Harnessing the Power of EFL Secondary School Students' General and Specialized Vocabulary Learning by Concept Map Strategy

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Abstract:

One of the important strategies applied in the classroom is **Concept Map Strategy**. For that it is a good idea to use this strategy in the classroom. The present study aims at:

-Assessing the average level of the fourth preparatory school students' ability in vocabulary learning.

-Finding out the effect of Concept Maps Strategy on EFL preparatory school students' in vocabulary learning.

-Finding out whether there is any significant difference between the students' abilities at the recognition level and production level of posttest -Finding out whether there is any significant difference among students' mean scores of the five variables (Relevance, Contextual, Variety, Usage and Practice) of the experimental group in the posttest.

The population of the current study is (649) students which represents all the students of the fourth preparatory class in AL Zaab City during the academic year 2024-2025 . From this population, two groups (one is experimental and the second is control groups) are chosen to serve as a sample. Each group consists of (30) students. The pilot study is find out the suitability of the test item. It includes (13) student.

Both groups have been equalized in age, parents' academic attainment and students' achievement in pretest and pervious year degree. The two groups have been taught the same subject by the researcher.

The experimental group is taught according to Concept Map strategy, whereas the conventional method has been adopted for the control group.

Then, a post-test have been constructed. The experimental and the control groups were taught for eight weeks.

The researcher constructed an achievement test of four questions to assess the students' performance in the independent variable (**general and specialized vocabulary**).

The data is statistically analyzed and the following results have been found: There are statistically significant differences in the mean scores of the students' achievement of the experimental group in vocabulary learning. So, the first hypothesis accepted. There is a statistically significant difference between the mean scores of the control group who taught according to the conventional method and the experimental group who taught by using Concept Map Strategy for the benefit of experimental group. So, the second hypothesis is accepted. There is no significant difference between students' performance at the recognition and that of production level. The third hypothesis rejected. There is no significant difference between experimental group students' mean scores of the fifth variables in the posttest. The fourth hypothesis also rejected. The results indicate that students' performance in practice has the highest mean score.

The study ends with a number of conclusions, recommendations and suggestions for further studies.

Key Words: (Harnessing , Power, Concept map Strategy, General and Specialized vocabulary).

تسخير قوة المفردات العامة والمتخصصة لدى طلبة المدارس الثانوية متعلمي اللغة الانجليزية لغة أجنبية بواسطة استراتيجية خريطة المفاهيم

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الملخص:

من الاستراتيجيات المهمة المطبقة في الصف استراتيجية خريطة المفاهيم. لذلك من الجيد تطبيق هذه الاستراتيجية في التعليم. تهدف الدراسة الحالية إلى:

تقييم مستوى قدرة طلاب الصف الرابع الإعدادي في تعلم المفردات، ومعرفة تأثير استراتيجية خريطة المفاهيم على طلاب الصف الرابع الإعدادي في تعلم المفردات.

معرفة ما إذا كان هناك فرق بين قدرات الطلاب على مستوى التمييز ومستوى الإنتاج في الاختبار البعدي.

معرفة ما إذا كان هناك فرق بين متوسط درجات الطلاب في المتغيرات الخمس (الملاءمة والسياق والتنوع والاستخدام والممارسة) للمجموعة التجريبية في الاختبار البعدي. بلغ مجتمع الدراسة الحالية (٦٤٩) طالبًا يمثلون جميع طلاب الصف الرابع الإعدادي في مدينة الزاب خلال العام الدراسي ٢٠٢٤-٢٠٢٥. ومن هذا المجتمع تم

اختيار مجموعتين (المجموعة التجريبية و المجموعة الضابطة) لتكون بمثابة عينة، تتكون كل مجموعة من (٣٠) طالبًا. أجريت دراسة استطلاعية، تهدف الدراسة الاستطلاعية إلى معرفة مدى ملاءمة فقرات الاختبار. وتضم (١٣) طالباً.

وقد تساوت المجموعتان في العمر والتحصيل الدراسي للوالدين وتحصيل الطلبة في الاختبار القبلي والمستوى الدراسي في السنة السابقة.

وقد درست المجموعتان المادة نفسها من قبل الباحث، درست المجموعة الضابطة حسب الطريقة الاعتيادية، أما المجموعة التجريبية فقد درست وفق استراتيجية خريطة المفاهيم. تم تطبيق الدراسة على المجموعتين التجريبية والضابطة لمدة ثمانية أسابيع.

تم بناء الاختبار التحصيلي مكون من أربعة أسئلة لتقييم أداء الطلبة في المتغير التابع (المفردات العامة والتخصصية)، وتم تحليل البيانات إحصائياً وتوصلت الدراسة إلى النتائج التالية: توجد فروق ذات دلالة إحصائية في متوسط درجات تحصيل طلبة المجموعة التجريبية في تعلم المفردات، وبالتالي تم قبول الفرضية الأولى، يوجد فرق ذو دلالة إحصائية بين متوسط درجات المجموعة الضابطة التي درست وفقاً للطريقة التقليدية والمجموعة التجريبية التي درست وفقاً لاستراتيجية خريطة المفاهيم، وبذلك يتم قبول الفرضية الثانية. لا يوجد فرق بين أداء الطلبة في مستوى التمييز وأداء الطلبة في مستوى الإنتاج، تم رفض الفرضية الثالثة. لا يوجد فرق بين متوسط درجات طلبة المجموعة التجريبية في المتغيرات الخمس في الاختبار البعدي، تم رفض الفرضية الرابعة أيضاً

تشير النتائج إلى أن أداء الطلبة في التطبيق العملي هو الأعلى متوسطاً، انتهت الدراسة بعدد من الاستنتاجات والتوصيات والمقترحات للدراسات المستقبلية.

