

The Effect Of Using The Cooperative Learning Strategy And Problem Solving On The Achievement Of Fifth Grade Students In Social And National Studies In Directorate Of Education In Busira District Schools

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Abstract- The study aimed to investigate the effect of using the cooperative learning strategy and problem solving on the achievement of fifth grade students in social and national studies directorate of education in Busira district schools. to conduct the study, The semi-experimental approach was used and it was applied to two sections in Al-Qadisiyah Basic School for boys in the Directorate of Education in the Busira District. The study sample, which was chosen by the purposive method, consisted of (38) students. The sample was divided into two groups: an experimental group taught by using cooperative learning, and a control group: taught in the traditional method. The number of students in the control group was (18) and the number of students in the experimental group was (20), and an achievement test was prepared in the prescribed unit consisting of (20) multiple choice items. The validity and reliability of the tool were verified, and the appropriate statistical methods were used for this. The study concluded that there were statistically significant differences between the performance means of the two study groups in favor of the experimental group that was taught using cooperative learning. The study recommended the necessity of urging social and national studies teachers to adopt using cooperative learning and solving problems in teaching social and national studies for the fifth grade since they raise the achievement and academic level of students alike ; they also boost students' morale and increases their self-confidence along with other methods of education that increase their achievement.

Index Terms- cooperative learning, problem solving, achievement, basic fifth grade.

I. INTRODUCTION

In recent years , educators have taken an increasing interest in activities and events that promote the student as the centre of the learning and teaching process. One of the most prominent of these activities is the use of the cooperative learning method, which means arranging students in groups and assigning them to work or involve in an activity together , to reduce the emergence of many problems in the educational arena as the students' lack of mastery over science processes and skills, and the accompanying

poor achievement due to the traditional teaching methods in different subjects has led to serious thinking to overcome these problems and mitigate their severity with a view to achieve an actual development in the learning and teaching process through teaching strategies that take into account students' individual differences as with the cooperative learning strategy (Al-Sawamleh, 2019).

If the interest in cooperative learning is a feature that distinguished the developed countries, it is more significant for the developing countries to raise their scientific and technological level towards better conditions of life, and Jordan is one of the developing countries that seek to improve the conditions of life and create a society capable of communicating with other societies of the world culturally, scientifically, technologically and economically . In response to this, Jordan has witnessed in recent years many positive developments in the field of educational reform that dealt with the basic components of the educational process. This response is evident in the recommendations of the First Educational Development Conference (1988) and the Second Educational Development Conference (1999), which focused on The use of modern teaching methods, which focuses on the active role of the student on the use of modern teaching methods which focuses on the active role of the student on the use of modern teaching methods, which focuses on the active role of the student in particular by using the cooperative learning strategy, and moving away from the traditional methods that social and national education teachers tend to use in our schools (Faraj, 2011).

Hence, this study aimed at knowing the effect of using the cooperative learning strategy and problem solving on the achievement of fifth grade students in social and national studies in Busira schools .

1.1 Study Problem

The problem of the study was that there was an urgent need to improve the methods used in teaching. Despite teachers' enrolment in various qualification courses in the field of education and teaching methods, some of them that are still satisfied with practicing the traditional methods that lead to students' boredom and complaint, where the focus is on memorization. And indoctrination, which leads to the forgetting of information and its gradually leaking out of the student's knowledge structure after a

period of time. Thus, the student is unable to transfer learning experiences to practical life situations, which makes this method fall far short of helping students to solve whatever life problems they may encounter. This has negative reflection on the students' academic level, so choosing effective teaching strategies based on studies and scientific research such as cooperative learning may enhance students' learning and achievement. The problem of the study is the need to investigate the impact of using the cooperative learning strategy and problem solving on the achievement of fifth grade students in social and national studies in the schools of Busira directorate of education.

1.2 Study Questions

1. Are there differences in the achievement of fifth grade students in the Busira District in social and national studies attributed to the teaching method (cooperative learning and problem solving, and the traditional method).

1.3 Study Significance

1. The results of the study may contribute to benefit those in charge in the Ministry of Education, especially the Training Department, by organizing their programs according to the principles of cooperative learning and problem solving, so that they train teachers on how to apply cooperative learning and problem solving inside the classroom.

2. The results of the study may contribute to emphasize the importance of cooperative learning on raising academic achievement, long- term retention, using more scientific thinking processes, increasing internal motivation, increasing psychological and positive equilibrium, and acquiring more cooperative skills.

1.4 Objectives of the Study

The study aimed to identify the effect of using the cooperative learning strategy and problem solving on the achievement of fifth grade students social and national studies in the schools of the Busira district.

1.5 Procedural definitions

Cooperative learning: A method of teaching and learning in which students are divided into small groups, each of which includes different levels of achievement, and the students of one group cooperate for a common goal or goals (Fakhri, 2006). The study defines procedurally the steps and procedures that the teacher takes in the teaching situation to achieve the desired goal.

Problem solving ability: a cognitive process through which the individual tries to discover effective strategies and methods to deal with the problems he faces in his daily life (Cassidy, & Long 1996). The study defines it procedurally as a process in which third-grade students use their previous information and acquired skills to deal with an unusual situation facing them, and they must reorganize what they learned previously, and apply it to the new situation they face, and it is measured by the score that the student obtains in the problem-solving scale that will be used in this study.

