

Study the Effect of Using Learning Cycle Strategy on Achievement of First Year Students in Arabic Grammar at Al-Qasim Green University/ College of Environmental Science

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Abstract

This study aims at investigating the effect of using (5Es) *Learning Cycle Strategy* on achievement of first year students in Arabic grammar at Al-Qasim Green University/ College of Environmental Science.

In order to achieve the aim of this study, the researcher randomly selected the College of Environmental Science that is one of the colleges at Al-Qasim Green University; the researcher used a partially experimental design. The sample of the study made up of (60) students (30 students in experimental group and 30 students in the control group).

The researcher equivalents between the two study groups in the following variables: age by months, the marks of Arabic grammar in the previous semester, the academic performance of parents, there was no statistically significant differences at (0.05).

After determining the scientific topic (the experimental topics), the researcher formed a behavioral objectives of the specific topics, and after presenting these objectives in its essential form to a number of experts and specialists in the methods of teaching Arabic language to validate its validity, which reached to (20) behavioral objectives in its final form.

When the experience has been conducted, the researcher taught himself the two study groups from 1/10/2018 to 28/1/2019. After preparing an objective achievement test consisting of (20) items in their final form characterized by validity and stability, the researcher applied it to a sampling survey of (30) students in another college (College of Agriculture - Al-Qasim Green University).

After applying the summative assessment on the sample of this study, the researcher dealt with data statistically by using t-test. After getting the final results, the results showed that the students of the experimental group who have studied Arabic grammar by using the learning cycle strategy are better than the students of the control group who have studied Arabic grammar by using the traditional method, the differences were statistically significant at the level of (0.05).

Through the results of this study, the researcher recommended that "it is necessary to use (5Es) Learning Cycle Strategy in teaching Arabic grammar".

As a complement to this study, the researcher suggested conducting a similar study on other departments in different colleges.

Keywords: Learning Cycle Strategy, First Year Students in Arabic Grammar, environmental Science

I. STATEMENT OF THE PROBLEM

Learning Cycle Strategy is one of the teaching method strategies that is used by teachers in classroom learning (Jassim, 2000: 101).

Throughout our work in the educational field, we have observed that there is a significant weakness to the learners by rebuilding the lexical concepts in conceptual and contextual meanings, the poor performance of teachers to acquire the

conceptual meanings and use these meanings to build the linguistic knowledge, the low level of systemic thinking among the first year students at Al-Qasim Green University/ College of Environmental Science has led to a deep sense of the problem, which can be formulated as follows: *What is the Effect of Using (5Es) Learning Cycle Strategy on Achievement of First Year Students in Arabic Grammar at Al-Qasim Green University/ College of Environmental Science?*

Throughout teaching Arabic grammar, we can observe that the students in any stage of education do not study the Arabic grammar in their ideas but they memorize only what they need in order to pass the exam to get good marks, then they forget what have they studied before; this, in turn, makes some barriers to Arabic teaching to achieve the main aims of teaching. The present study intended to find an easy way to teach Arabic grammar.

II. THE SIGNIFICANCE OF THE STUDY

The grammar lesson aims to awareness the young people about the past and the present of their nation and creates the future. In addition to the desire in the the human soul, the disclosure of trends, encourages, needs and interests, the refinement of conscience, filtering feeling, refining tastes, and relieving the feeling by understanding the text and interacting with it.

Some educators believe that it could do without teaching Arabic grammar in independent lessons, practicing the correct reading and writing method, to take care of the methods of speaking in teaching, the simulation has an effect on to redress of tongues because selecting some lessons of teaching Arabic grammar are meaningless and dissipation of efforts without benefit to the students (Ibrahim, 1973: 252).

The researcher believes that the grammar lesson is easy according to the students who have studied the scientific lessons in order to satisfy their needs for, because the study of grammar is a masterpiece that simulates the mind and the heart together, it is while the mind is left in the depth of the quality of its industry, touching the passions of the heart and mind to make it wander in the flood of it.

Then, the teacher is faced with the fact that how does he/she satisfy the needs of the students? And how does he/she give them good knowledge?

