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The Impact of Frayer Model Strategy on EFL Pupils' Achievement

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Keywords: - Frayer Model - achievement - Characteristics - Examples - non-examples	Abstract Frayer Model strategy is one of many main strategies presented to classroom teachers. When these strategies are followed step by step, they can have a positive impact on pupils' achievement. The current study aims at: 1. Investigating the impact of Frayer Model strategy on EFL pupils' achievement. 2. Investigating the improvement of EFL preparatory pupils' achievement To carry out the study, the hypotheses are posed as the following: 1. There is no statistical significant difference between the mean scores of the experimental group, which is taught by of Frayer
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Accepted: 1-9-2021	Model strategy and the control group which is taught by traditional method in post-test achievement.
Available online	2. There is no statistical significant differences between the mean scores of the experimental group students in the pre-test and post-test achievement.
	<p>A sample of the currant study consists of (60) pupils in fourth grade of secondary school scientific branch are derived from AL-Aqeeda schools for girls in Tikrit city. Two sections are selected as a study sample; Group (A) represents experimental group that includes (30) pupils are taught according to Frayer Model strategy. Group (B) represents control group which also include (30) pupils who are taught according to the traditional method. Both groups have been equalized in such variables from Educational level of parent, English grades achievement in previous schooling year , and the pretest of both groups . A unified posttest which contains ten questions are constructed to collect data . Face and content validity have been attained. To analyze the data, different statistical means have been used namely T-test, weighted mean and percentile mean to measure the pupils' post-test. The results explain that there is a statistically significant difference in the mean scores of the experimental group who is taught according Frayer Model strategy and the control group who is taught by using the traditional method , also there is a statistically significant difference between the mean scores of the experimental group in pre –post tests achievement.</p>

أثر إستراتيجية أنموذج فراير في تحصيل طلبة متعلمي اللغة الانكليزية كلغة أجنبية

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هند سعد دحام /جامعة تكريت/كلية التربية للبنات

<p>الخلاصة: أنموذج فراير هو أحد الاستراتيجيات الحديثة المتاحة لمعلمي ومدرسي اللغة الانكليزية. عندما تستخدم هذه الاستراتيجية متبعه الخطوات الصحيحة سوف يكون لها أثر فعال في تحصيل الطلبة بشكل جيد.</p> <p>تهدف الدراسة الحالية الى:</p> <p>١- تقصي أثر استراتيجية أنموذج فراير على التحصيل الدراسي لدى طلبة الاعدادية الدارسين للغة الأنجليزية كلغة أجنبية</p>	<p>الكلمات الدالة:-</p> <p>- أنموذج فراير</p> <p>- تحصيل</p> <p>- الخصائص</p>
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٢- تحسين التحصيل الدراسي لدى طلبة مرحلة الإعدادية
الدارسين للغة الإنجليزية كلغة أجنبية
ولتحقيق هذه الأهداف، وضعت الفرضيتين الصفريتين التاليتين:

١- لا توجد فروق ذات دلالة إحصائية بين درجة الوسط الحسابي
للمجموعة التجريبية والتي تم تدريسها وفقا لاستراتيجية نموذج فراير
والمجموعة الضابطة التي تم تدريسها وفقا للطريقة التقليدية في
التحصيل البعدي.

٢- لا توجد فروق ذات دلالة إحصائية في التحصيل القبلي
والبعدي للمجموعة التجريبية.

حيث تألفت عينة البحث من (٦٠) تلميذة في الصف الرابع الإعدادي/
للفرع العلمي تم اختيارهن من ثانويه العقيدة للبنات في مدينة تكريت .
واقترضت الدراسة الى مجموعتين: المجموعة الأولى التي تم اختيارها
عشوائيا لتكون المجموعة التجريبية وتضم (٣٠) تلميذة تم تدريسهم وفق
استراتيجية نموذج فراير.

والمجموعة الثانية التي تم اختيارها عشوائيا أيضا لتكون المجموعة
الضابطة وتضم (٣٠) تلميذة وتم تدريسهم وفق الطريقة التقليدية.

