER**

gender	Mean	Std.Error
Male	45.173	.602
Female	49.046	.602

And from table No. (4.4) we can see that the modified standard means of the students' achievement for the male was (45.173) and the modified standard means of the students' achievement for the female was (49.046), and this shows that the difference on the achievement test was in favor of the female.

This result agrees with the results of most of the previous experimental studies such as Zittel (2002), Gallenstein (2005) and Kang.

So, as we see that results of the second hypothesis didn't support the second hypothesis. The researcher thinks that the differences between students' achievement in favor of female was because the female in the Palestinian society used to stay at home and that they have a lot of time, so they spend much of their time in reading and in doing their homework. Moreover; female students work hard more than male students, female students are eager to achieve high grades in exams.

### **3- The result of the third hypothesis**

There are no statistically significant differences at the point ( $\alpha = 0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to the interaction between group and gender.

The findings of the third hypothesis didn't support the third hypothesis which indicated no difference of statistical significance at ( $\alpha =0.05$ ) in the means of second grade students on the achievement of EFL vocabulary due to the interaction between gender and the group. From going back to table No. (4.2) we can see that (F) for the interaction between group and gender was (16.981), and the significant was (0.000), and its less than ( $\alpha =0.05$ ) and this show that the difference on the achievement test was in favor of the female students in the experimental group .And table No. (4.5) show the modified standard means of the students achievement on the post-test due to the interaction between group and gender.

**Table No. (4.5). Dependant Variable: AFTER**

Group * gender		Mean	Std.Error
Control	Male	39.355	.848
	Female	39.719	.847
Experimental	Male	50.990	.852
	Female	58.373	.856

And from table No. (4.5) we can see that the modified standard means of the male student in the control group was (39.355), and in the experimental group was (50.990). Also, the modified standard means of the female students in the control group was (39.719) while in the experimental group was (58.373).

**Figure No.(1.4). Modified standard means of After. The interaction between group and gender.**



The researcher attributes the results of the means of the females students achievement in the experimental group (58.373) which was higher than the means of the female students in the control group (39.719) that female students work hard more than male students, female students are eager to achieve high grades to prove that there is no difference between them and male students whom their means in the control group was (39.355), while in the experimental group was(50.990) . As figure No.(1.4) show the interaction between group and gender.

## **Summary**

**Chapter four dealt with the data analysis and their results.**

**The results of each hypothesis were clarified statistically by using the different tables that indicated them.**

**The results of the first hypothesis indicated that there was a significant difference between the experimental and control groups in the achievement test in favor of the experimental group.**

**The results of the first hypothesis indicated that the students achievement was affected too much by the use of the concept mapping method in teaching English.**

**The researcher thinks that the teachers accept the new methods in teaching English because they find it so attractive method in teaching their students. This may also be due to the influence of teachers who accept the new techniques. Also, the use of the concept mapping method in classroom stimulates learners.**

**The results of the second hypothesis didn't support the second hypothesis which indicated that there was no difference of statistical significance at ( $\alpha = 0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to gender. The means of the female student's achievement is (50.75) and the male student's achievement is (43.46). The statistical significance is \*0.000 which is less than (0.05) this means that the difference is significant in favor of female students**

**The findings of the third hypothesis didn't support the third hypothesis which indicated no difference of statistical significance at ( $\alpha = 0.05$ ) in the means of second grade students on the achievement of EFL vocabulary due to the interaction between gender and the group. The means of the male student's achievement in the control group is (38.31) and in the experimental group is (48.62). Also, the means of the female in the controlled group is (39.71) and in the experimental group is**

**(61.78). The statistical significance is \*0.000 which is less than ( $\alpha = 0.05$ ) it means that it is significant**

**Chapter Five**  
**Conclusion and Recommendations**

## **Chapter Five**

### **Introduction**

The study aimed at investigating the effect of using concept mapping method in teaching English vocabulary to second grade students. The study also aims to deduct the effect of numbers of variables (group, gender and the interaction between group and gender).

This chapter dealt with the results related to the three following hypothesis:

- 1. There is no statistical significant difference at ( $\alpha =0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to group.**
- 2. There is no statistical significant difference at ( $\alpha =0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to gender.**
- 3. There is no statistical significant difference at ( $\alpha =0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to the interaction between group and gender.**

**The results of the previous hypothesis were presented as follows:**

#### **1- Results of the first hypothesis:**

The findings of the first hypothesis didn't support the first null hypothesis, the results of the first hypothesis indicated that there was a significant difference between the experimental and control group in the achievement test in favor of the experimental group.

These results agreed with the results of most of the previous experimental studies such as Kuo et al (2002), Chularut and DeBacker (2003), Wan and Dwyer ( 2004 ), Jose and Rice (2006), Bousquet (1982), Schmid and Telaro, (1990), Seaman (1990),

Schick (1991). They also agreed with other Arabic studies such as Boujaoude and Attieh (2003) and Majeda (2003).

The results of the first hypothesis indicated that the students achievement was affected too much by the use of the concept mapping method in teaching English.