الكلمات المفتاحية: (استراتيجية تسخير القوة، خريطة المفاهيم، المفردات العامة والمتخصصة).

Introduction

1.1. Statement of the Problem

English is increasingly becoming a tool for international communication in transportation, commerce, banking, computerization, tourism, technology, diplomacy and scientific research. It is not only taught to be a tool for understanding and teaching British or American cultures (Brown,2010).

English has been a crucial qualification for an individual who wants to cope with the rapidly changing circumstances of these days. Proficiency in English is becoming necessary for employees for the purpose of adapting their workplace. Mastering English will unquestionably maximize the chance of being employed in considerable careers,

since companies and organizations tend to hire persons with good English efficiency (Richards & Renandya, 2002).

Thus, English is taught worldwide in many countries more than any other language. One of the countries that give much consideration for English is Iraq. In Iraq English language is considered a foreign language. It means that Iraqi people do not use English for daily communication. As a result, learning English is very difficult for the learners because there are so many things that are different from their native language. The students should master all of the four language skills; listening, speaking, reading, and writing (Rost, 2009). Language elements are also important to be mastered by students in order to be well equipped with language(Harmer,2007) .

Modern teaching in learning revolves around creating an active learning environment that motivates the students to actively participate in the learning process. Modern teaching goes beyond conveying information to enable students to develop critical thinking, problem solving, teamwork, and self-learning skills (Aryan & Saman, 2024).

To the best knowledge of the researchers, EFL students mostly face problems to master the required amount of vocabulary that is needed in learning a foreign language. The currently used teaching strategies may be one of the causes behind those problems. Therefore, this study aims to utilize Concept Map Strategy in learning vocabulary in order to fill a gap of information in literature of this area through investigating the effectiveness of the adopted strategy (Dhia, 2020).

Kinchin (2014) states that map is an arrangement of vocabulary (concepts) about a topic. The concepts are categorized in some ways. The making of semantic map is a procedure for building a bridge between the known and new.

1.2. Aims of the Study

1- Assessing the average level of the fourth preparatory school students' ability in vocabulary learning.

2- Finding out the effect of Concept Map Strategy on EFL preparatory school students' in vocabulary learning.

3- Finding out whether there is any significant difference between the students' abilities at the recognition level and production level of posttest**.**

4- Finding out whether there is any significant difference among students' mean scores of the five variables (Relevance, Contextual, Variety, Usage and Practice) of the experimental group in the posttest.

1.3. Hypotheses of the Study, this study hypothesized that:

1.There is a statistically significant difference between the average level of the students' achievement and theoretical level of achievement in the posttest.

2- There is a statistically significant difference in students' ability in vocabulary learning of the experimental group by using the Concept Map Strategy and the control group which is taught by conventional method in the posttest

3-There is a statistically significant difference between the students' ability at the recognition level and production level of the posttest.

4- There is a significant difference among students' mean scores of the five variables (Relevance, Contextual, Variety, Usage and Practice) of the experimental group in the posttest.

1.4. Value of the Study, the study is hoped to be useful to:

1- It helps EFL teachers and specialists towards developing their students' vocabulary learning .

2- It helps EFL learners to participate in activities using authentic materials.

3- It raises students' awareness of the importance of general and specialized vocabulary learning.

4-It motivates teachers to develop learning methods.

5- It highlight the usefulness of vocabulary learning.

6- It enable teachers facilitate learning vocabularies by relating concepts to each other.

1.5. Limits of the Study

This study is limited to:

1-Fourth preparatory school male students who are studying **"English for Iraq"** during the first semester of the academic year 2024-2025 at Al Hawija City in Kirkuk governorate.

2- Concept Map Strategy as a learning strategy to improve vocabulary learning.

3- General and specialized vocabulary learning as dependent variable to be recognized by students.

1.6. Definitions of Basic Terms

1.6.1. Harnessing

Harnessing refers to the act of controlling and making use of a resource of energy source for practical purposes (Merriam-Webster,2024). It is when you harness something such as an emotion or natural source of energy, you bring it under your control and use it (Collins, 2025).

Operational Definition: Harnessing refer to the specific actions or processes used to effectively utilize available resources, tools, and techniques to enhance the learning experience.

1.6.2. Power

Power in learning can mean empowering learners to take charge of their own education. This involves providing students with the tools, resources, and autonomy to explore subjects in ways that are meaningful to them (Freire,1993).

Power involves the ability of educators to motivate and inspire students to engage with the material and develop a love for learning (Dweck & Carol, 2006).

Operational Definition: It involves shaping the learning environment to foster engagement, motivation, and effective learning. It can include classroom management, setting learning goals, and creating a supportive atmosphere.

1.6.3. General and Specialized Vocabulary

Snow (2010) states that the aspect of vocabulary should not be separated from other elements of language. It means that everything that people talk or write is all related to a specific vocabulary. When students are reading, they are thinking by comprehending all the words, phrases, sentences. In order to be more fluent and proficient when using language, students are expected to be able to express the meaning they want to give. The students must have a good range of vocabulary of the language they are learning.