The answer of these questions is: if the grammatical purposes are not clear, the teacher has to look at the methods in which these purposes used. So, there is no other way to teach, only the way that is used by the teacher to present everything through explaining the lesson.

Many different studies have been conducted that dealt with Arabic teaching methods such as (Mijual's study, 2004: 1-64; al-Arnusi's study, 2005: 1-109; Hadi's study, 2005: 1-108), due to the importance of the method. Teaching methods are considered as an essential part of teaching and learning. So, teaching methods help to convey the schools topics to the students regularly. The value of teaching methods lies in how the teacher can use the content of the curriculum correctly in order to achieve the aims of this topic (Abd al-Aziz, 1969: 196).

For this reason, Kilbatrak describes teaching methods as "the method is a part of education, while the another part is the curriculum, so, the educational process cannot success by using one part without the other (al-Yassin, n.d.: 54).

The Study Aims

This study aims at investigating *Learning Cycle Strategy* on achievement of first year students in Arabic Grammar at Al-Qasim Green University/ College of Environmental Science for the academic year 2018-2019.

The Hypothesis

The researcher has used the following null hypothesis:

There was no statistically significant difference between the achievement of the two groups of first year students/ College of Environmental Science in Arabic Grammar, one group who have studied according to *Learning Cycle Strategy* and the other have studied according to the traditional method.

III. LIMITATIONS

The scope of this study is limited to:

1. One College of Al-Qasim Green University- daily study in Babylon city.
2. A sample of first year students/ College of Environmental Science.
3. Some topics of Arabic grammar.
4. The first semester of the academic year 2018-2019.

Definitions of Basic Terms

- *Learning Cycle Strategy*

According to Lawson *Learning Cycle Strategy* is one of the good teaching methods, because this strategy links students with the survey of meaning that made up of three steps: "Exploration, introduce the concept and applied the concept" (Lawson, 1996: 38).

Jassim (2001) stated that *Learning Cycle Strategy* is one of teaching styles, which focuses on the interaction between the teacher and the learner during teaching, this strategy according to Jassim also made up of three steps: "Exploration, introduce the concept and applied the concept" (Jassim, 2001: 54).

Section Two

The Previous Studies

2.1 Arabic Studies

1. The Study of al-Maula (1999):

The researcher has conducted this study at the college of Education for Humanities University of Mosul, this study intended to study the effect of using *Learning Cycle Strategy* and *Posner Model* of the conceptual interpretation in Animal physiology among the students of college of education/ University of Mosul.

The researcher has used an experimental design with the equivalence groups, the study sample was (75) students of the third grade/ Department of Biological Sciences. The researcher divided the sample into three groups of equal number that selected randomly; two of these groups are experimental groups and the other is control group, as the following:

- The first experimental group who have studied according to *the Learning Cycle Strategy*.
- The second experimental group who have studied according to *Posner Model*.
- The control group who have studied according to the traditional method.

The researcher equaled between these groups in the variables of age by months, the marks of second semester, the academic performance of the parents, Intelligence quotient (IQ) and the pre-diagnostic test.

The experience was conducted during the first semester for the academic year (1998-1999). The concepts have been studied by the researcher were (148) concepts, which divided into seven main units in animal physiology. The researcher prepared two tools; the first one is Achievement Test with multiple choice questions in the diagnostic point and the second is a test in the treatment point; the test was varied (objective and essay, that made up of seven questions. The researcher has made sure the face validity and content validity as well as she found out the Item difficulty, the item discrimination, validity and form the behavioral objectives of the concepts.

The researcher has used one-way analysis of variance in order to identify the significant differences between the study groups in some variables, and also to test the significant differences between the average marks of two groups from all the three groups in the treatment test.

The results have led to the effect of *the Learning Cycle Strategy* in changing the concepts and go better than the students of the control group (al-Maula, 1999: I – IV).

2. The Study of Jassim (2000):

This study has conducted in the college of education for human sciences/ Kuwait University. This study aimed at investigating the effect of using *the Learning Cycle Strategy* to improve the achievement of science among the students of the first intermediate grade in Kuwait.