The researcher thinks that the teachers accept the new methods in teaching English because they find it so attractive method in teaching their students. This may also be due to the influence of teachers who accept the new techniques. Also, the use of the concept mapping method in classroom stimulates learners.

## **2- Results of the second hypothesis:**

The results of the second hypothesis didn't support the second hypothesis which indicated that there was no difference of statistical significance at ( $\alpha = 0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due to gender. The means of the female student's achievement is (50.75) and the male student's achievement is (43.46). The statistical significance is \*0.000 which is less than (0.05) this means that the difference is significant in favor of female students

This result agreed with the results of most of the previous experimental studies such as Zittel (2002), Gallenstein (2005) and Kang.

So, as we see that results of the second hypothesis didn't support the second hypothesis. The researcher thinks that the differences between students achievement in favor of female was because the female in the Palestinian society used to stay at home and that they have a lot of time, so they spend much of their time in reading and in doing their homework. Moreover; female students work hard more than male students, female students are eager to achieve high grades in exams

## **2- The results of the second hypothesis**

Also the findings of the second hypothesis didn't support the second null hypothesis which indicated that there was no difference of statistical significance at ( $\alpha = 0.05$ ) in the means of the second grade students on the achievement of EFL vocabulary due

to gender. The means of the female student's achievement is (50.75) and the male student's achievement is (43.46). The statistical significance is \*0.000 which is less than ( $\alpha = 0.05$ ) this means that the difference is significant in favor of female students.

So, as we see that results of the second hypothesis didn't support the second hypothesis. The researcher thinks that the differences between students achievement in favor of female was because the female in the Palestinian society used to stay at home and that they have a lot of time, so they spend much of their time in reading and in doing their homework. Moreover; female students work hard more than male students, female students are eager to achieve high grades in exams.

### **3- Results of the third hypothesis:**

The findings of the third hypothesis didn't support the third hypothesis which indicated no difference of statistical significance at ( $\alpha = 0.05$ ) in the means of second students on the achievement of EFL vocabulary due to the interaction between gender and the group. The means of the male student's achievement in the control group is (38.31) and in the experimental group is (48.62). Also, the means of the female in the controlled group is (39.71) and in the experimental group is (61.78). The statistical significance is \*0.000 which is less than ( $\alpha = 0.05$ ) It means that it is significant.

These results agree with the results of most of the previous experimental studies such as Lee and Nelson in (2005), Lin et al (2005), Uzuntiryaki et al, (2005) and Chapman et al (2006).

The researcher attributes the results of the means of the females students achievement in the experimental group (58.373) which was higher than the means of the female students in the control group (39.719) that female students work hard more than male students, female students are eager to achieve high grades to prove that there is no difference between them and male students whom their means

**in the control group was (39.355), while in the experimental group was(50.990) . As figure No.(1.4) show the interaction between group and gender.**

## **Conclusion:**

**Concept mapping is a method to visualize the structure of knowledge. Since the knowledge expressed in the maps is mostly semantic, concept maps are sometimes called semantic networks. Often it is claimed that concept mapping bears a similarity to the structure of long-term memory. Instead of describing all concepts and their relations in text, one may choose to draw a map indicating concepts and relations in a graph or network.**

**Visual representation has several advantages. Visual symbols are quickly and easily recognized, and this can be demonstrated by considering the large amount of logos, maps, arrows, road signs, and icons that most of us can recall with little effort. Visual representation also allows the development of a holistic understanding that words alone cannot convey, because the graphical form allows representations of parts and whole in a way that is not available in sequential structure of text(Lawson, 1994).**

**Going through chapter five, we can notice the following conclusions of the three hypotheses:-**

**There were differences of statistical significance due to the group in favor of the experimental group.**

**There were differences of statistical significance due to gender in favor of the female students.**

**There were differences of statistical significance due to the interaction between group and gender.**

**The findings reveal that concept mapping has a noticeable impact on students achievement.**

## **Recommendations**

**Based on the results of the study, the researcher suggested many recommendations as the following:**

- 1- For teachers, concept maps are useful tools for analyzing and planning instruction.**
- 2- For investigators, to do further similar studies.**
- 3- Using concept maps in teaching Stories in secondary school, appendix (5)**
- 4- Supervisors should strength their relationships with teachers and should change their roles from inspectors to counselors.**
- 5- Supervisors can help teachers of English by conducting several training sessions in using the concept mapping method as a medium of teaching English because the majority of them attend training sessions in using concept mapping method in TEFL under the supervision of the Ministry of Education.**
- 6- Teachers must be encouraged to share in writing materials or be asked to evaluate materials before and after using them.**
- 7- The teacher must take care about the learners needs and to consider the psychological conditions of the learners in different levels .**
- 8- Encourage both supervisors and teachers to enroll in courses in the Palestinian universities to study about using concept mapping method as a means of teaching English.**

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فاعلية استخدام خريطة الشكل "Vee" في تدريس العلوم على التحصيل واكتساب عمليات العلم لدى طلبة الصف التاسع من التعليم العام. سلطنة عمان. المنشاوي للبحوث و الدراسات.