The two main kinds of vocabulary:

1-General vocabulary: It refers to the basic set of words commonly used in everyday communication across various contexts. These words are not specific to any particular field or subject but are essential for basic understanding and communication in language. General vocabulary forms the foundation of language proficiency and is used for routine interaction, description, and expression (Nation, 2001).

2-Specialized vocabulary: It consists of the terms that are used within a specific field or profession, facilitating communication among its members and distinguishing it from everyday language (Nordrin, Stapa & Danus, 2013).

1.6.4 Concept Map

Concept Map is a visual representation of knowledge that help to organize and structure information in a way that makes it easier to understand and remember (Novak & Gowin, 1984). A Concept Map is a visual organizer that can enrich students understanding of a new concept. Using a graphic organizer, students think about the concept in several ways (Sunder, 2022).

Operational Definition: It is a graphical representations where concepts are displayed as nodes and relationships between them are shown as labeled lines or arrows (Canas & Novak, 2009).

1.6.5 Strategy

Mintzberg(1978) views that strategy is a plan of developed ideas consciously, purposefully and made in advance of the specific decisions to which it applies. A strategy is a rule for making decisions under conditions of partial ignorance whereas policy is a contingent decision (Paris, 1991). Max McKeown (2011) argues that strategy is what separate bosses and bests and is the human attempt to get to wanted ends with offered means.

Operational Definition: It is a tool for analyzing the success of the current plan and then executing operations for optimum results.

1.7. Plan of the Study

The following steps will be followed in order to achieve the aims of the study and verify its hypotheses:

1-Choosing two groups of preparatory school students randomly, then dividing the sample into two groups: experimental and control.

2-Equalizing the two groups according to variables which are their age, their parents' academic level, students' scores in English language in the previous year and their scores in pretest..

3- Building an achievement test as a tool of measuring the scores of the study by forming an achievement test and send it to the Jury members to make sure of it's suitability for students level and the given strategy.

4-Applying the experiment for the two group. the experimental group with Concept Map Strategy and the control group with the conventional method of teaching.

5-Collecting the required data and analyzing the data using suitable statistical ways.

6- Discussing results, stating conclusion, recommendations and suggestion.

1.8 The model of the Study

The model is used to achieve the aims of this study is Concept Map Strategy was developed in the 1970s by Joseph Donald Novak and his research team at Cornell

University. Concept Map was initially created as a tool for representing students' knowledge and understanding, primary in science education. Since then Concept Map have been widely used in various fields for both teaching and learning purposes (Hazem,2018).

Chapter Two

2.1 Theoretical Background

2.1.1 The Concept of Vocabulary Learning

Vocabulary learning is the process of acquiring building blocks in second language acquisition (Ramos,2015). The impact of vocabulary on proficiency in second language performance "has become an object of considerable interest among researchers, teachers, and materials developers" (Huckin & Coady, 1999, p. 182). From being a "neglected aspect of language learning" vocabulary gained recognition in the literature and reclaimed its position in teaching. Educators shifted their attention from accuracy to fluency by moving from the Grammar Translation Method to communicative approaches to teaching. As a result, incidental vocabulary teaching and learning became one of the two major types of teaching programs along with the deliberate approach (Meara, 1980, as cited in Xu & Hsu, 2017).

Vocabulary learning helps acquire language, develop the learners' reading proficiency and is beneficial for reading comprehension (Tozcu & Coady, 2004). Learning the vocabulary encompasses four stages: (1)discrimination, (2)understanding meaning, (3)remembering, and (4)consolidation and extension of the meaning. First, the discrimination stage involves distinguishing sounds and letters. It helps in speaking, listening, reading and writing because by distinguishing sounds, the learners pronounce words correctly and understand them when they read or hear. Secondly, understanding meaning involves understanding the concept of words by relating them to their referents. Thirdly, the remembering stage consists of the ability to retain the meanings. Fourthly the consolidation and extension stage refers to learning new vocabulary and its integration in the learners' vocabulary system (Grauberg, 1997).

2.1.2 Types of Vocabulary

Hu & Nation (2001) mention that vocabulary learning is essential in mastering any language. It involves both acquiring **general vocabulary**, which is useful across a wide range of contexts, and **specialized vocabulary**, which pertains to specific fields or profession. Each type of vocabulary requires different strategies for effective learning.

1- General Vocabulary Learning: It involves learning words used in everyday communication. General vocabulary is foundational and includes words frequently encountered in daily life, media, and social interaction.

2- Specialized Vocabulary Learning: According to (Wang & Yum, 2022) specialized vocabulary refers to the terms and jargons used within specific fields such as medicine, law, engineering, or academia. Learning this type of vocabulary is crucial for professionals or academics working in specialized domains.

2.1.3 Features of Vocabulary Learning

There are many features for vocabulary learning which enable us to learn vocabulary in a correct way and understand the concepts easily in suitable way. These features are:

1- Incremental Learning: It represents a long-standing challenge for learning. A lifelong learning system is defined as an adaptive algorithm capable of learning from continuous stream of information, with such information becoming progressively available over time where the number of tasks to be learned are not predefined (Parisi, Kemer, Part, Kanan, and Wermer,, 2019).