وقد كوفئت المجموعتان في عدة متغيرات طبقا لتحصيل الابوين ودرجة
التلاميذ في مادة اللغة الانكليزية للعام الماضي وفي الاختبار القبلي
للمجموعتين ثم انشاء اختبار بعدي يتضمن عشرة أسئلة لجميع البيانات
ثم اختيار صدق الظاهري وصدق المحتوى .

تم تحليل جميع الفقرات الاختبار احصائيا باستخدام وسائل إحصائية
مختلفة على وجه التحديد الاختبار التائي لحساب ومقارنه الوسط
الحسابي لنتائج الطلبة في الاختبار البعدي .

واظهرت النتائج بأن هناك فروق ذات دلالة إحصائية بين درجة الوسط
الحسابيين المجموعة التجريبية والضابطة لصالح المجموعة التجريبية،
وهناك ايضا فروق ذات دلالة إحصائية بين متوسط تحصيل المجموعة
في الاختبار القبلي والبعدي .

واعتمادا على نتائج الدراسة الحالية وضعت الاستنتاجات والتوصيات
والمقترحات لدراسات مستقبلية لإثراء البحث الحالي.

- امثله داله

وامثله غير داله

معلومات البحث

تاريخ البحث:

الاستلام: ٢٠٢١_٨_١٢

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التوفر على النت

1. Introduction

1.1 Statement of the Problem

A language and word rich environment is one in which pupil's opportunities to read, hear, use and talk about new vocabulary are many and varied. Obviously, these environments contain books and other materials (Blachowicz et.al, 2006:527). Taylor and MacKenney (2008:129) assert that pupils tend to understand some words or concepts better when they are related to other concepts of which they have knowledge and when positive and negative examples are given simultaneously.

In the Iraqi schools, the main problem is that EFL pupils have difficulties to memorize the word and acquisition a concept, because in teaching vocabulary technique utilized by the EFL teachers is not pleasant. The instruction of teacher consists of looking up unfamiliar words in a dictionary and memorization of word definitions, all typical habits that do not result in good word learning when used alone, after finding the words pupils forget them and confusing between words because to the lack use examples and non-examples. To solve the problem, English methodology researchers are actively experimenting with new ways to make the process of learning EFL easier and improve pupil achievement. Thus, the current study investigates the impact of Frayer Model on EFL pupils' achievement.

The Frayer Model is an appropriate model designed to help pupils to create a visual reference for concepts and vocabulary by organize conceptual information and draw pupils' attention to underlying patterns across examples and non-examples. It allows pupils exchange the knowledge and information among them with their teacher or through group works.

1.2 Aims of the study

This study aims to the following:

1. Investigating the impact of Frayer Model strategy on EFL pupils' achievement.
2. Investigating the improvement of EFL preparatory pupils' achievement.

1.3 Hypothesis of the Study

This study hypothesized that:

1. There is no statistical significant difference between the mean scores of the experimental group, which is taught by Frayer Model strategy and the mean scores of the control group which is taught by traditional method in post-test achievement.
2. There is no statistical significant difference between the mean scores of the experimental group in the pre-test and post-test achievement.

1.4 Scope of the study

This study is limited to the following:

1. Fourth year preparatory pupils at AL-Aqeeda school for girls.
2. The Academic year 2020/2021.

3. Unit two and unit three of the English for Iraq text book.
4. The use of Frayer Model strategy.

1.5 The value of the study

The current study is valuable to:

1. EFL teachers who seek to change their direction from a view of teaching as static with easy rules to teaching as dynamic. To do so, Frayer Model strategy which really engages pupils in their learning to be active teaching career.
2. Preparatory pupils; practically through creating positive learning situations, which will raise the pupils' achievement in English.
3. Curriculum designer who ought to include some knowledge on how to use Frayer Model strategy at different levels of textbooks to be implemented by the teachers.