## **Appendixes**

## **Appendix 1**

The achievement test

Choose and Complete:

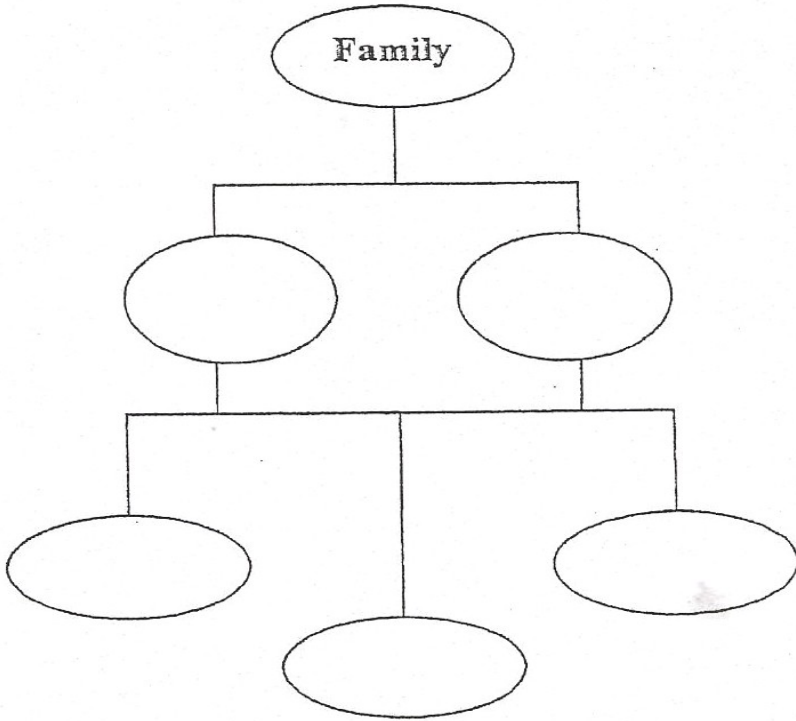
father

mother

brother

sister

me



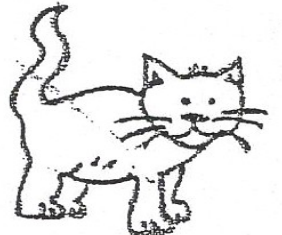
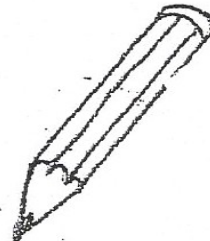
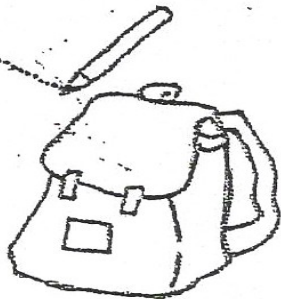
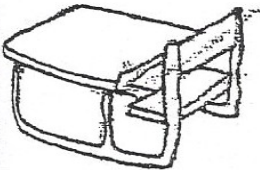
Match the word with the correct picture:

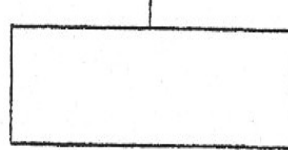
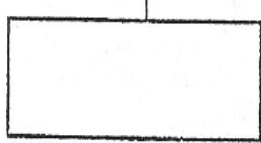
bag

cat

desk

pencil





Put a tick in the correct answer:

Is it a book?



Is it a cat?