2- Receptive and Productive Knowledge: Productivity knowledge concept based on the view that knowledge is a competence that is linked to person: Knowledge needs to be understood as the potential for action that doesn't only depend upon the stored information but also on the person interacting with it. Receptive vocabulary knowledge is known and understood it's meaning by learners when reading text or listening to text. Learners know and recognize the meaning of words that cause them to understand the text they have read but not speak and write. Learning the receptive vocabulary usually in the form in which the teacher will usually give meaning of the words, using the word in a sentence (Laufer, 1989).

3- Breadth and Depth of Vocabulary: Breadth and depth are tow dimension of vocabulary knowledge. They state that although lexical knowledge is most commonly thought of and assessed as a number of words known, or breadth of vocabulary, it is now increasingly clear that richness of the representation of words known is also a key dimension of vocabulary or as depth of vocabulary (Ordonez, Carlo, Snow, & McLaughlin, 2002).

4**- Contextual Learning**: Contextual learning engages students in significant activities that help them connect academic studies to their context in real-life situations. By making these connection, students see meaning in schoolbook. That enables students to connect academic content to the context of life's situation (Johnson, 2002).

5- Word Frequency and Saliency: Saliency indicates the input features an algorithm paid attention to during its decision process. It is the model's difference in prediction confidence before and after replacing the word with an out-of vocabulary token. Word frequency influences acquisition and growth of vocabulary knowledge in L1 and L2. Words used more frequently can help strengthen the existing knowledge of them or gain new knowledge about them more easily than words used less frequently (Jurafsky & Martin, 2021).

6- Engagement with Vocabulary: It is important that students develop their lexicons to levels, which will permit them to comprehend academic texts in their specialized field. Besides, learning strategies are effective in language learning, so teachers should employ various learning strategies to help learners acquire vocabulary knowledge and reading comprehension (Nation, 2001).

7- Strategic Learning: It involves the use of recognition, metacognition, motivation, affect, and behavior to increase the probability of succeeding in learning, creating meaningful and retrievable memories, and performing higher-order cognitive tasks. Today all theories of strategic and self-regulated learning include the use of learning strategies (Weinstein, Acee & Jung, 2011).

Chapter Three

3.1 Experimental Design

Experimental design is a type of research that sometimes costs more than the potential benefits or profits that are achievable when a favorable outcomes is eventually reached. It follows the strict of the researcher (Zubair, 2022).

Experimental design allows full range of types of experimentation, can be used to determine conditional answers, convince an audience of probable fact and facilitates justification results (Liu, 2014).

The experimental design adopted in the current study is entitled "The pretest –posttest design, Equivalent –Groups Design"**.** Selecting two groups randomly and assigning them to the experimental and control groups**.** Equalizing the both groups based on certain variables. The independent variable is Concept Map Strategy. The same instructional materials were used for the two groups. The experimental group is taught according to Concept Map Strategy whereas the control group is taught according to the conventional method. Make a post-test for both groups of students. Using the suitable statistical methods in order to analyze the collected data and produce the final results.

3.2 Population and Sampling

The term population refers to a total group of individuals that a particular study is interested in and it involves all the subjects the researcher plans to study (Ary, Jacob, & Sorensen, 2010). The aim is to understand and to which or to whom the results of the study can be generalized or transferred (Casteel & Bridier, 2021).

For the current study, population involves all the fourth class EFL in secondary Schools and preparatory schools in Al-Zaab city-Kirkuk Governorate, during the academic year (2024-2025). The total number of population is (649)

Sample is a subset of population. Sampling refers to selecting representative elements from the population (Israel, 2008). In the fourth preparatory grade at Shmit secondary School is selected to represent the sample of the study. The total number of the sample is (60) after excluding the repeaters in each section

3.3Construction of the Achievement Test

According to McNamara (2000) a test is restricted to a specific subject matter in a curriculum.

In the current study, achievement posttest is the instrument which has been constructed and applied to achieve the aims of the study.

Therefore, the researcher has constructed a posttest to assess if statistically meaningful variation occurs between experimental and control groups.

The main purpose of general and specialized vocabulary learning is to identify whether at the end of a specific period of training, having attained the course objectives or not. An exam that is pertinent to the lesson being taught provides feedback to the teacher. The purpose of the post-test, which consists of four questions, is to show how Concept Map Strategy affects student's general and specialized vocabulary learning. The test of this study includes four questions, each question is composed of various items.

Question One: This question consists of A and B.

Q1/ A: Consists of fifteen vocabularies, the students required to order these vocabularies in a column according to how well they understand the meaning of each vocabulary according to the text.

B- This question consists of five sentences the students need to choose the correct choice for each sentence. The students need to choose the correct choice.

Question Two: This question consists A and B.

A -Students need to match the words in the two lists with words those suit them the other list. B- The students need to use the given words in a suitable sentences.

Question Three: This question consists of two branches.

A-Students must put the words in the box in the dash suit it. Ten words in the box. B-The student need to put words in the suitable place in the column.

Question Four: This question needs students to use given words in writing a composition. The mark divided into the variables (Relevance, Contextual, Variety, Usage and Practice), how the student use vocabulary in the context.

3.4 Face Validity

The degree to which a test appears to evaluate the skills or information it promises to test is referred to as face validity (Richards and Schmidt,2010). A test has a face validity if it evaluates the desired result (Caldwell, 2008). As a result, the exam is administered to a jury members composed of linguists and professionals in teaching English as a foreign language to examine the test's validity and whether its components are adequate for evaluating students' vocabulary test in learning English. They assign the responsibility of judging the suitability of the sample material.