The study sample made up of (342) students, the researcher selected the sample randomly of the first intermediate grade in Kuwait, the sample divided into two groups (experimental group and control group), the experimental group made up of (171) students “83 male students and 88 female students”, while the control group made up of (171) students “80 male students and 91 female students”, all the students at two intermediate grades.

The experimental group has studied *Vertebrates and Invertebrate Unit* according to *the Learning Cycle Strategy*, while the control group has studied according to the traditional method.

The researcher used the experimental design with partial adjustment of two groups (experimental group and control group), the researcher equaled between the two study groups in some variables such as: age, the previous achievement, teacher and Class numbers.

The researcher used to teach these groups (12) teachers, who are equal in knowledge, experience and age.

3. The Study of al-Janabi (2011): “the Effect of Using *the Learning Cycle Strategy* in the Achievement of Students of the Second Intermediate Grade in Biology

This study aims at investigating “*the Effect of Using the Learning Cycle Strategy in the Achievement of Students of the Second Intermediate Grade in Biology*”. The researcher used the experimental design through the two groups (the experimental group and control group) as well as the pre and post-tests of independent variables that concerning the study. The researcher prepared an achievement test that made up of (25) items with multiple choices and a measurement ready to go towards (totally agree, agree, I don’t know, disagree and totally disagree).

The study has conducted in the first semester of the academic year 2010/2011 in Abu Dharr al-Ghifari Intermediate School for boys, the study sample made up of (50) students of the second intermediate grade; with two groups each group contains (25) students. Section (B) is the experimental group who have studied according to *the Learning Cycle Strategy*, while Section (A) is the control group who have studied according to the traditional method (without using *the Learning Cycle Strategy*). The statistical devices have been used such as (T-test, Chi-Square, Kuder-Richardson Formula–20, Alpha Cronbach Coefficient and Black modified gain ratio) the study has found out the following results:

1. There is statistically significant differences at (0.05) of the experimental group who have studied according to *the Learning Cycle Strategy* on the control group who have studied according to the traditional method in the pre-achievement test that has prepared for this purpose.

2. There is statistically significant differences at (0.05) of the experimental group who have studied according to *the Learning Cycle Strategy* on the control group who have studied according to the traditional method according to the measurement of attitude in Biology.

3. The adjusted getting rate of the experimental group is higher than the control group so the experimental group is a significant and the control group is not significant.

According to the results of the study that indicates that the use of *the Learning Cycle Strategy* has a great effect in improving the academic performance of the students as well as their attitude towards Biology. Through the study results, this study represents some recommendations that may help in improving the biology teaching methods and developing these methods in a specific and generic way in intermediate and preparatory schools.

Balancing between the Previous Studies and the Present Study

Throughout the previous studies, the researcher found out the following:

The previous studies varied on the aims, which due to its variables and the school grade that has dealt with as well as its problem. This study has agreed with the previous studies in terms of the aims. This study has intended to investigate the effect of *the Learning Cycle Strategy* in the achievement of the fifth grade students in the scientific branch in Arabic grammar.

The previous studies have used the experimental design; this study also used the experimental design because it is the suitable approach for this study.

1. The topics in previous studies have varied with the present study. The study of al-Maula (1999) has focused on Animal physiology among the students of college of education/ University of Mosul. The study of Jassim (2000) has focused on the science among the students of the first intermediate grade, while this study has focused on Arabic grammar at Al-Qasim Green University/ College of Environmental Science.

2. The places of conducting previous studies have been varied, for example: some of these studies have been conducted in Iraq such as (the study of al-Maula 1999). Some of these studies have been conducted in Kuwait (The study of Jassim, 2000), while the present study has conducted in Iraq.

3. The previous studies have varied in terms of the grades in which they were applied, the study of al-Maula (1999) has conducted at the university grades, and the study of Jassim (2000) has conducted in the first intermediate grade. This study has been conducted at the university level.

4. All the previous studies have not mentioned how to choose the samples, but the researcher in this study followed the random method of selecting the study samples.