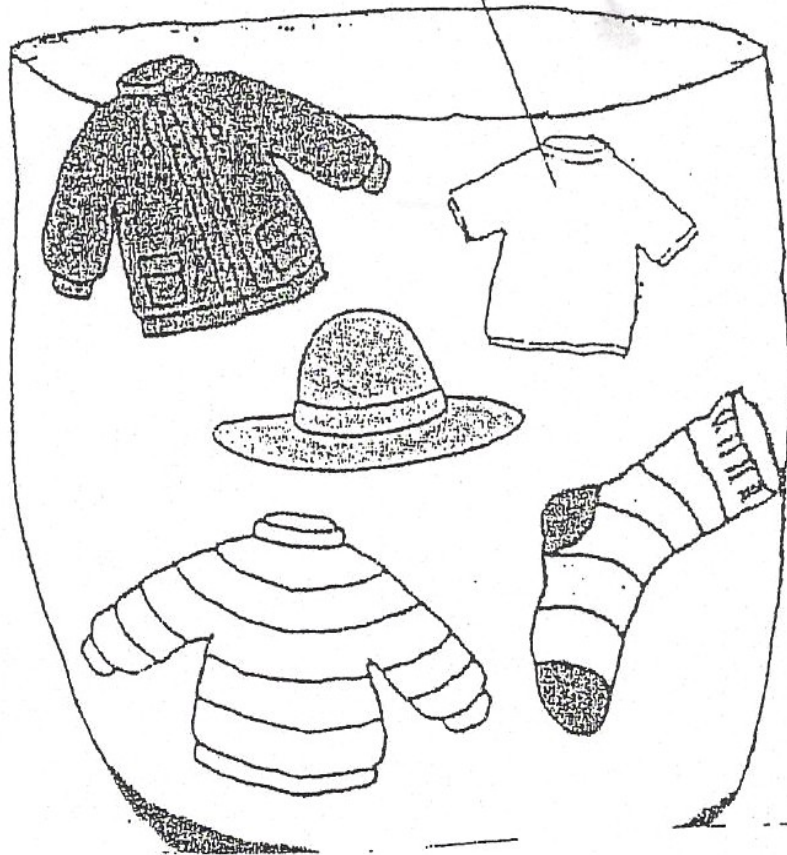
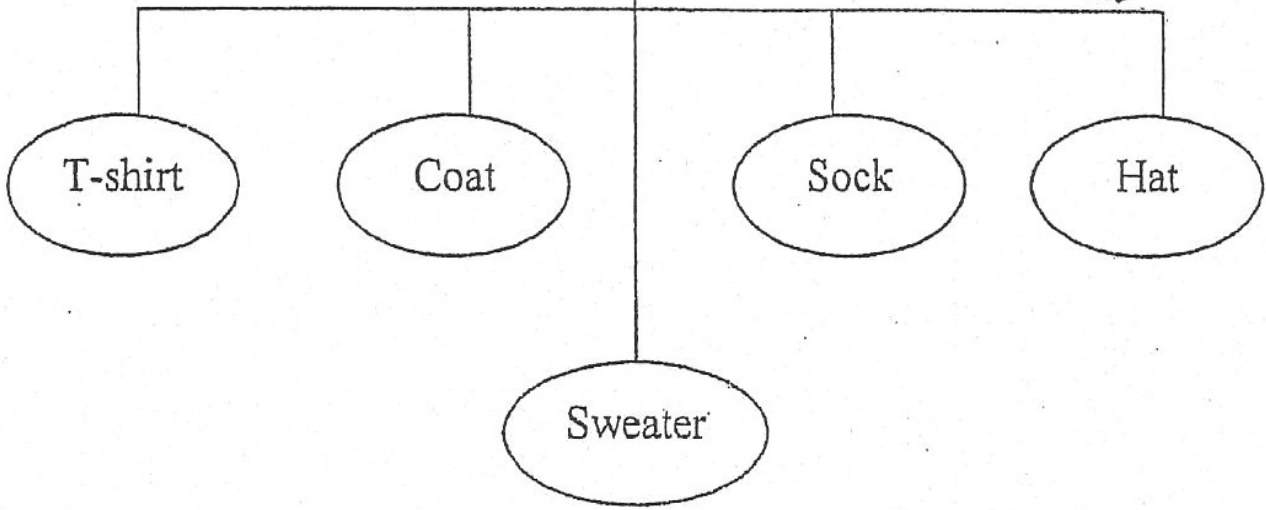


Is it a bag?

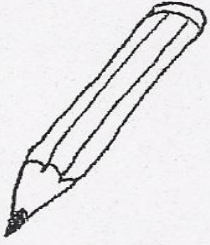


Is it a pen?

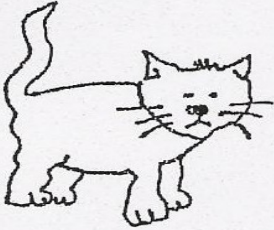




Complete:



It's a ...encil .



It's a ...at.



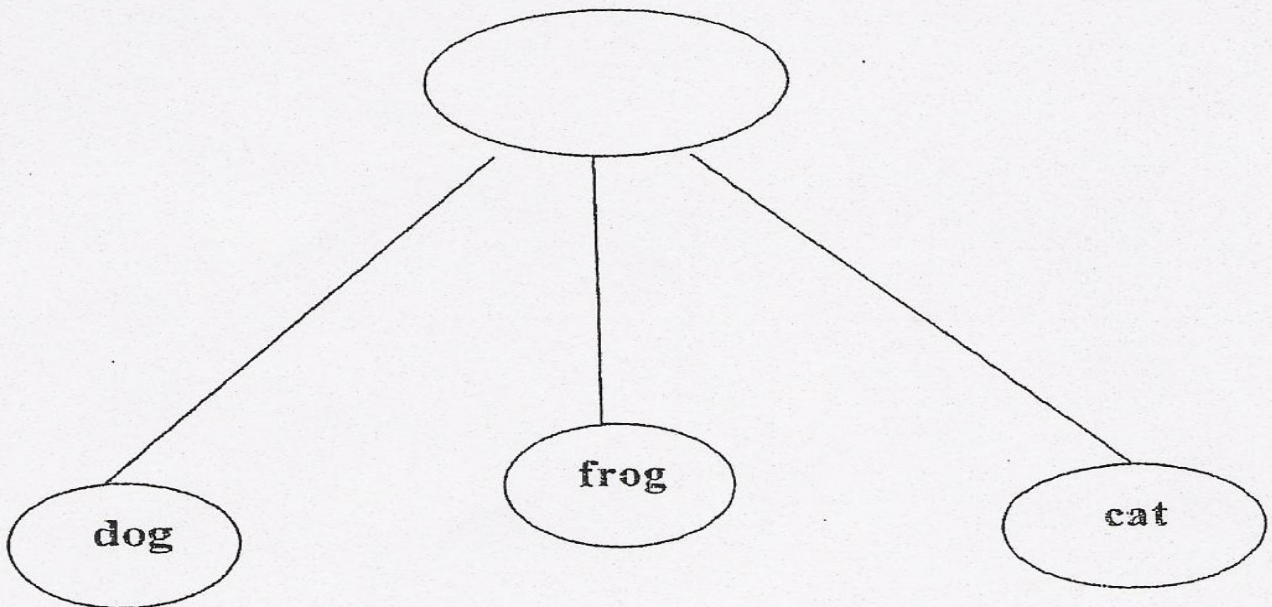
It's a ...og.