1.6 Procedures of the Study

The researcher used the following procedures to achieve this study as:

1. Selecting randomly two groups, namely; experimental group and control group.
2. Applying a pre-test to the two groups for the sake of equalization between the two groups.
3. Teaching the two groups of the pupils, the English language. The control group is going to be taught according to the traditional method, whereas the experimental group is going to be taught by using Frayer Model strategy.
4. Submitting the two groups of the pupils a post-test to know the impact of Frayer Model on the pupils' achievement in English language.
5. Collecting the required data and statistically analyze them.

1.7 Definitions of Basic Terms

1.7.1 Impact

According to Hearn and Buffardi (2016: 8) impact is positive or negative change caused by a development intervention directly or indirectly, intended or unintended in the context of its environment, as it interacts with the multiple factors that influence development change.

Operational definition of impact: it means to reveal the effect of Frayer Model as a teaching strategy on the pupils' achievement.

1.7.2 Frayer Model

Dase (2010:20) defines Frayer Model is a strategy in which students use the graphic organizer as a means to better understand a concept and to distinguish that concept from others they may know or may be learning. The frame work of the Frayer model includes the concept word, the definition, the characteristics of the concept word, examples of the concept word, and non-examples of the concept word.

Operational definition of Frayer Model: means a strategy that allows the pupils to develop their ability of vocabulary building. It means a learning model that students go through as they work with the target knowledge or skill.

1.7.3 Strategy

According to Oxford (2017:13) defines the broad sense of strategy is a plan of achievement to meet a main or all aim, while it derives from an earlier military definition, a plan of action of a general .

Operational definition : is a method, a plan, or sequence of activities placed to achieves a specific educational aims that assistances teacher to solve a problem and enhance the abilities of the pupils in learning and speaking English.

1.7.4 Achievement

According to Allam (2000: 305) achievement refers to the mastery of what has been learnt or the degree of acquisition attained or achieved by a person in any teaching material in a particular field of education.

Operational definition of achievement is the quality and quantity of pupils' effort in standardized tests to measure their achievement. Something accomplished, especially by superior ability and special effort.

2. Theoretical Bacground

2.1 Theoretical Background of Frayer Model

The background of Frayer Model was founded by Dorothy Frayer together with her colleagues Frederick and Klausmeier in (1969), at the University of Wisconsin USA (Estacio and Martinez, 2017:38). The Frayer Model is known for its versatility across content domains, the Frayer Model did not emerge or originate as a graphic organizer, but as a seven-step process to analyze and test concept attainment (Greenwood, 2002:261).

Greenwood (2010:76) asserts that Frayer and her colleagues (Frederick and Klausmeier) originally outlined many steps procedure. Those are as follows:

1. Give the word and name its relevant attributes.
2. Discriminate the relevant from the irrelevant properties of the concept.
3. Give an example of the concept.
4. Give a non-example of the concept.
5. Relate the concept to a subordinate concept.
6. Relate the concept to a superordinate concept.
7. Relate the concept to a coordinate term.

Early research on the Frayer Model did not involve a graphic organizer, as is commonly used today. Later, this original model was developed by Graves (1985) for broader use in direct vocabulary instruction. The adaptation reduced the framework to six steps (Hale, 2017: 25).

Monroe and Pendergrass (1997:1) adopt two models of vocabulary instruction an integrated graphic organizer/discussion model and a definition-only model on the mathematical vocabulary. The integrated model combined a modified Concept of Definition (CD) graphic organizer with the Frayer discussion model.

