International Journal of Psychosocial Rehabilitation, Vol.24, Issue 01, 2020
ISSN: 1475-7192

Effect of Round Robin strategy in achievement of sciences of Second intermediate Grade Female students

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Abstract

This research aims to identify the effect of Round Robin strategy on the achievement of science subject of second intermediate grade students, to achieve this aim, Round Robin strategy was adopted. The research sample reached (56) students , (28) students at the experimental group that is studied according to Round Robin strategy and (28) students in the control group who studied according to usual method, after completing the experiment, the final achievement test was applied, (t-test) was used as statistical processing the data it was found that there was a statistical significant difference in the achievement test for the benefit of the experimental group in the science subject due to the application of the Round Robin strategy .

Keyword: *Achievement; Robin; Round; Sciences*

Chapter One

Introduction To Research

First / The Research Problem

Upon the educational postulates say that the success of education is closely related to the success of the method, as the correct method can treat many aspects of the curriculum shortcomings, the weak absorption of students, the difficulty of the academic subject and other education problems, so the urgent need to use new strategies and methods in teaching, including Round Robin strategy, with the aim of reducing the phenomenon of low academic achievement among students and their low levels of education in almost all subjects, including science, where this strategy is one of the active learning methods that encourage learners to actively participate in the educational unit through a verbal interaction between learners themselves in order to acquisition of a set of information, skills, and desirable directions in which this strategy is distinguished is the sitting pattern for learners that has a major impact on this strategy, and perhaps learning any knowledge or concept is considered deficient if this does not match with the development of the cognitive, skill and emotional aspects related to this concept so the researcher formulated the research problem in Answer the following question:

(What is the effect of the Round Robin strategy on achievement of science subject of second intermediate school students?)

Second / The Importance Of Research

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In light of the great technological and knowledge advances,,the teaching of science has become essential and interest has increased in how to teach students in a manner that focuses on meaning and quality instead of filling in the mind with a tremendous amount of knowledge that leads to an educational waste in the different stages of education, and has resulted from That is the emergence of some modern theories and strategies, each of which is the basis for teaching methods in the educational process, and among those strategies and modern methods of teaching that make the student the focus of the educational process are active learning strategies, as it is the context in which students are integrated into educational tasks, including the Round Robin strategy.

(Umbo Saeed and Al-Balushi: 2011) indicates that the nature of science education differs from the nature of teaching other subjects. Science is a subject that relies heavily on the involvement of students in scientific activities, where they practice a set of science processes such as observation, conclusion, prediction, interpretation, etc., and we find that there is a group of Things require that science teachers use various methods, especially advanced ones, somewhat (Umbo Saeed and Al Balushi, 2011: 77).

Hence , the importance of the current research comes from the following:

1. Use of the Round Robin strategy takes a path away from the traditional methods prevailing in schools in Iraq.

2. It is hoped that this study will contribute in improving the performance of science teachers seek to teach students to achieve the desired educational outcomes, and give a clear picture of the impact of the Round Robin strategy in teaching process.

3. The results of this study may be useful in improving the quality of teaching in educational subjects and be a starting point for further research in this or other areas.

Third / The Research Aim

The current research aims to investigating the effect of the Round Robin strategy on the achievement of science subject of second intermediate school students.

Fourth / Research Hypothesis

(There is no statistical significant difference at the level of significance (0.05) between the scores mean of second grade students who are studying sciences by Round Robin strategy and the scores mean of second grade students who study the same subject by (traditional method) in achievement.

Fifth / Research Limits:

The Current Research Is Limited in **:**

1. The human limit: A sample of second intermediate school students in Thi Qar Governorate / Nasiriyah for the academic year (2018-2019).

2. Time limit: the first semester (2018-2019)

3. Spatial limit: The intermediate, secondary, day and government schools for girls in Thi Qar Governorate / Nasiriyah (Al-Hurriyah intermediate for girls) in (2018-2019).

4. Cognitive limit: (the first unit) elements and compounds, the second unit (chemical reactions and solutions), from the book of science of second intermediate grade by the Iraqi Ministry of Education 4th edition, for the academic year (2018 - 2019).

Sixth: Defining The Terms

First: The Effect: Al-Saadoun (2012) defined it as:

• The amount of the intended and updated change in the dependent variable due to the effect of the independent variable on it (Al-Saadoun, 2012: 22).