5. The number of the study sample in the previous studies has been varied from one study to another according to the study community, the minimum number is (75) students, and the maximum number is (342) students in Jassim's study (2000). While the number of the present study is (60) of the first-year students at Al-Qasim Green University/ College of Environmental Science. So, the clear variation of the number of samples is due to the different objectives, variables and circumstances of the study.

6. The previous experimental studies have depended on conducting achievement tests (post-tests) in the topics that has experienced in order to measure the academic performance level of the study sample after finishing the experience period to investigate the effect of the independent variable in the dependent variable. So, this study has agreed with the previous studies in this.

7. The previous studies have varied in the number of test items, the number of the test items in this study was (20) items.

8. This study has agreed with the previous studies in the study instrument (Achievement Test).

9. The present study has varied with the previous studies in the number of dependent variables, in some studies was one dependent variable and some of them were two variables, while in the present study there is one variable, which is the achievement.

10. The previous studies have varied in the adoption of gender variable, some of which have been applied on boys, while some other studies have been applied on girls. The present study has been in agreement with studies applied on boys and girls.

11. The previous studies have varied in the time it took to experiment, while the time of this study was (10) weeks.

12. In the previous studies, the researchers studied the persons of the samples by themselves, as did the researcher in this study.

13. All the researchers were keen to conduct group parity processes in a number of variables such as age by months, the academic performance of parents and the achievement of the persons of the study sample in the subject for the previous academic year. So did the researcher in this study.

14. As for statistical methods, the previous studies have used various statistical methods, such as: Pearson Correlation Coefficient, Chi-Square, Standard Deviation (SD), and T-test of two independent samples.

The researcher believes that the statistical methods that will be used in this study are depended on the study hypothesis.

Section Three

Materials and Methods

1. The Study Approach

The researcher used the experimental approach because it is the suitable approach that helps in achieving the study aim.

2. The Experimental Design

The researcher used the experimental design with random partial adjustment in order to select the post-test, which is appropriate for this study.

The first experimental group represents the groups in which the students face the independent variable (*the Learning Cycle Strategy*), the control group represents the groups in which the students have been studied according to the traditional method. The achievement test is measured the dependent variable (the achievement) in order to investigate the effect of *the Learning Cycle Strategy* in the achievement of the students of the two groups.

3. The Study Sample

1. The Sample of Colleges

The researcher randomly selected College of Environmental Science in order to conduct the experience in¹. The college made up of three departments, the students at the college are belong to the same environment as well as their economic, social and cultural levels are similar.

2. The Sample of Students

After determining the college in which the experience will conduct in, the researcher visited the college to facilitate the experience. The researcher found out that the college contains three departments, are: the Department of Ecological Health (DEH), Ecological pollution Department and Ecological Sciences Department. The researcher randomly selected two departments, they are: the Department of Ecological Health (DEH) and Ecological pollution Department. The two teaching methods were randomly distributed to the two sections, the Department of Ecological Health (DEH) has studied according to *the Learning Cycle Strategy*, while the students of Ecological pollution Department have studied according to the traditional method, the students' number of the two groups made up of (60) students, each group consists of (30) students.

4. The Equivalence of the Study Groups

¹ The school selection process was done in a simple random draw. The researcher wrote the names of the schools on small papers and put them in a bag, and then asked his youngest daughter to withdraw one of them, so it was the college of Environmental Sciences, as well as with regard to the selection of the two sections as it was done in the same way.

The researcher was keen before he proceeded to apply his experiment to the equality of the two study groups in the variables that are believed to affect the results of the experiment although the members of the sample of the same environment, and of the same gender, these variables are:

- a. The Students' Age by Months.
- b. The Marks of Arabic Grammar in the Final Exam of the 6th Grade –Scientific Branch for the academic year 2017-2018.
- c. The Academic Performance of Parents.

The researcher obtained data on the previous variables from the student's school card, and scored grades in cooperation with the registration department of the college, and here comes the clarification of the equality of students of the two study groups statistically in the previous variables:

1. Age by Months:

The average age of students of the first experimental group was (228.26) months, the average age of the students of the second experimental group was (227.86) months, and when using the T test for two independent samples to know the difference between the ages of the students of the two study groups, it turns out that the difference is not statistically significant at the level (0.05), as the calculated T value was less than the tabulated T value.