Choose and give the correct answer for these words:

Pen

Animal

Book

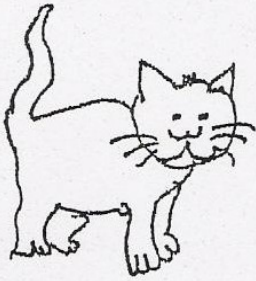


Two

One

Three

Four



..... cat.



..... umbrellas.



..... pencils.



..... kites.

## **Appendix 2**

## **The Judged Committee**

**Dr. Omar Abu Al\_Humos. Dr. At Al-Quds University .**

**Majdi Hamayel. Teacher at At Al-Quds University.**

**Saket Shalalkeh. Teacher at At Al-Quds University.**

**Also it was judged by a committee of supervisors and they are:**

**Abdulrahman Sh. Mohmmad Makhamreh. At Southern Hebron Directorate.**

**Huda MI. Abu Arquob. At Southern Hebron Directorate.**

**Muyassar Khaleel. At Southern Hebron Directorate.**

**Mohammad Abu leghlasi. At Southern Hebron Directorate.**

**Rajeh Muhammad Imar. At Southern Hebron Directorate.**

## **Appendix 3**

## Lesson Plan unit 2

Day: Sunday      Date: 5-2-2007.      Class: 2nd      Period: 1-2-3.

Unit: 2      Them/Topic:- Naming familiar object.

### Behavioral Objective

1-.....To name familiar objects.

2-.....To identify and ask about class room object.

**Materials:** PB. WB. Cassette. Unit 2 poster. Pencil and papers, photo of family members.

**Introduction:** Teacher greet the children. Teacher hold up the cassette and ask what's this.

### Procedures

Ob.	Procedure	Time	Evaluation
1.	Teacher plays the cassette and the same procedure as the Ts'B. Teachers demonstrates (ask and answer pupils in pairs practice.		Teacher plays the cassette. Pupils point, repeat and read. Pupils read the dialogue in pairs.
2.	Pupils can add some words in their questions . Teacher asks the class to open their work book and match the pictures with the description .	15m	Teacher shows the class how to do the activity by using the concept mapping method in the work book
3.	Then to complete the question as the practice activity, by using the concept mapping method	15m	Teacher asks some pupils to come in front of the class to act out the dialogue
4.	Teacher asks volunteers to act out the dialogue in front of the class	10m	

## Lesson Plan unit 3

Day: Sunday      Date: 12\2\2007      Class: 2nd      Period: 1-2-3.

Unit: 3      Them/Topic: Asking about familiar object

### Behavioral Objective

- 1-.....To ask about familiar object .
- 2-.....To identify and ask about object.
- 3.....To recognize the words of food.

**Materials:** PB. WB. Postcards for different food. Cassette. Unit 3 poster. Pencil and Papers.

**Introduction:** Teacher greet the children. Teacher hold up the cassette.

### Procedures

Ob.	Procedure	Time	Evaluation
1.	Teacher plays the cassette, and hangs the poster. And the same procedure as the Teacher book	15m	Teacher plays the cassette. Pupils point, repeat and then in their PBs with joining in using the speech bubbles of the cardboard
2.	Pupils(1 and 2) ask the questions is it e.g orange, egg. Fig etc...		The teacher asks some children to do some activity of the food items in the blackboard by using concept mapping method.
3.	Teacher ask the children to open their WBs .And give them the introduction to do the activity by using the concept mapping method . Pupils act out the activity in the blackboard .	15m	The teacher asks the children to do the work book activity by using the concept mapping method . Pupils complete and write , and then the teacher corrects to them.
4.	Then write and complete also by using the concept mapping method . Teacher asks volunteers to act out the dialogue in front of the class.	10m	The teacher gives the chance to some volunteers to act out the dialogue in front of the class.

## Lesson Plan unit 4

Day: Sunday Date: 19-2-2007 Class: 2nd Period: 1-2-3.

Unit: 4 Them/Topic: Numbers.

### Behavioral Objectives

- 1-.....To use numbers.
- 2-.....To recognize the word of numbers.
- 3-.....To count to 10.
- 4-.....To ask about numbers.