The researcher defines her procedurally as:

• The amount expected to be obtained when using Round Robin strategy in achievement of science of second intermediate grade students of the two research groups (experimental and control), this is determined statistically.

Second: Round Robin strategy It was defined by Al-Shammari (2011) as:

• A strategy based on the teacher posing a single cross-cutting question on the group and each learner must participate in any addition that his colleague answered until the episode is completed and the role returns again to the first learner, provided that he does not re-answer his colleague and the aim of this strategy is to uncover alternative perceptions, share ideas and strengthen Listening skill (Al-Shammari, 2011: 106).

The researcher procedurally defines it as:

• A strategy that gives an opportunity for every learner to build his knowledge by himself after asking one or more questions to generate ideas that may be written or oral, and thus the learner reaches the concept himself using some of the processes, including observation, conclusion and application.

Fourth / Academic Achievement (Adili, 2008) defined it as

• All the information and skills acquired by learners as a great result of a specific subject or specific unit of study (Al-Adili, 2008: 52).

The researcher procedurally defines it procedurally as:

The amount of what the mean second-grade students obtain from a sample of research information and knowledge, measured in degrees, in the achievement test of the science subject prepared by the researcher for the purposes of this research, applied at the end of the research.

Chapter Two

Theoretical Background & Related Studies

Theoretical Background

First: Round Robin strategy

Round Robin strategy is an active learning strategy that is based on constructivist theory, also called the rounding strategy or (Round Robin) strategy, a strategy based on the teacher posing one question to each group, and each student must participate in any addition to the answer until the episode is complete and returns The role again, provided that he does not repeat an associate's answer, and this strategy aims to uncover alternative perceptions, participate in ideas, and strengthen the skill of listening (Umbo Saeedi & Al-Hosaniah, 2016: 548)

In active learning, the learner is positive and vital, as he is the focus of the entire educational process, as he participates in the work system and sets its rules inside or outside the classroom and participates in defining the educational aims of

what he will study and learn by his own pace (Saada et al., 2006: 72), the figure (1) explains the learner's role in active learning.

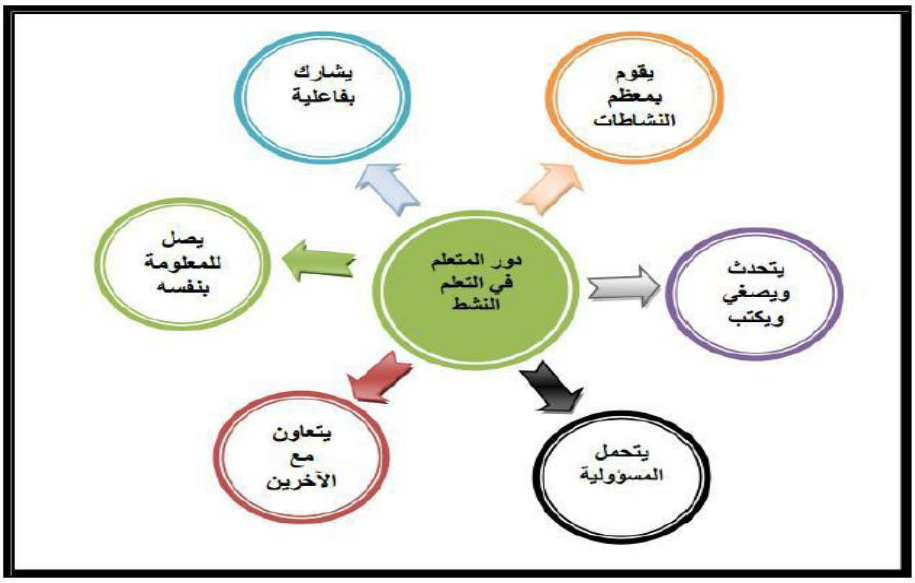

Figure (1) the learner's role in active learning (Prepared by Researcher)

The importance of Round Robin strategy

The most important characteristic of this strategy is that it encourages learners to participate effectively in the educational unit through a verbal interaction between the learners themselves in order to acquire a set of information, skills and desired trends in them, as well as it is characterized by the sitting style of learners that has a major impact on this strategy

It is mainly as a brainstorm for learners and has two types:

1. Written Round Robin

2. Oral Round Robin

Round Robin Strategy Steps

Round Robin strategy can be implemented according to the following steps:

Written Method Steps:

1. The teacher divides the learners into groups of four or five students.

2. He asks a question when his turn is heard in an audible voice.

3. The role can be restored to the first learner in order for the question to be completed in time.

4. Each learner must hear well the answers of his colleagues so that they are not repeated again.

5. The learner continues to write the answers until the specified time has elapsed.

6. The teacher discusses the groups' findings.

Oral Method Steps:

Follow the same steps of the writing method, but the answers are not written (Ombo Saeedi and Al-Hosaniah, 2016: 485).