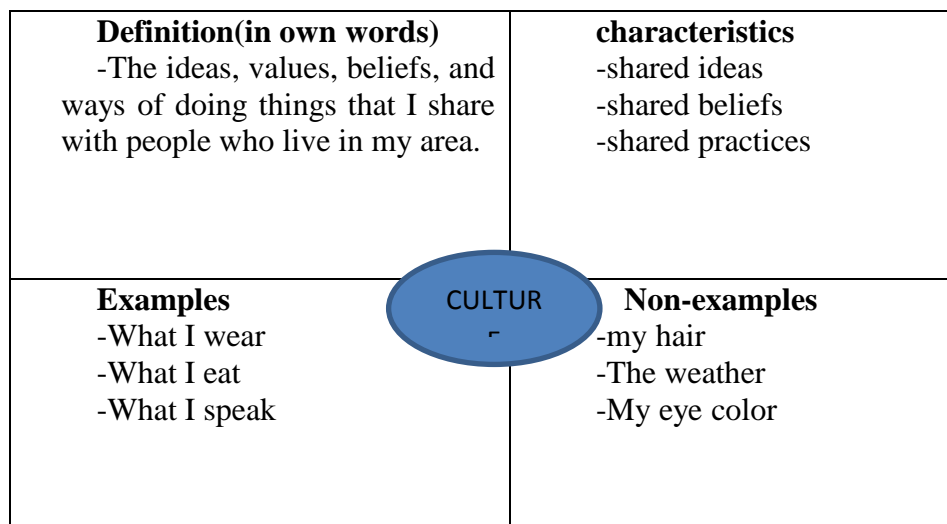
Current applications of the Frayer Model as a graphic organizer involve a four-square layout, two cognitive theories of learning fit with this format. The first schema theory, asserts that knowledge is stored in a framework of schemata. The second cognitive theory of learning that underlies the Frayer Model is linked to the use of verbal and visual representations of attributes that discriminate examples from non-examples dual coding theory (Reed et al., 2018:4)

2.2 The Concept of Frayer Model Strategy

The Frayer Model also, known as a word map, is a strategy designed to help students understand relationships and similarities between concepts by gathering information from print and digital resources and categorizing that information in a graphic organizer (Brummer& Clark, 2014: 39).

The Frayer Model includes a graphic organizer that requests pupils for organize their thought about a term using four categories: definition, characteristic, example, and non-examples. The definitions should go in the upper left square, characteristics should go in the upper right square, examples should go in the bottommost left square, and non-example should go in the right bottom part. (Reinburg et.al, 2009:209).

2018:2). Russet et al. (2013: 98) mention that a completed Example of the Frayer Model which can be used to help students obtain a best understanding of the concept(e .g culture).



Figure(1) Frayer Model .Russell, et al. (2013:100)

2.3 Phases of the Frayer Model

The first step in the model is the definition, then characteristics, examples and non-examples

2.3.1 Definition

First step in the Frayer Model, according to Aveyard (2018:30) clarifies concept definitions are society's attempt to translate these into words.

2.3.2 Characteristics

Next step in Frayer Model, help students determine the characteristics or attributes of this concept. Grefenstette and Muchemi (2016:2) clarify that to find out the characteristic vocabulary of a domain, it is important to find what words are semantically related within that domain

2.3.3 Examples

When a concept is first introduced by means of a definition. Here, the concept image cell is empty in the beginning. After many explanations and examples, it is filled progressively (Vinner, 1991:70).

2.3.4 Non-Examples

According to Abrams(1994:5) non-example an object or event that may at first appear to be subsumed by a concept, but that actually does not fit the pattern.

3. Methodology

3.1 The Experimental Design

In connection with the current study, aim and hypotheses demand the use of "Non-Randomized Pre-test- Post-test Design. Consequently, the two groups of the fourth scientific preparatory school pupils are the sample of the study.

3.2 The population and The Sample of the Study

3.2.1 The Population

The population can be defined as any set of items, individuals,.etc. that share some common and observable characteristics, and from which a sample can be taken (Richards and Schmidt, 2010:443). The population of the present study includes EFL Iraqi Preparatory pupils of the fourth scientific stage for girls in the city of Tikrit at Salah Al Deen Governorate. The total number of fourth class pupils' population is (587) of girls distributed into nine preparatory schools for girls in Tikrit city

3.2.2 The Sample

A sample is a subset of a population that has been chosen to participate in a study; it is a percentage of the total population that has been chosen to take part in the research project (Polit and Hungler 1999:227).