3.5 Content Validity

It is defined as the degree to which elements of an assessment instrument are relevant to and representative of the target construct for a particular assessment purpose (Saiful, 2019). Content validity looks at how the contents of the test are carried out and the researchers are concerned with the evaluation of whether all areas covered adequately by the assessment to evaluate the validity of the material (Fraenkel & Wallen, 2003).

3.6 Pilot Study

Pilot study is a small-scale study conducted prior to a main study to assess the feasibility of conducting the main study. It helps the researcher especially novice researcher to have some practice in interviewing and to be able to refine the final road map for the main study (Aysha & Nashi, 2020). The researcher chooses (13) students at random from the (A) and (B) sections of secondary school. The pilot test is crucial and preferred for the research because it aims to determine the test's discrimination power, degree of difficulty, and reliability. After using the pilot test, it is noted that 50 minutes are needed to complete the test items and that the test's offered instructions are clear.

3.7 Item Analysis

The test items are required to be analyzed to establish two important features: difficulty level, and discrimination power, as follows**:**

3.7.1 Difficulty Level of the Post-test

The difficulty level is specified as the ratio of the students who replied correctly to each item (Rosas, 2000). Item difficulty refers to the extent to which an item appears to be complicated or facilitated for a given number of tests. It just reflects the percentage of

learners who respond correctly to the object. The most suitable test item will have item difficulty varying between 0.15 and 0.85 (Brown, 2010). It was found that the current test items' DL ranges from (0.27) to (0.82)**.**

3.7.2 Discrimination Power

Discrimination power means calculating the degree to which a particular item's results correspond with the results of the entire test (Alderson, 1995). Item discrimination refers to the degree to which an object makes a difference between good and poor testers. An object has good power of discrimination if it collects the right answers from the good students and the wrong answers from the bad students. It is worth noting that the high power of discrimination will be close to 1.0, and no power of discrimination will be nil at all (Brown, 2010). The results obtained indicate that the test item DP ranges from (0.25) - (0.71). The table below shows the test items in DP and DL

Chapter Four
Analysis of Data and Discussion of Results

4.0 An Introductory Note

This chapter is dedicated to the statistical analysis of the collected data, along with a discussion of the results. It aim to evaluate the hypotheses of the study effectively.

4.1 Presentation of the Results

The student's responses to the test items have been analyzed statistically as follows:

4.1.1 Results Related to the First Hypothesis

To analyze the data related to the first hypothesis specifically: There is a statistically significant difference between the average level of the students' achievement and theoretical level of achievement in the posttest**,** the one sample test has been used. Therefore, the first aim of the study namely: Assessing the average level of the fourth preparatory school students' ability in vocabulary learning, will be achieved.

The result in table (4.1) shows that the students' mean scours is 60.066 higher than the theoretical mean 50 with a standard deviation of 10.837 degrees. Comparing with the tabulated t-value which is 1.70, the calculated t-value 5.088 is higher than the tabulated t-value with, a degree of freedom 29 at a level of significance 0.05. This

means, that students in fourth year preparatory school students' achievement have moderate level in vocabulary learning. So the first hypothesis is accepted.

Table (4.1)

Mean Score, Standard Deviation, Theoretical Mean Score, and t-Value of the Experimental Groups in the Post Achievement Test

N.	Mean Score	SD.	Theoretical Mean Scores	T-Value		DF	Level of Sig.
				Calculate	Tabulated		
30	60.066	10.837	50	5.088	1.70	29	0.05

4.1.2 Results Related to the Second Hypothesis

To analyze the data related to the second hypothesis specifically: There is a statistically significant difference in students' ability in vocabulary learning of the experimental group by using the Concept Map Strategy and the control group which is taught by conventional method in the posttest, the independent sample test has been used. Therefore, the second aim of the study namely: Finding out the effect of Concept Map Strategy on EFL preparatory school students in vocabulary learning, will be achieved.

According to the following results in table (4.2), the mean scores of the experimental group is 60.066 and standard deviation is 10.837. While the mean scores of the control group is 48.233 and the standard deviation is 9.452. The calculated t-value 4.507 is higher than the tabulated t-value 2.00 with a degree of freedom 58 at a level of significance (0.05).

Observing the values of T-calculated above, it is found that the calculated T-value 4.507 is much greater than the tabulated T-value of the field 2.00, and from this it can be concluded that there is a statistically significant differences between the mean scores of the control group, who are taught according to the conventional method and the mean scores of the experimental group, who are taught by using Concept Map Strategy, for the benefit of experimental group. So, the second hypothesis is also accepted.

Table(4.2)

Means, Standard Deviation, and t-Value of the Two Groups In the Post Achievement Test

Group	N.	Mean	S.D.	T-Value		DF	Level of Sig.
				Calculated	Tabulated		
Experimental	30	60.066	10.837	4.507	2.00	58	0.05
Control	30	48.233	9.452				

4.1.3 Results Related to the third Hypothesis

To analyze the data related to the third hypothesis namely**:** There is statistically significant differences between the mean scores of the experimental group's at the recognition level and that of the production level in the post test, the paired samples T-test statistics have been used. Consequently, the related aim of the study namely: Finding out whether there is any significant difference between the mean scores of the experimental group's achievement at the recognition level and that of the production level in the post test, will be achieved.