Second / academic achievement

Achievement is an essential component of the educational process as it increases the learner's motivation when he thinks that his achievement will be evaluated in light of the standards of excellence compared to other learners. The achievement test measures an individual's achievement in certain subjects, mastery of skills in a field, and the extent of his benefit in education and experience in relation to others of his colleagues, sometimes he aims to diagnose deficiencies in these topics or basic skills (Hamdan, 2006: 38).

Related Studies

Previous studies and research constitute an important heritage and a rich source that the researcher must see before starting the research (Melhem, 2010: 98).

It is also considered a useful means in determining what is the problem of research and being aware of its dimensions and finding out what others have reached in this field, which helps in determining the problem and the size and type of work that the researcher will do.

Studies dealing with Round Robin strategy

Study of (Adigun, 2016): This study aims to know (the effect of using the teaching loop registration strategy on the academic achievement of high school students for chemistry in Osun State Nigeria), as the researcher approved semi-experimental design with pre and post testing, and the research sample represents (males The 160 high school and female students included two research tools: the achievement test for chemistry and an educational guide for teachers on the use

of the strategy. The data were analyzed using SPSS (ANCOVA). The results showed that the experimental group outperformed the control group in the achievement test.

Study of (Hammadi et al., 2017): This study aims to know (the effect of Round Robin strategy on the acquisition of geography material and its retention among intermediate school students), and to verify the validity of the two assumptions, the researcher chose the experimental design (with partial control), and the researcher intentionally chose (medium) Toxicity for girls), as for the sample, it was randomly chosen, as it reached (70) students. The researcher prepared an achievement test in the subjects studied by the researcher, consisting of (50) test items of the type (test from multiple), after analyzing results the results showed the superiority of the students of the experimental group who studied the principles of general geography using Round Robin strategy, over the students of the control group who studied the same material in the traditional way.

Aspects of benefit from past studies

• Choosing the appropriate experimental design for the current research.

• Using appropriate statistical means by which the data were processed.

Consider it a source of enrichment for the current study.

Chapter Three

Research methodology and procedures

First / Experimental Design:

The experimental design is a plan and a work program for how to implement the experiment with conditions and factors surrounding the studied phenomenon and its observations (Abdel-Rahman and Adnan, 2007: 487).

The researcher used experimental design with partial control of the two groups of the post test, as it is suitable for research purposes. The experimental design can be expressed in the following diagram:

Group	Equivalence	Independent Variable	Dependent Variable
Experimental	-Ages of students by months -Intelligence test of Raven -Scores of Sciences of past year -Past information	Round Robin Strategy	Achievement
Control		Usual Method	

Diagram (2) experimental research design

Second / Research Community And Sample:

1. Research Community:

The current research community includes all the female students of the second intermediate grade in the official governmental day and intermediate schools for girls within the boundaries of the Thi Qar / Nasiriyah Governorate Center for the academic year 2018-2019, in which the intermediate second grade classes are not less than two.

2- The research sample: It is part of the society on which the study is conducted, chosen by the researcher to conduct its study on it according to special rules in order for the community to represent a correct representation (Al-Azzawi, 2008: 161), since studying the original research community requires time, effort and material costs, so choosing the researcher is

a sample Similar to her research community, she achieves research aims and helps accomplish her mission (Melhem, 125: 2000).

After selecting (Al-Hurriyah intermediate school for Girls), It was found including four classes of second intermediate grade, the researcher randomly chose two (C, D) classes by drawing method to be the two research groups, (C) represents the experimental group of (30) students will be taught (by the strategy of Round Robin), and the Class (D) represented the control group of (31) female students who will study in the traditional method, after excluded the female students who have previous experience in the subjects taught during the period of the experiment that may be It has an impact on the results of the experiment, (2) female students from class (C) and (3) were excluded from class (D), so that the number of female students in the experimental group was (28) female students, and the number of female control group students was (28) female students, as in the table (1).