2. The Marks of Arabic Grammar in the Final Exam for the 6th Grade- The Scientific Branch ²

The average marks of students in the first experimental group in Arabic grammar in the final exam of the sixth grade scientific branch for the academic year 2016 -2017 (63.24) marks, and the average marks of students of the control group were (62.48) marks, and when using The equation of the T test for two independent samples to determine the difference in the grades of the Arabic grammar between the two groups, it appeared that the difference is not statistically significant at the level (0.05), since the calculated T value was smaller than the tabulated t-value of the table with a degree of freedom (58) degrees, This indicates the equality of the two study groups in this variable.

3. The Academic Performance of Parents

At the significant level (0.05) the two study groups, it is clearly that the two study groups are statistically equal in the academic performance of fathers ³, as the results of the data using the Chi-Square test showed that the calculated χ^2 value is (4.68), which was smaller than the tabulated χ^2 value that is (12.59) with degrees of freedom (DF) is (58).

At the significant level (0.05) the two study groups, it is clearly that the two study groups are statistically equal in the academic performance of mothers, as the results of the data using the Chi-Square test showed that the calculated χ^2 value is (1.44), which was smaller than the tabulated χ^2 value that is (12.59).

4. Intervening Variables (Nonexperience)

These variables mean that they can affect the outcome of the experiment and interfere in its course, without the trial aiming to study it (Abd al-Khaleq 1990: 120). Examples include variables associated with the time factor, conditions, or physical characteristics in which the experiment is conducted for the experimental and control groups. Such variables should be adjusted so that they are not in favour of one group but not the other (Jaber 1973: 199-200).

In order to achieve equal between the two study groups, the researcher tried hard to adjust some variables that have an impact on the dependent variable (achievement) that the researcher believes may affect the integrity of the experiment.

² The mark of Arabic language in the final exam for the third grade of the intermediate school (100 M.).

³ The researcher incorporated the cells (read and write) and (primary) into a single cell because the expected frequency is less than (5) and thus the number of cells (4) and the degree of freedom is (58). (Al-Sufi, 1985: 26).

These are the Intervening Variables:

1. Conditions of experience and associated accidents

The members of the two study groups were not exposed to any emergency or accident that delayed the progress of the experiment and affects the variable dependent besides the effect of the independent variable, so the effect of this factor was avoided.

2. Experimental Mortality

The experimental Mortality means the effect of leaving or interrupting some members of the overall study sample, which affects average achievement (Al-Zubai, 1974: 98).

The researcher was not exposed to such circumstances, except for individual absences to which the two research groups are exposed in small proportions and at about the same level.

3. Maturity Processes

The experiment time was the same for the two study groups, which is one semester, that begun on (1/10/2018) and ended on (10/12/2018). The experimental design adopted by the researcher was made up of two experimental groups and one control group, so that the growth that occurs will return to the members of the two groups, i.e. that this factor was not affected in this study.

4. Selecting the Sample Members

The researcher tried as much as possible to control the differences in the selection of the members of the sample by conducting statistical equivalence selections between the two groups of the present study, by the age, the marks of the Arabic language in the final exam of the sixth grade- scientific branch and the academic performance of the parents. The students' circumstances are almost similar because they belong to the same social environment.

5. The Study Tool

The researcher used the same tool, which is "the achievement test" in order to measure the performance of the students of the two study groups, which was characterized by objectivity, validity and stability.