**Materials:** PB. WB. Postcards for different numbers. Cassette. Unit 3 poster. Pencil and papers

**Introduction:** Teacher greet the children. Teacher hold up the cassette.

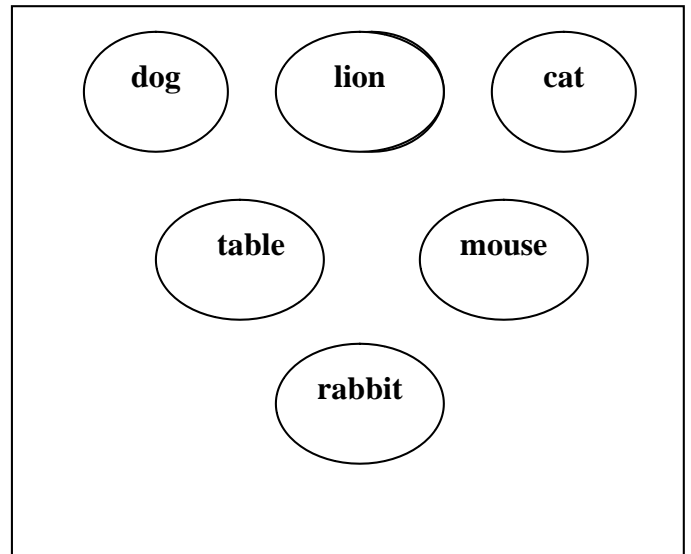
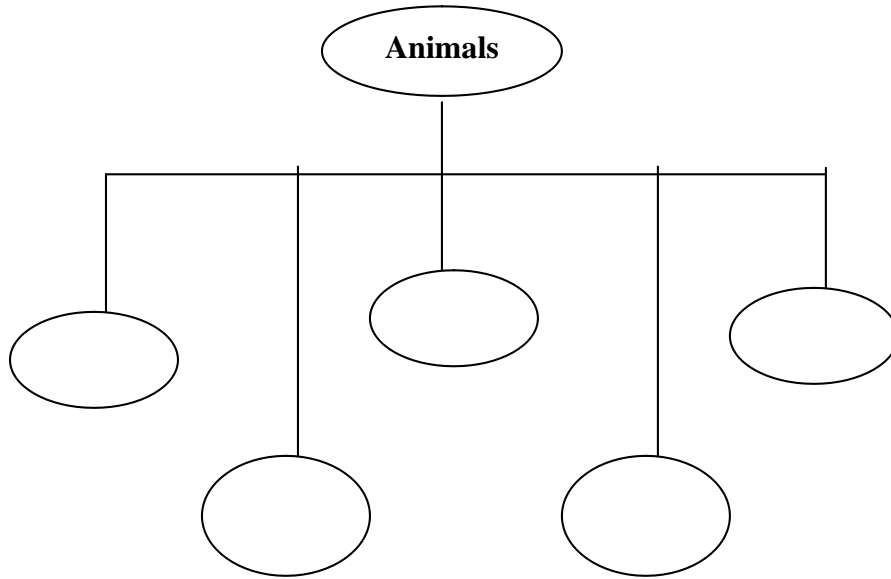
### Procedure

Ob.	Procedure	Time	Evaluation
1.	Teacher plays the cassette, and hangs the poster. And the same procedure as the Teacher book	10m	Teacher plays the cassette. Pupils point, repeat and read. Pupils read the dialogue in pairs
2.	Teacher asks the class to open their work book and match the pictures with the description .	15m	The teacher asks some children to do some activity of the food items in the blackboard by using concept mapping method
3.	Then to complete the question as the practice activity, by using the concept mapping method		Teacher asks some pupils to come in front of the class to act out the dialogue
4	Teacher ask the children to open their WBs .And give them the introduction to do the activity by using the concept mapping method . Pupils act out the activity in the blackboard .	15m	The teacher ask some children to draw a concept maps for the numbers

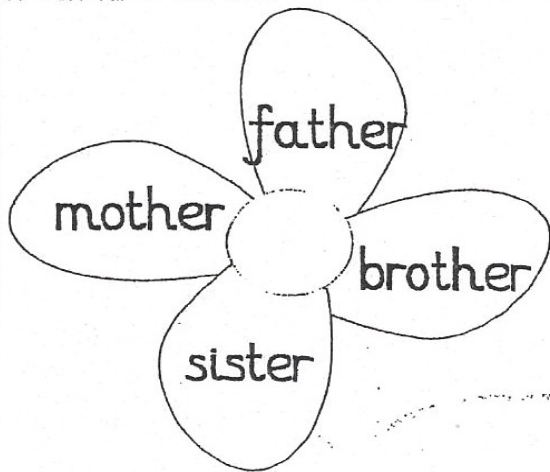
## **Appendix 4**

**Worksheet No.1**

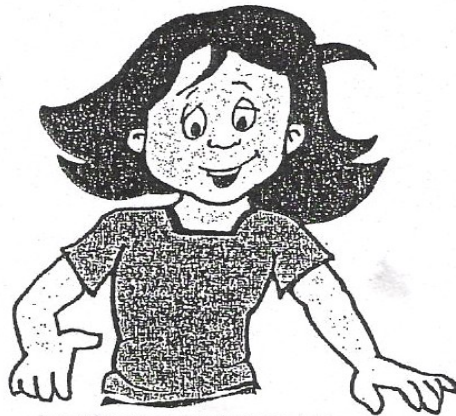
**Choose and write the correct word.**



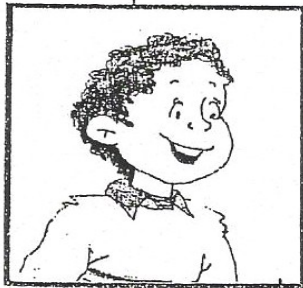
# Family Words



This is Samya



Samya



Her .....