Table (1) the research sample

Class	Group	Before excluding	Number of excluded Students	Final
C	Experimental	30	2	28
D	Control	31	3	28
Total		61	5	56

Third: Equivalence of the two research groups: The researcher was keen on statistical equivalence of the research groups in some variables related to the research despite the fact that all of the research sample from one school and from a social medium is somewhat similar, and their distribution to the classes was random, but the researcher was keen to equivalence of the two groups that from the necessities of conducting experimental research (Al-Zobaie and Al-Ghannam, 1981: 91), before the researcher began applying the experiment, she was keen to statistically equal the two research groups in some of the variables that may affect the validity of the experiment and the accuracy of its results. Table (2) shows these variables.

1. Female student's age:

The researcher calculated the female student's ages in months until the beginning of the experiment, based on the information obtained from the school records, and by using t-test for two independent samples, no statistical significant differences were found at the level of significance (0.05) as in Table (2)

Table (2) The mean and the standard deviation of the ages of female students in the two research groups

Group	N	Mean	Variation	t.test		significance (0.05)
Experimental				Calculated	Tabled	
Control	28	186.7	27.98	1.82	2.02	Non-significant
	28	184.9	26.80			

. Intelligence test: It is an objective and standardized measure for measuring the mental abilities of the individual. The main aim of the intelligence test is to distinguish between individuals or groups of individuals with mental abilities (Al-Anani, 2008: 67). The test was applied to the members of the two research groups (experimental and control), by using (t-test) for two independent samples, there were no statistical significant differences at the level of significance (0.05) as in table (3).

Table (3) mean, standard deviation, calculated and tabulated t value for the experimental and control groups' scores in the IQ variable.

Group	N	Mean	Variation	t.test		significance (0.05)
Experimental	28	30.73	58.29	Calculated	Tabled	Non-significant
Control	28	29.96	116.94	0.43	2.02	

Academic achievement in the science subject for the first intermediate grade: The grades of students of the two research groups in the science subject for the first intermediate grade were obtained from school records, and by using t-test for two independent samples, no statistically significant differences were found at the level of significance (0.05) as in table (4).

Table (4) mean, standard deviation, t , computed, and tabulated value for the scores of the two research groups for the achievement variable in science

Group	N	Mean	Variation	t.test		significance (0.05)
Experimental	28	60.06	420.28	Calculated	Tabled	Non-significant
Control	28	58.91	289.08	0.32	2.02	

4. Test of the chemistry previous information: The researcher prepared a test consisting of (20) multiple choice items with four alternatives for the purpose of knowing what the members of the research sample possess from previous information. For the purpose of ascertaining the correctness of formulating items and their suitability for the level of second-grade students' mean, and using the t-test for two independent samples, no statistical significant differences were found at the level of significance (0.05) as in table (5).

Table (5) mean, standard deviation, t , computed, and tabled value for the scores of two research groups for the chemistry previous information

Group	N	Mean	Variation	t.test		significance (0.05)
Experimental	28	9.80	3.92	Calculated	Tabled	Non-significant
Control	28	9.76	4.04	0.10	**2.02**	

Four / Non-Experimental variables

Despite the development of educational and psychological sciences, there are still difficulties facing researchers in isolating and controlling the variables of the phenomena they study, because behavioral phenomena are intangible and complex phenomena in which factors overlap and intertwine (Hammam, 1984: 203).

Fifth / The Research Requirements

The current research requirements include the following:

1. **Determination of the scientific subject**: The researcher determined the scientific subject that she is teaching to the students of the two research groups during the period of the experiment for the first semester (first semester) of the academic year (2018-2019) AD, which are the first semesters / chapter: the first unit: (elements and vehicles) , Chapter Two: The Second Unit: (Chemical Reactions and Solutions), from the textbook for science subject to be taught for the second intermediate grade.

2. **Formulation of behavioral purposes:** Behavioral purposes were defined as (120) behavioral purpose according to Bloom's classification (remembering, understanding , application), and behavioral purposes were presented to a group of experts and arbitrators in the field of education and methods of teaching science and psychology, to indicate their views on their safety And the extent of their suitability to their cognitive levels, and their coverage of the content of the study material, and the objectives are considered valid if they obtain an agreement rate (80%) of the opinions of the arbitrators and the specialists.