6. The Effect of the Experimental Procedures

In order to protect the experience from some experimental procedures that can effect on the dependent variable, the researcher worked hard to reduce the impact of this factor on the course of the experiment, such as:

a. The School Subject

The specific school subject was the same of the two study groups, the topics were four, are: (The Subject and Predicate, The Elements of Subject and Predicate, Coordination and Adverb), so that the researcher has reduced the impact of this factor.

b. The Teacher

In order to give accuracy and objectivity to the study, the researcher himself studied the students of the two study groups, because one teacher of each group makes it difficult to return the results to the independent variable alone, it may be due to the ability of a teacher of the subject more than the others, or his personal qualities, or otherwise.

c. Lessons Distribution

Through distributing lessons equally between the two study groups, the impact of this factor was controlled; the researcher was studying one lesson per week, at the rate of one lesson per group, according to the quota distribution method to the teachers.

d. Teaching Aids

The researcher used the same teaching aids in the two study groups, in terms of the similarity of whiteboards and the use of a two-color Marker pen.

e. The College Building

The researcher applied the experience in the college of Environmental Science, in adjacent rows similar in terms of space, number of windows, lighting, and ventilation, number of seats, type and size.

f. The Experience Period

The experiment period was the same for the students of the two study groups, starting on 1/10/2018 and ending on 10/12/2018.

7. Formulating the Behavioral Objectives

The researcher divided the general objectives into behavioral objectives for each topic to be taught during the experiment period, the number of behavioral objectives as initially is (23), which divided among the five subjects involved in the study. In formulating the behavioral objectives, the researcher took into account the observing and ease of measuring these objectives (Jaber, 1977: 287).

In order to verify that the behavioral objectives of the content of the subject are fulfilled, the validity of its derivation from the content of the subject, and the validity of its construction, it is presented with the content of the subject to a group of experts specialized in psychology, Arabic language and teaching methods. After reviewing their opinions and observations, the researcher made the necessary adjustments and deleted the objectives that were not agreed upon (80%) Thus, the number of behavioral objectives in their final form was (20) behavioral objectives, each subject made up of (4) behavioral objectives.

8. Preparing Lesson Plans

Since the teaching plans were one of the requirements of successful teaching, the researcher prepared the teaching plans for the four topics to be taught during the period of the scheduled experiment and behavioral objectives of the subject approved by the experts, and presented these plans to a group of experts and specialists in the teaching methods of Arabic language, and after the researcher was briefed on their opinions and suggestions, made the necessary adjustments to make them sound to ensure the success of the experiment, and ready for implementation.

Method of Experimentation

After completing all the requirements of the experiment, the researcher began to apply them on Sunday, 1/10/2018, which was dedicated to the introduction of students of the two study groups, and the researcher commissioned the students to prepare the first topic required to be studied in order to involve them in discussing it during the lesson⁴ on 8/10/2018.

9. The Study Tool: The Achievement Test

Since the present study requires an educational test to measure the achievement of students of the two study groups in light of behavioral objectives, levels, and content of the specific material of the experiment, the researcher prepared an educational test that included in its initial form (20) items of the type of choice of multiple.

The researcher preferred objective tests because they measure the objectives mostly and they can include more items, and thus represent a larger sample of the student's behavior, so the objective test is more valid and more stable than the article test (Jaber, 1983: 354).

Test Validity

⁴ The researcher preferred to involve students in discussing the subject in case of the usefulness of this method in teaching grammar (Al-Jubouri, 1986: 106).

Validity is the most important characteristic of the excellence of a good test, because an unfaithful test cannot perform any function (Abd al-Da'im 1981,355). The researcher used the face validity for the purpose of verifying the validity of the test, presenting the items of his test that was (24) items to a selection of specialized experts, asking them to give their observations about the validity of the test items, their measurement of behavioral objectives, and their coverage of the content of the four topics specified for the experiment, as well as the validity of the construction of those items and the levels they measure.

After notifying the researcher of the experts' opinions, he made the necessary amendments to his items and omitted (4) items that did not reach the percentage of agreement (80%) The number of items in its final form is (20) items.

Analyzing the Test Items

In order to know the items difficulty of the test and the strength of its distinction, the researcher examined the answers of the students of the survey (60) asking to give (1) mark for the correct answer, and gave zero for the incorrect answer, and the treatment of the abandoned items and items for which more than one answer was drawn, and items that were not clear the references to the correct answers, and then arranged their grades down, and took the whole sample (al-Imam *et al.*, 1990: 108).

As the survey is made up of (60) students, the researcher divided it into two halves, the first consisting of (30) students that called the upper class and the rest (30) students that called the lower class (al-Imam *et al.*, 1990: 108).