The obtained results show that students' mean scores at the recognition level is found to be 23.633 and that at the production level is 22.634. The t-test formula for two paired samples is used to show that the calculated t-value is 2.070 and the tabulated t-value is 1.70 at the degree of freedom 29 and level of significance (0.05), as shown in table (4.3). It can be inferred that there is no difference between students' performance at the recognition level and that at the production level. So, the third hypothesis is rejected and the related aim is achieved.

Table (4.3)

Mean Scores, Standard Deviation, and T-Value of the Experimental Group Students at the Recognition and Production Levels in the Post Achievement test

	N.	Mean	S.D.	T-Value		DF	Level of Sig.
				Calculated	**Tabulated**		
Recognition	30	23.633	5.176	1.039	1.69	29	0.05
Production	30	22.634	4.693				

4.1.1 Results related to the Fourth Hypothesis

To verify the fourth hypotheses which is, " There is a significant difference among students' mean scores of the five variables (Relevance, Contextual, Variety, Usage and Practice) in the experimental posttest.". A one- way ANOVA is used in the posttest to see whether there are any significant differences in the mean achievement scores of the experimental groups variables (Relevance, Contextual, Variety, Usage and Practice). The researcher used a one-way analysis of variance, as shown in the table (4.4) below:

Table (4.4)

One-Way Analysis of Variance (ANOVA) Among the Fifth Variables

	Sum of Squares	DF	Mean Square	F-value		Sig.
				Calculated	Tabulated	
Between Groups	1.893	4	0.473	0.258	2.63	0.05
Within Groups	266.267	145	1.836			
Total	268.160	149				

The table (4.4) shows that the computed F-value is 0.258 lower than the tabulated F-value 2.63 at the 0.05 level of significance and DF = 149. This indicates that there is no statistically significant differences between experimental groups students' mean scores of the fifth variables in the posttest. The hypothesis "There is significant difference among students' mean scores of the five variables (Relevance, Contextual, Variety, Usage and Practice) in the experimental posttest", is also rejected.

Table (4.5)

Comparisons of Means Among the Fifth Variables (Scheffe[a])

Groups	N	Subset for alpha = 0.05
		Mean scores
Relevance	30	4.73
Contextual	30	4.77
Variety	30	4.77
Usage	30	4.90

Practice	30	5.03
Sig.		0.947
Means for groups in homogeneous subsets are displayed.		
a. Uses Harmonic Mean Sample Size = 30		

According to the table above, the comparisons of means shows that the mean scores of the experimental group in the posttests at Relevance 4.73, Contextual 4.77, Variety, 4.77, Usage 4.90, and Practice 5.03 with harmonic mean sample size = 30. These results indicate that students' performance in practice has the highest mean score.

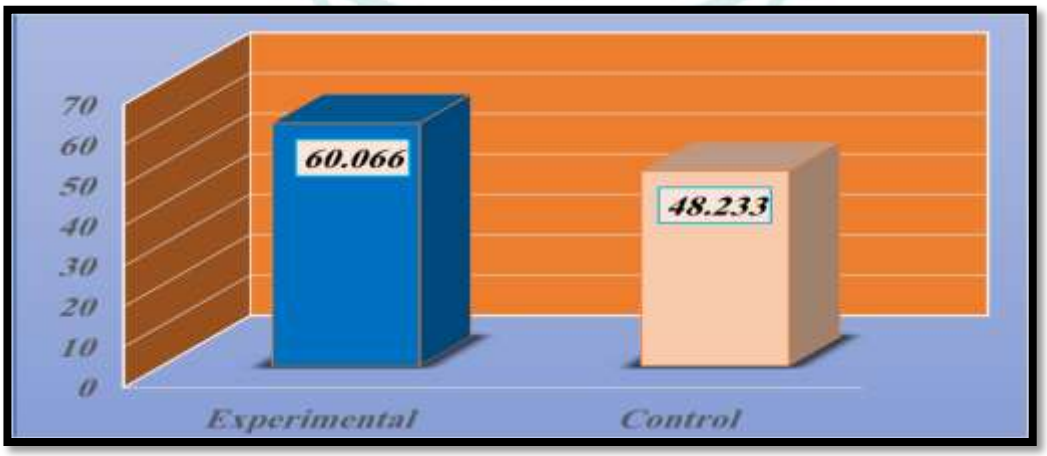
4.2 Discussion of Obtained Results

The findings from the analysis of vocabulary learning abilities among fourth preparatory school students reveal noteworthy insights into the effectiveness of the Concept Map Strategy compared to traditional instructional methods. The key outcomes from the independent samples t-test indicate that the experimental group displayed a statistically significant improvement in their vocabulary learning, as evidenced by a calculated t-value of 5.088, which exceeds the tabulated t-value of 1.70.

The mean score of 60.066 for the experimental group not only surpasses the theoretical mean of 50 but also suggests that students possess a moderate level in vocabulary learning as show in figure 1. This aligns with the hypothesis that utilizing the Concept Map Strategy positively influences students' ability to learn vocabulary. Given the positive results from the experimental group, educators may consider integrating Concept Map Strategy across other subjects and educational contexts. Such strategies could foster deeper understanding and retention of material, thereby enhancing overall academic achievement.