3. Preparing teaching plans: Teaching plans mean prior perceptions of the educational situations and procedures undertaken by the teacher and his students to achieve certain educational goals, and when preparing educational plans is one of the successful teaching requirements, the researcher prepared (22) teaching plans for each of the two research groups, and the researcher presented Examples of plans on a group of arbitrators with specialists in the field of methods of teaching sciences, measurement and evaluation, and based on the arbitrators 'observations and proposals, they made the necessary adjustments to them and are ready for implementation.

Sixth: The Research Tool /

• Achievement Test: The Achievement Test is one of the important means used in evaluating student achievement, because of its ease of preparation, correction, and application (Imam et al., 1990: 59).

After the researcher took the opinions of a number of science teachers and teachers who teach the subject and the opinions of specialists in the methods of teaching science after examining the behavioral purposes of the content of the three chapters of the science subject book for the second intermediate grade (the second book), it was agreed to define the test items with (40) multiple-choice test item with four alternatives for each test item.

• **Specifications table** (test map): The specifications table has been prepared for the content of the three chapters of the book and according to the three levels (remembering, understanding , application) the percentages of the subject content were determined in light of the lessons and according to the percentages of the goal levels depending on the number of behavioral objectives and a table (6) He explains it

Table (6): Test map for the achievement test

	Chapter	Number of lessons	relative importance	Percentage of behavioral objectives			number of test items			Total
1	Chemical elements and bonding			Remembering	understanding	applying	Remembering	understanding	applying	
2	Chemical compounds									
3	Chemical formulas and reactions									
4	Solutions									
Total										

• **Formulation of test items:** Formulation of test items is one of the basics of building the achievement test. After the teacher finishes preparing the schedule of specifications, he must choose the questions included in the test and must be formulated in easy and clear terms and indicate the intent of the question directly without the need to inquire about it (Al-Taiti, 2008: 248), the researcher defined the achievement test items in this research with (40) multiple choice type and four alternatives. This type of tests was chosen because it is one of the best types of tests and the most honest and stable, in addition to covering the book content and ease of correction.

• **Validity of the test:** Validity is one of the most important psychometric properties compared to other characteristics of the test, because of the correlation of validity with the objectives expected from the measuring instrument to achieve them, as well as its connection with the type of decision that will be taken accordingly and its importance. Yes, and do not measure anything else as a substitute for it. (Al-Nabhan, 2004: 27) and it is determined (Al-Abadi: 2006) that the test be honest, it must measure what was prepared in order to actually measure it, that is, it measures the goal that was prepared to measure it and does not measure anything else different from it (Al-Abadi, 2006: 12), and for the sake of Verifying the Validity of the Test The researcher used the following types of validity:

A. Face validity:

The general form of the test or its external appearance is represented in terms of its vocabulary, objectivity and clarity of its instructions (Al-Kubaisi, 2007: 195). All items are considered valid, and Ebel (1972) indicates that the best way to ensure the apparent validity of the test is to present it to a number of specialists to estimate the extent to which the test items achieve the attribute, characteristic or attribute to be measured by Ebel, 1972: 555).

B- Validity of the content:

The test truthfully means that the content of the test represents the content of the course, which represents educational goals (Hariri, 2012: 141), and the achievement of the achievement test can be verified by preparing a table of specifications that takes into consideration the relative importance of each subject and pay attention of the different levels of learning outcomes, and this gives a picture Sincere to build test items that measure student achievement through attention to all topics and all levels of goals (Al-Obaisi, 2010: 210)

Exploratory test application

• The exploratory application of the achievement test

The researcher applied the test to an exploratory sample consisting of (30) students (without the research sample) which is (medium gardens for girls), after confirming that they have completed the scientific subject and informing them of the date of the test several days before its application, it was noticed that the answer instructions and test items were clear from During the lack of female inquiries about how to answer and the average time for answering the female students was (40) minutes by adding the times the first five students and the last five female students took in the answer and dividing the sum of their number after recording the response time for each student on her answer sheet and by adopting the following formula:

$$\text{Average time} = \frac{\text{Time required for first and last five students}}{\text{Total number of students}}$$