The highest mark in the upper group was (20) marks, while the lowest mark in the lower group was (14) marks, then according to the researcher the level of difficulty and strength of discrimination for each of the items of the test as follows:

a. Item Difficulty Coefficient

To extract the item difficulty coefficient for each of the test items, the researcher used the following equation:

$$\text{The item difficulty coefficient} = \frac{\text{Total correct answers in the upper group} + \text{total correct answers in the lower group}}{\text{the persons number of the two groups}}$$

After calculating the item difficulty of each of the test items, the researcher found that it was limited between 0.40 to 0.80, which means that all the test items are acceptable, as Bloom believes that the test items are good if the coefficient of difficulty between 0.50 to 0.60 while they are acceptable if its item difficulty between 0.20 to 0.80 (Bloom: 66).

b. Item Discrimination

It is the extent to which the test item is able to distinguish between students at higher levels and those with lower levels in relation to the characteristic sought by the test (Al-Ajili *et al.*, 2001: 72).

After calculating the item discrimination of each of the test items, the researcher found that it is limited to (0.36 0.52). It is clear from this that the test items distinguish between the students of the higher group and the students of the lower group in their academic achievement, as Abel considers that the test items are valid if the item discrimination is (0.30) and above. Ebel-R.I. 40. So, the researcher kept all the test items.

Reliability

The test reliability is giving the results if the researcher used the test more than one time under a similar conditions (Jaber and Ahmed Khairi Kadhim, 1973: 276-277).

The researcher has used the spilt-half reliability in calculating the reliability of the test, because it is one of the most common methods of reliability of the test, due to the fact that it avoids the defects of some other methods. The researcher adopted the degrees of application of the survey test in the Department of Horticulture faculty of agriculture at Al Qasim Green University, after he divided the 20 items of the test in its final form into two groups, the first group included the grades of even items, while the second group included the grades of the odd items.

By using the *Pearson correlation coefficient*, the researcher extracted the reliability coefficient between the two groups. Its value was (0.92), which is a very good reliability coefficient, as non-coded tests are good if their coefficient of reliability is (0.68) and above (Abu Allam, 1999: 434).

The test was considered valid and ready to be applied in its final form.

Applying the Test on the Study Sample:

Two weeks before the end of the experiment, the researcher told the students that there would be a test for them in the topics that they have been studied.

The researcher applied the achievement test on the two study groups on Monday, December 10, 2018 at 9:00 A.M. then the researcher set up the exam hall in agreement with the two department managements, and supervised with the researcher the two headmasters of the two departments in order to keep going the experience, finally the experience has ended successfully.

Method of Correction of the Test

During the correction of the answers, the researcher relied on the basis of giving (1) a mark for the correct answer for each of the test items, and zero for the incorrect answer, while the researcher treated the abandoned items, for which more than one alternative was placed, and the items for which the references to their alternatives were not clear the treatment of the answers Incorrect, and on this basis the highest mark for the test was (20) marks, and the minimum mark was (zero), and after the correction process, the researcher found that the mark (20) is the highest degree, and mark (14) is the lowest.

Statistical Methods

The researcher used the study procedures and results analysis the following statistical methods:

1. **T-Test with two independent variables:** that is used by the researcher in order to make equivalence between the two study groups in some variables and calculating the significance differences between them in the achievement test.

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\left(\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{(n_1 - 1) + (n_2 - 1)} \right) \left(\frac{1}{n_1} + \frac{1}{n_2} \right)}}$$

The equation of T-Test is:

So,

X₁: The arithmetic mean (X) of the first group.

X₂: The arithmetic mean (X) of the second group.

N₁: The Number of first study sample.

N₂: The Number of the second study sample.

S₁²: The Variance of the first group.

S₂²: The Variance of the second group. (al-Bayati and Zakaria, 1977: 260).

2. Chi-squared test (χ²)

The researcher in order to make equivalence between the study groups in the academic performance of the parents. The equation of Chi-squared test is:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

O = the frequencies observed

E = the frequencies expected

\sum = the 'sum of' (Ibid: 293)

3. Pearson Correlation Coefficient

The researcher used *Pearson Correlation Coefficient* in order to calculate the validity of the test by using *Split-Half Reliability*.