Her .....

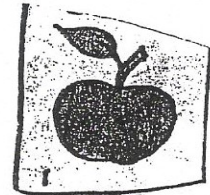
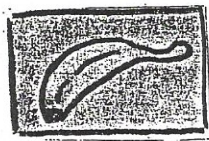
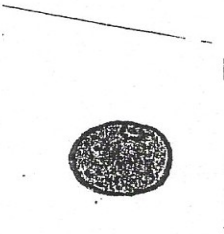
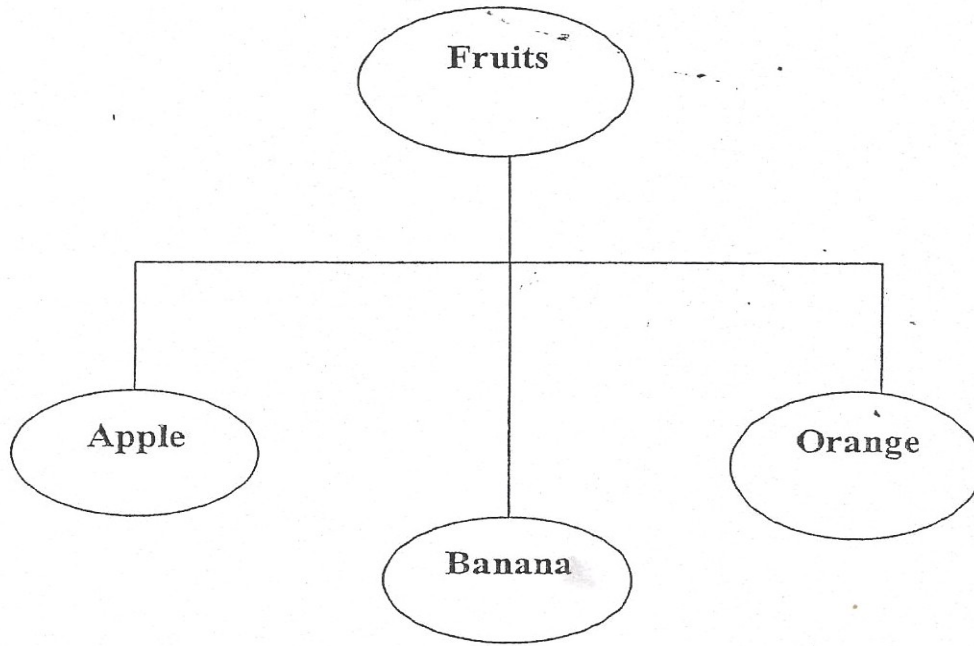


Her .....