The sample of this study consists of (60) pupils who have been chosen from Al-Aqeeda Preparatory Schools for Girls in Tikrit. The fourth scientific stage consists of two sections. Section A has randomly been chosen to be the experimental group and Section (B) has been chosen to be the control group. Each section consists of (30) pupils

3.3Equalization

Certain variables that may produce a variance in the pupils' achievement should be should be considered; otherwise, they may affect the research results. The equivalence has made between the experimental and control group to the following variables, Age of the pupils , The Academic level of the Mother, the Academic

Level of Fathers, Pupils' achievement in English Subject at Previous Schooling Year and pupils, achievement in the Pre-Test.

1.4 Statistical Means

- 1- Percentage
- 2- Chi-square
- 3- Alpha Cronbach Formula
- 4- T-test formula for two independent sample
- 5- T-test formula for paired sample
- 6- Standard Deviation
- 7- Formula of Discrimination Power .
- 8- Formula of Difficulty Level

3.5 Application of the Experiment

The application of the experiment started on the 1^oth of December in 2020. On that date, the pre-test has been applied. The experiment has lasted for 16th of February 2021. Because of the current situation (Epidemic situation) COVID 19 in all over the world, the trends now are towards electronic education in both 2020 and 2021. The lessons of the secondary schools are arranged to be on every Sunday, Tuesday and Wednesday. On Tuesday, the researcher applied the experiment on the pupils in class, while on Sunday and Wednesday through (electronic tutoring lessons).

The experimental group has been taught the Frayer Model strategy while, the control group has been taught the same units by employing traditional technique of teaching. In order to teach the Frayer Model strategy, the researcher followed the procedure below:

- 1- The working procedures are clarified to make the pupils familiar enough with the background of what they are going to do. The researcher has been started with the descriptive Frayer Model strategy.
- 2- The researcher introduces the Frayer Model strategy to pupils to learn the new vocabulary with a graphic organizer .Clarify the Frayer Model is four square model that will support pupils think about a term from four different angles.
- 3- The researcher chooses a concept with which all pupils should be familiar. It could be a technical term from a previous lesson, but it is regularly a good choice to use something simple that could generate discussion about the characteristics.
- 4- Prepare a large version of the Frayer Model template that all pupils can see, such as PowerPoint slide , chart paper or draw the model on the board.
- 5- The lessons are presented with a color pen or color card in order to enhance the information and to activate the pupils' knowledge .
- 6- The researcher introduces the pupils to the Frayer Model by building on their prior experience and guiding their thinking. Show the model for the whole class and briefly discuss what goes into each section.
- 7- Pupils understanding words within the larger context of a reading selection by requiring pupils, first, to analyze the items through definition and characteristics and, second to synthesize or apply this information by thinking of examples and non-examples.
- 8- The researcher makes pupils work in small groups or pairs to debate their terms.

- 9- Pupils make a Frayer diagram for a term, they be able to write what they have learned to define the term in their own language. Moreover, the pupils are asked to share their conclusions with the entire class.

3.6 Lesson Planning

Most lesson plans are probable to comprise at least components such as: class level, lesson length, aims what the teacher or the pupils will accomplish, target language, interaction, the timing for each activity, and procedures. Lesson Plans assist the teachers to think completely about what to do, how and why to do. If teachers aim at delivering a successful lesson, they need to think of two crucial components of clear and achievable realistic aims. The aims of the lessons, as key items of lesson plans, are to state the reasons for each part of the lesson (Riddell, 2003: 71).

The basic lesson plan has already been prepared. The control group's lesson plan is created according to the teacher's guide's guidelines. While, The experimental group lesson plan is worked out according to the teaching Frayer Model strategy.

3.7 Final Administration of Instruments

The post-test is administrated on two groups, experimental and control and conducted in different places, at different times, , and on the same day. The exam's duration was limited to (120) minutes to finish the examination and answer the test completely. Two preparatory school teachers assisted the researcher in monitoring the classroom while explaining the questions to the students.