Figure 1

Mean Score and the Theoretical Mean of the Experimental Group in the Post Achievement test

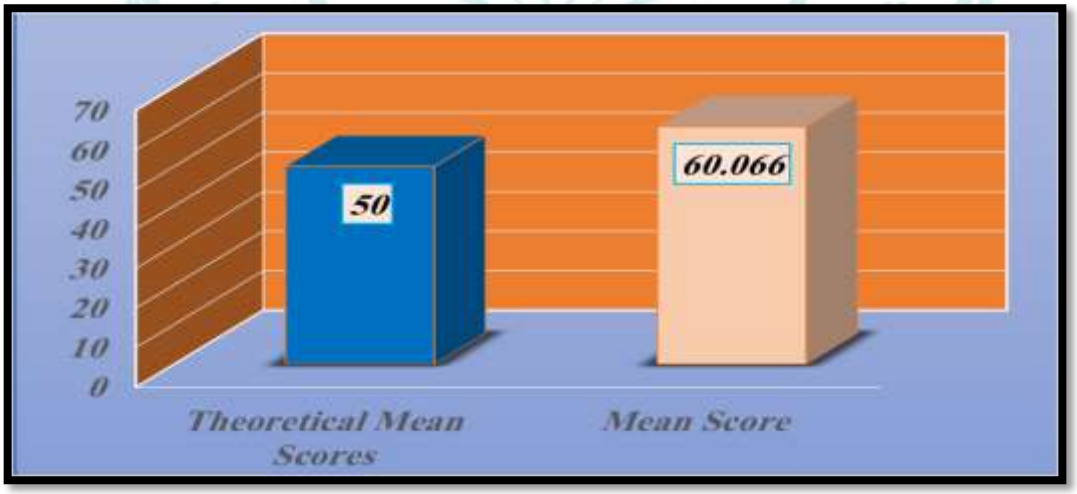


The analysis of the data related to the second hypothesis reveals a statistically significant difference in vocabulary learning abilities between the experimental group, which utilized the Concept Map Strategy, and the control group, which followed a conventional teaching method. This finding is crucial as it substantiates the effectiveness of the Concept Map Strategy in enhancing vocabulary learning among EFL preparatory school students.

The experimental group achieved a mean score of 60.066, whereas the control group recorded a mean score of 48.233 as show in figure 2 The difference in mean scores of approximately 11.833 points indicates a marked improvement in the vocabulary learning of students engaged in the Concept Map Strategy. The significant differences observed between the experimental and control groups strongly support the second hypothesis of this study. The findings highlight the effectiveness of the Concept Map Strategy in improving vocabulary learning among EFL pupils, suggesting that this approach should be integrated into language teaching practices. By doing so, educators can enhance student engagement and success in vocabulary learning, ultimately leading to more effective language learning outcomes.

Figure 2

Mean scores of the Experimental and Control Groups in the Post *Achievement test*



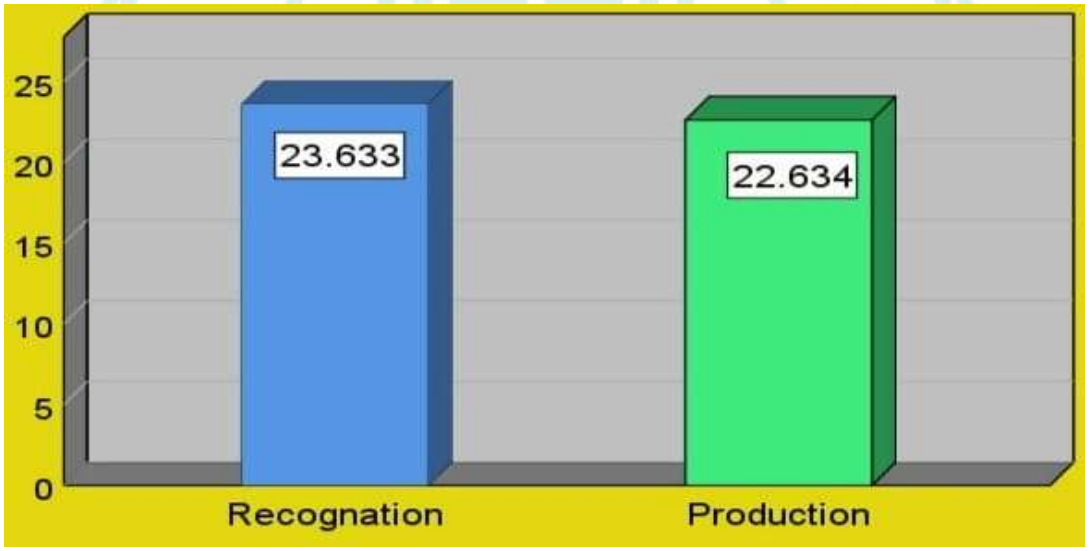
The findings from the paired samples T-test provide valuable insights into the achievement of the experimental group at both the recognition and production levels. The mean scores indicate that the students scored higher scores in the recognition level

which is 23.633 compared to the production level which is 22.63 as show in figure 3. The statistical analysis reveals that the difference between these means is not significant.