Pearson Correlation Coefficient Formula:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

R: Pearson Correlation Coefficient.

N: the Number of the study sample.

EX: the values of the variables. (Ibid: 183)

4. Spearman's correlation coefficient

The researcher used Spearman's correlation coefficient to correct the coefficient of correlation between the two parts of the test (marks of the even and odd items) after the researcher extracted it with the Pearson correlation coefficient.

$$r_s = \frac{2r}{r+1} \quad (\text{al-Imam et al., 1990:154})$$

Section Four

The Discussion of the Results

This section shows the study results in order to investigate the effect of *Learning Cycle Strategy* on achievement of First Year Students in Arabic Grammar at Al-Qasim Green University/ College of Environmental Science. Also, this section will identify the statistical significance between the means of the study groups in order to verify the study hypothesis, as follows:

First: Show the Results

1. In the experimental group, the researcher noticed that the highest mark obtained by the students of the group was (20) marks, while the lowest mark for the students of this group was (15) marks. In the control group, the highest mark was obtained by the students of this group (18) and the lowest mark is (14).

2. Balancing the average achievement of students of the two research groups, we note from the results shown in table (2) that the average mark of students of the experimental group reached (18.76) marks, and the average mark of the students of the control group reached to (16.96) marks. When using the T-test for two independent samples with a degree of freedom (58) at the indication level (0.05), the following appeared:

Between the experimental group and the control group, the calculated T value was (3), which was greater than the t-tabulated value (2.021), indicating that the students of the pilot group outperformed the students of the control group in the achievement.

Thus, the researcher rejects the null-hypothesis that it reads (there is no statistically significant difference between the two groups of students of the first stage of the college of Environmental Sciences, one of which teaches Arabic according to *the Learning Cycle Strategy* and the other taught it in the traditional method at the significance level (0.05) and accepts the alternative hypothesis that it reads (there is a difference of statistical significance at the level of (0.05) between the average

achievement of students of the experimental group who studied Arabic language according to *the Learning Cycle Strategy*, and the students of the control group who studied the Arabic in the traditional method for the benefit of the group experimental).

Second: Discussion the Results

Through the results presented, the superiority of the students of the experimental group who studied Arabic according to *the Learning Cycle Strategy* appeared to the students of the control group who studied the subject of Arabic in the traditional method, and the researcher believes that the reasons for this are due to:

1. The result of the present study is consistent with the results of the previous studies, most of which are confirmed in the adoption of *the Learning Cycle Strategy*. It is consistent with the literature of Arabic language teaching methods, which call for the use of modern means of teaching because it contributes to the consolidation of information in the minds of students, and increases their desire to seek knowledge, and their harmony in the academic environment suggests their ability to achieve the required scientific levels (al-Rahim, 1969: 31).
2. The superiority of the experimental group over the control group may be due to the effectiveness of the teaching method used in teaching Arabic subjects as it helps students to sequence ideas and present them in an orderly manner, in addition to raising their motivation and attention, as confirmed by recent trends in teaching (Fayed, 1975: 54).

Section Five

This section contains conclusions, recommendations and suggestions, which have been done by the researcher through the results of the study.

First: Conclusions

Through the results of this study, we can conclude the following: Using *the Learning Cycle Strategy* in teaching Arabic grammar is better than using the traditional method due to what have confirmed by this study, in which the students of the experimental group have went better than the control group.

Second: Recommendations

1. Using *the Learning Cycle Strategy* in teaching Arabic grammar.
2. Giving more attention of teaching methods and keep working on training teachers to use the teaching methods correctly, due to the great importance that helps to giving information to the students clearly and accurately because of the successes teaching mainly depended on the teacher him/herself and his/her skills and intelligence.

Third: Suggestions

In order to complete the requirements of the present study, the researcher suggested the following:

1. Conducting a similar study in order to investigate the effect of *the Learning Cycle Strategy* in the achievement of the students of the other colleges.

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