4. Analysis of Data and Discussion of Results

4.1 Discussion of Results

The current study attempts to investigate the impact of Frayer Model strategy on EFL pupils' achievement. It also attempts to show whether there are significant differences between the two groups, the experimental and the control group at pupils' achievement.

The pupils of the experimental group who have been exposed to Frayer Model strategy get better scores than the control group who have been taught according to the traditional strategy in their achievement. The study reveals that the pupils improve their achievement of the four skills after utilizing Frayer Model strategy.

In order to find out differences between the mean score of the two groups t-test formula for two independent groups has been used. The computed t-value is (9.54) which is higher than the tabulated t-test value which is (2.00) at the level of significance of (0.05) and a degree of freedom (58).

Also, it has been noticed that teaching English by Frayer Model strategy affects the experimental group; that the calculated t-value (14.14) which is found to be higher than the tabulated t-value (2.04). Using Frayer Model strategy led to the improvement of pupils' achievement by creating various activities. This is done through the class room environment by using many digital tools .This means Frayer Model strategy can be applied by using technology tool or without.

The aim of the present study have been fulfilled, the researcher can say that the teaching of Frayer Model strategy may impact on the experimental group. Therefore , the first hypothesis is rejected because it asserts that there is no statistical significant difference between the experimental group mean scores, that is taught by Frayer model strategy and the control group mean scores that is taught by traditional method in the post-test

Moreover, the second hypothesis is rejected also, which asserts that there is no statistical significant difference between the mean scores of experimental group in pre and post-test.

The second aim is achieved and pupils of the experimental group showed improvement in their achievement. As a result, the following can be attributed to the results in light of the current study and in relation to the researcher's observation about Frayer Model during the experiment:

- 1- This strategy encourages students to comprehend words in the context of a reading selection by asking them to examine the concept (definition and features), then synthesize or apply the information by considering examples and non-examples.
Breaking complex and difficult words into simpler words or segments that the pupils can easily understand.
- 2- When pupil share their examples and are introduced to the word many times during the lesson, repetition occurs.
- 3- Pupils begin enjoying through Frayer Model strategy.

5.1 Conclusions

Building on the results of the current study, the following conclusions have been drawn:

- 1- The study concludes that using the Frayer Model as a teaching technique will benefit pupils by making learning active, more enjoyable, and engaging. The experimental group that is taught using the Frayer Model approach performs better on the achievement test than the control group that is taught using conventional approaches.
- 2- Using Frayer Model as assessment tool for learning to plan next steps. The findings enabled the researcher to realize the effective teaching occurs when pupils' strengths and weakness are recognized
- 3- Using the Frayer Model enables pupils to become strategic problem solvers. Visuals used in Frayer Model enhance the thinking process of the pupils. Through the graphic organizer, the pupils can organize their thoughts and process the information in the question. Also, it may improves pupils' recall of word meaning.
- 4- The Frayer model is a method of teaching that is cognitively guided. There are three main phases in this process. The first phase, the introduction phase, introduces the vocabulary. The Development phase is the second phase. To complete the diagram, the pupils find for instances, non-examples, examples and characteristics of the vocabulary. The conclusion steps is the final phase. The review of the lesson is done in this phase.

- 5- There was much more interaction between pupil and teacher during the Frayer Model lessons and this may have led to better pupil growth and understanding.

5.2 Recommendations

After put the conclusions of the current study, some recommendations can be drawn:

- 1- Iraqi English language teachers are invited to adopt the Frayer Model strategy in teaching.
- 2- Teaching strategies should focus on raising pupils' cognitive, analytic thinking and communicative strategies by using graphics.
- 3- Teachers of EFL should be trained on the use technology tools and social media in teaching foreign language, technology facilitates the learning process and saves time.
- 4- Curriculum designers and decision makers should reflect the Frayer Model strategy to activate pupils' prior knowledge while building the curriculum activities included in Iraqi preparatory textbooks.

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