Average time = 400/10 = (40) minutes

Statistical Analysis Of The Test Items

The process of statistically analyzing the test means a careful test of the items and testing the responses by the individuals who answered the test items, as this step is one of the basic steps in building standards and one of the important conditions that must be met in the test items is its ability to distinguish between individuals in The measured trait, in addition to the availability of conditions for correlation of the total item score of the test (Allam, 2000: 267), as well as in the ability of the items to distinguish between students with high ability and students with weak ability and to verify the difficulty and ease of the item (Abu Zaina, 1992: 45 After the researcher confirmed the clarity of the test items and his instructions, she applied it to a sample consisting of (100) female students (medium Nurain) of the Directorate of Education in Thi Qar / Nasiriyah, and after correcting the answers, the researcher arranged the answers upward for the purpose of conducting the statistical analysis and then took the highest (27%) of female students 'answers to represent the upper group and the lowest (27%) to represent the lower group that the numbers of members of each group reached (50) students, and after the answers of the upper and lower groups were statistically analyzed, any Serious psychometric properties of the test, as follows: -

Difficulty coefficient of test items

Discrimination

The efficacy of wrong alternatives

Coefficient of difficulty of test vertebrae

The difficulty factor means the ratio of the number of individuals who answered a correct answer to the item to those who answered the wrong answer, and Bloom determined a difficulty factor for the item confined between (20% to 80%) as a criterion for accepting the items (Michael, 1997: 74), after calculating the difficulty factor for the objective items The researcher found that it ranges between (0.49 to 0.66) and this indicates that the items are scientifically acceptable with regard to the difficulty.

Discrimination

It is an important characteristic because it indicates the ability of the scale (test) to detect individual differences between individuals, it means the ability of the item to distinguish between the upper and lower groups, and by knowing the individual differences between students who have the correct answer and who do not have the correct answer for each Net items of the test (Al-Dulaimi and others, 2005, 89), and that the items are considered good and able to distinguish between members of the upper and lower groups if they obtained a discriminatory power of (20% or more), (Al-Zahir and others, 1999: 67), and on this Grammar The discriminatory power for each of the test items was calculated and it was found that it ranges between (0.38 to 0.78), and is thus considered valid and good.

Effectiveness of the wrong alternatives:

Also called dispersants or camouflages, which are other incorrect options for the multiple choice question, and also indicates the wrong alternative's ability to attract the attention of the largest possible number of students in the lower group compared to students in the higher group (Samara, 1989: 108), and after applying an equation The effectiveness of the alternatives for all alternatives to the test items and calculating the effectiveness of each alternative for each item showed that the alternatives attracted a greater number of the lower group compared to the higher group, and based on that the researcher decided to keep the alternatives and not change them.

Reliability of the Test:

The test, which is of a high degree of consistency, mastery, accuracy, objectivity and steadiness, in what was set for its measurement, this test is considered constant (Hassanein, 1979: 89), so it is intended to be consistency in the results presented by the test, and the test is considered reliable if we obtain the same results when Re-applying it to the same

sample individuals and in the same circumstances (Abdel-Majid Welfta, 2013: 149), and the researcher adopted the formula (Kuder Richardson-20) to calculate the reliability of the objective items of the achievement test and reached (80%), which is a good indicator to indicate the reliability of the test.

Seventh: Procedures for applying the experiment:

A- Applying the test to the research sample:

The experiment started on Tuesday 22/Oct 2018 two lessons per week and ended on Sunday 22/ Dec /2018. The achievement test was applied on the two research groups on Thursday 26/Dec/2018.

Eighth: Statistical methods:

The researcher used the following statistical methods: -

1. t-test Equation (t.test) for two independent samples equal in number (Al-Kubaisi, 113: 2010)

2. The Equation of the Difficulty Factor (Al-Hiti al-Sufi 2002: 66).

3. Item Discrimination Equation (Odeh, 1998: 288).

4. Equation of efficacy of wrong alternatives (Al-Nabhan, 2004: 199)

5. Kuder-Richardson - 20 (Al-Absi, 2010: 213)

Chapter Four

Presentation And Interpretation Of Results

First: View The Results:

In order to verify the hypothesis, which states that "there is no statistical significant difference at the level of significance (0.05) between the scores mean of female students of the experimental group who studied by Round Robin strategy and the scores mean of the students of the control group who studied in the usual method in the achievement of science" "the researcher used t-test for two independent samples to show the differences between the scores mean of the two groups in achievement test, as shown in table (7).