The calculated t-value of 2.070 exceeds the tabulated t-value of 1.70. This suggests that while the recognition level scores were higher, the evidence is insufficient to conclude that this difference is statistically significant. This lead to the rejection of the null hypothesis, indicating that the experimental group's performance at the recognition level is not markedly superior to their performance at the production level. These results suggest that the instructional methods employed may not have effectively enhanced students' production skills relative to their recognition skills. This could indicate a need for refining teaching strategies to target production tasks more effectively. The close mean scores may also reflect that while students may be able to recognize concepts or vocabulary, transferring that knowledge to production tasks remains challenging.

Figure 3

Mean scores of the Experimental Group in the Recognition and Production Level in the Post Achievement test

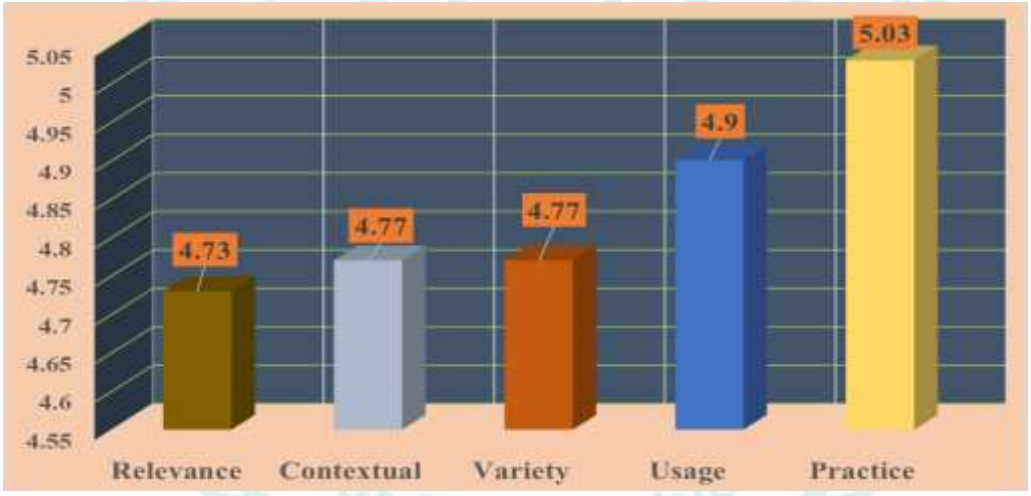


The analysis conducted to verify the fourth hypothesis, which posits that there are significant differences among students' mean scores across five variables—Relevance, Contextual, Variety, Usage, and Practice. Utilizing a one-way ANOVA, the computed F-value of 0.258 is notably lower than the tabulated F-value of 2.5. This result suggests that there are no statistically significant differences in the mean scores across the identified variables in the experimental posttest.

The F-value is a critical statistic in ANOVA that indicates the ratio of variance between the group means to the variance within the groups. In this case, the low F-value signifies that the variability in mean scores among the five variables is not substantial enough to warrant a conclusion of significant differences. Consequently, the hypothesis stating that differences exist among the mean scores of Relevance, Contextual, Variety, Usage, and Practice is rejected. As show in figure 4 the highest mean score is observed in the Practice category, indicating that students performed best in this area. This finding may suggest that the instructional methods employed in the experimental group effectively facilitated practice-related activities, leading to higher levels of engagement and understanding.

Figure 4

Mean scores of the Experimental Group in the Post Achievement Test in the Fifth Variables



CHAPTER FIVE

Conclusions, Recommendations, and Suggestion for Further Studies

5.0 An Introductory Note

The main findings of the study are summarized in this chapter, along with some recommendations and suggestions for additional research.

5.1 Conclusions

According to the findings of the current study, Concept Map Strategy was employed in this study.

Following analysis and data collection and test results indicate that:

1. Concept Map Strategy enables students do better in English vocabulary learning than those who use conventional methods.
2. The use of Concept Map Strategy helps students become more motivated to study English as a Foreign Language and enhance the relationship between students and teachers .
3. When teaching English, teachers need to use modern methods, such as monitoring classroom environment in a way suits students' age.
4. It enables students communicating with one another and helps students and teachers interact positively in the classroom.
5. It also helps students get over their shyness and hesitation also boosting their self-confidence.
6. By using Concept Map as a teaching strategy students can learn to recognize general and specialized vocabulary from each other and how they can be used.
7. A chance to communicate in English, ask questions, and utilize words or phrases to convey meaning through classroom dialogue is provided by the teaching methodology according to the Concept Map Strategy. So, students can connect concepts to each other by using English Language in classroom.

5.2 Recommendations

Some recommendations can be drawn Through the conclusions of this study

1. Concept Map Strategy is helpful to be implemented in teaching English to improve students' general and specialized vocabulary. Students are urged to use concept map strategy to understand what they learn .
2. Iraqi teachers of English language are recommended to adopt Concept Map Strategy in teaching texts to improve the way of teaching for Iraqi students..
3.The teachers must use engaging media to complement their instruction.
4.In order to engage students in learning activities, teachers must choose a stimulating topic for the classroom that is appropriate for the students' level and clearly define the lesson's objectives.

5.3 Suggestions for Further Studies

The following points are suggested, for further research:

1. The use of Concept Map Strategy to improve college students' sentence structure.
2. Applying Concept Map Strategy on intermediate school students in teaching texts to develop reading ability.
3. Assessing students' imagination thinking by using Concept Map Strategy as teaching method.

4- Investigating the effectiveness of Concept Map Strategy on teaching novel lessons.

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