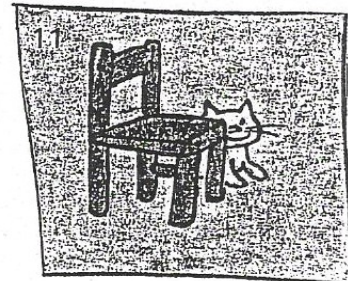
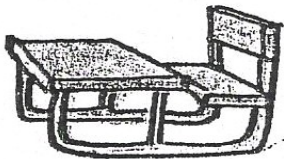
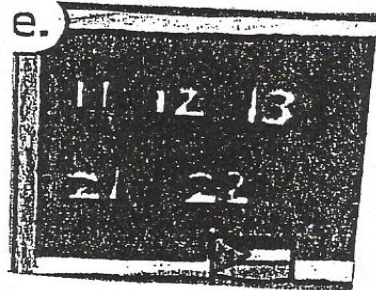
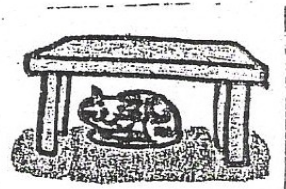
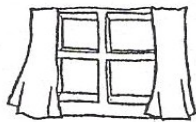
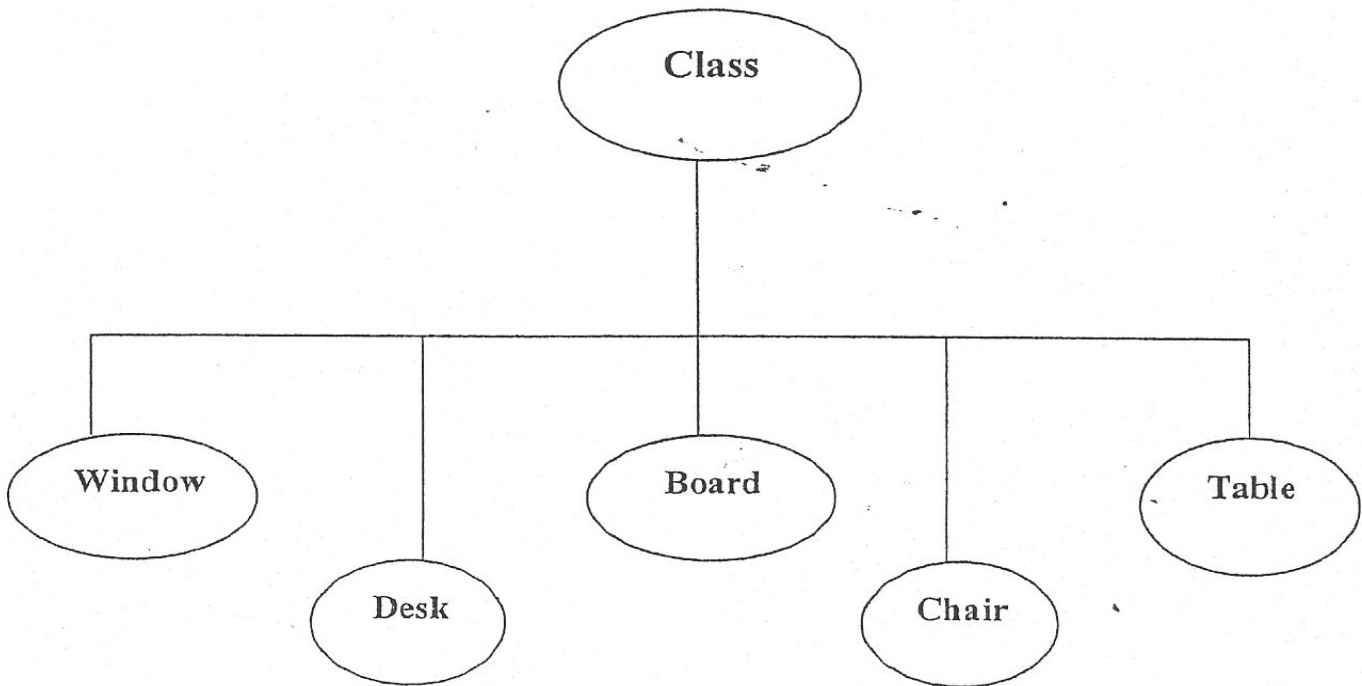


Her .....

Worksheet No.3

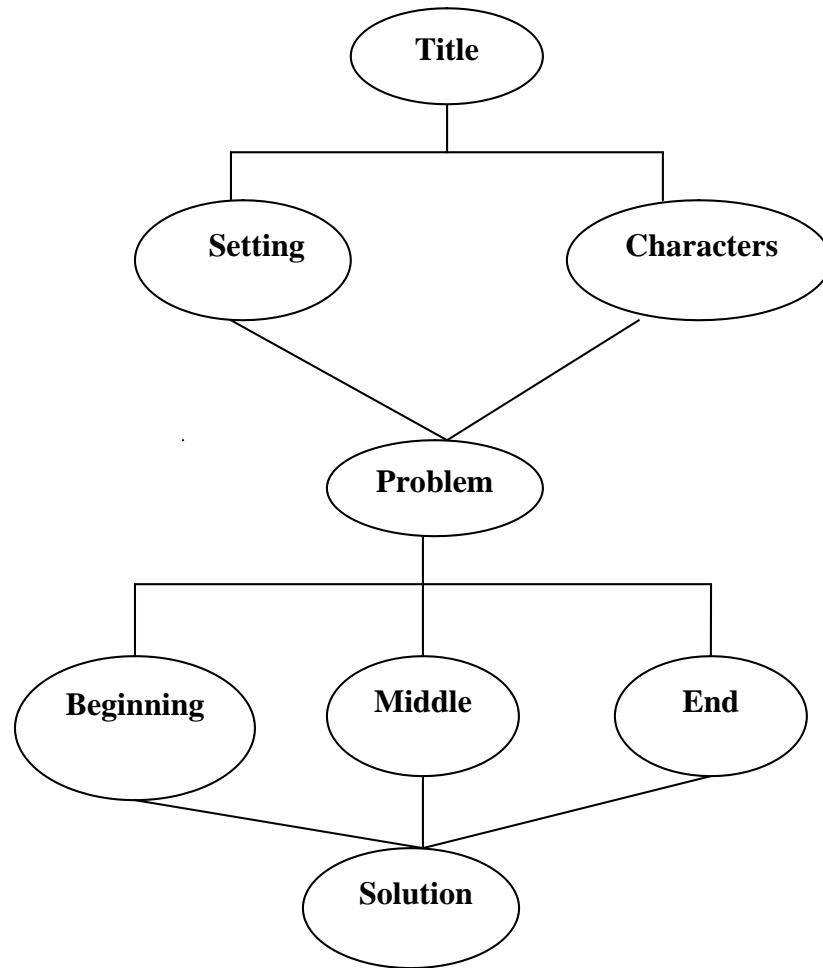


Worksheet No.4



## **Appendix 5**

**Using concept maps in teaching Stories in secondary school**



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