Table (7) The results of the t-Test for two independent samples of the two research groups in the science test achievement

Group	N	Mean	Variation	tabled	t.test	Significance Level (0.05)
Experimental	28	40.35	50.90	2.02	5.94	Significant
Control	28	33.93	14.73			

Through the data of table (7), the value of the mean of the experimental group in the achievement test was (40.35) and a variation of (50.90), while the mean of the control group was (33.93) and a variation of (14.73), and it was The calculated T value (5.94) , when compared to the tabled t value of (2.02) at the level of significance (0.05) and degree of freedom (54), it was found that were statistical significant differences between the two groups in favor of the experimental group, and this means rejecting the first null hypothesis and accepting the alternative hypothesis, which states that "there is a statistical significant difference at the level of significance (0.05) between the scores mean of female students of the

experimental group who studied the Round Robin strategy and the scores mean of female control group students who studied in the usual way in the acquisition of the subject of science" This means that the students of the experimental group who studied the material using the Round Robin strategy over the students of the control group who studied the same subject according to the usual method in the achievement test.

Determine the effect size:

The identification of the effect of independent variables in the dependent variables within empirical research is not sufficient, but it is preferable to determine the strength of this effect, especially since there is a statistical method that determines this value and is called the effect size, and we mean the size of the effect "the difference between the averages of each of the two groups in a variable given divided by the standard deviation of the degrees of the control group in this variable. "The effect size values help us determine the relative effect of a specific educational treatment in a related set of outcomes measured by a common balance (Allam, 1985: 155), after applying the special formula it was found that the effect of the group Experimental studies, which were studied by strategy of Round Robin (achievement test) (0.156) as shown in table (8)

Table (8) Standard effect size

Effect Size	**Level**	**Tool Used**
0.01	Low	**η**
0.06	Middle	
0.14	High	

(Al Yaqoubi, 84: 2010)

Table (9) The effect size of the achievement variable

Dependent variable	Effect Size	Level
Achievement	0.156	High

Second: Interpretation Of The Results:

The results obtained show that the use of Round Robin strategy has a positive effect in increasing achievement in the science subject, due to the following reasons:

1. Teaching with a Round Robin strategy provides students with the opportunity to build their knowledge through positive interaction with the subject teacher, as well as the interaction between students themselves, and communication between them using language and dialogue, the use of expressions, and exchange of views, which may arouse the interest of students and advance their level of knowledge to the maximum What their capabilities, capabilities, and capabilities allow.

2. Learning within small groups gives the students self-confidence, and cooperation among them in order to discover the correct answer, and the exchange of information between female students, as teaching with this strategy allows the use of cooperative learning, language and dialogue.

3. Teaching with a Round Robin strategy takes into account individual differences with the presence of reinforcement and the absence of frustration and all of these factors are in line with the modern trends of teaching.

4. The possibility of observing the interaction that prevailed in educational situations, as the strategy of Round Robin contributes to helping female students to participate positively, which strengthened self-confidence and the ability to infer, and the ability to use concept maps in the cooperative building of experiences related to the concepts of science becomes weak.

Third: Conclusions:

In light of the current research results, the researcher concluded the following:

1. Round Robin strategy transforms the lesson from immobility to flexibility and vitality, where ideas are discussed and exchanged within the hall.

2. Round Robin strategy gives students a positive and effective role, and this is consistent with the goals of scientific education and modern philosophy in science education.

Fourth: Recommendations:

In light of the results of this research, the researcher recommends the following:

1. The necessity of using teaching methods based on the learner's self-activity, because of its positive results in acquiring scientific concepts in science subjects "chemistry, physics, biology.

2. Including modern strategies in teaching, including the strategy of Round Robin in the vocabulary of curriculum subject courses and teaching methods in colleges of education and basic education colleges

3. Developing in-service teachers through courses for male and female teachers on Round Robin strategies in order to employ them in classroom teaching.

Fifth: The proposals:

Complementing the current research, the researcher suggests the following:

1. Carrying out other studies that use Round Robin strategy on different levels of study (elementary, intermediate, and university).

2. Conducting a study to compare between Round Robin strategy and other teaching strategies with same or other variables.

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