Achievement: the extent to which students assimilate scientific concepts and information gained through learning social and national studies in fifth grade.

Traditional method: It is the method of teaching through which the teacher presents the educational material by any means

he wants (discussion, lecture, practical presentations,...) except for the use of a program similar to the current program.

Fifth grade basic: It is one of the basic educational stages in which students are 10 years old, and it is one of the divisions of study periods for the Jordanian Ministry of Education.

II. THEORETICAL FRAMEWORK

Cooperative Learning: In scholar aspect, cooperative learning is not a new concept in educational, but rather it has its long historical roots that extend over hundreds of years. Its historical and beginning was philosophical and it has been discussed by many philosophers of education, led by Plato, Rousseau and John Dewey (Al-Shakhibi, 1991).

The effect of cooperative learning on learning: It is believed that cooperative learning has a positive impact on the educational process, as it mitigates students' introversion and isolation " and increases students' motivation to learn. Also, the use of cooperative learning addresses the problem of overcrowded classrooms (Johnson and Johnson, 1998: 36). This, in turn, is consistent with the theory of Individualization of education and provides the learner with a greater opportunity to learn.

The basic elements of cooperative learning: In order for learning to be cooperative, it must have a number of elements. Slavin identified two elements: (Kojk, 1997: 318).

1. Positive interdependence between group members, and this requires allocating a reward for the style of work among group members, and for their cooperation with each other in learning, but the reward is not for individual work within the group.

2. Individual accountability, in the sense that the assessment of the final group work is based on the quality and mastery of the performance of each individual for the assigned work

Constructing the main elements of cooperative learning among students:

The construction steps the basic elements of cooperative learning for students, as explained by (Johnson, Johnson and Holbeck, 1995: 8 - 22), can be summarized as follows:

First: Positive Interdependence: Cooperation group strategy can be used by constructing positive interdependence, in which group members work together to accomplish something beyond individual success.

There are steps to construct positive interdependence

1. Assigning a clear and measurable task to the group, since members must know what they are supposed to do.

2. Positive interdependence constructing to achieve the goal calls for members' awareness that they cannot succeed unless all members of their group succeed.

Second: individual responsibility: The purpose of cooperative learning groups is to make each member a stronger individual. Individual responsibility is the key to ensure that all members are empowered through cooperative learning, and after participating in a cooperative lesson, all members should be more prepared to accomplish similar tasks by themselves.

Common ways to construct individual responsibility include:

1. Reducing the number of group members. The fewer group members, the greater the individual responsibility.
2. Giving an individual test to each student.
3. Giving random oral tests.

Third: face to face interaction: The system of using cooperative groups involves making sure that group members meet face to face to accomplish tasks and increase each other's success.

There are steps to encourage face-to-face interaction between group members:

1. Students sit closely in the same group.
2. A schedule for the group meeting.

Fourth: social skills: If social skills are not learned, the required task cannot be accomplished, and if the group members are not adept at using these skills, their performance will be below the standards. On the other hand, the more social skills the members have, the better the quality and quantity of their learning. In order to coordinate the group's efforts to achieve common goals, students are required to perform the following skills:

1. Trust each other.
2. Communicate with each other properly.

Academic achievement: "Eysenck" defines academic achievement as the successful achievement of a specific goal that requires a special effort, and the degree of success achieved in a particular duty, as it is the result of a mental and physical activity that is determined according to individual or objective demands or both (Al-Ayouni, 2003).

The importance of academic achievement: Academic achievement is: the knowledge and skills acquired in the educational material, and it is sometimes estimated by the grades of the class exams. It also refers to the annual average of the community marks due to its importance in the lives of individuals in deciding their fate and career future. Academic achievement is a cognitive achievement measured by the extent to which the teaching objectives of a subject have been achieved or by a course that the learner has previously studied (Arifij and Musleh, 1987). On the other hand, academic achievement is one of the most important variables that many studies have tried to examine its association degree with a large number of factors. Thus, academic achievement is the ultimate outcome of a group of processes and procedures implemented to achieve those aims as far as possible. Academic achievement is also one of the most important outcome on which educational institutions are based (Al-Nassar, 2006).

.21 Previous Studies

This study dealt with some Arab and foreign studies related to the subject in order to benefit from them in constructing the study tool and in interpreting and discussing the results. After referring to the educational literature and previous studies, it was noted that there was no direct relationship with the subject of the current study, due to the scarcity of studies relevant to the subject of the current study.

(Radwan, 2018) The study aimed to reveal the effect of using brainstorming and cooperative learning strategies in developing academic achievement among fifth grade female students in Jordan. To achieve the study's goal, the researcher prepared a test to measure academic achievement in social studies, and used the quasi-experimental approach, random group design, where the first experimental group consisting of (25) female students studied according to the brainstorming strategy, the second experimental group consisting of (25) female students studied according to the cooperative learning strategy. The control group consisting of (25) female students was taught by the traditional method, and the test was applied on the three groups before and after teaching. The results of (t) analysis showed that there were significant differences at ($\alpha = 0.05$) between the groups due to the use of brainstorming and cooperative learning strategies in developing academic achievement in the social studies in favor of the two experimental groups, which indicates the effectiveness of employing brainstorming and cooperative learning strategies in developing academic achievement in social studies, the study recommended implementation the strategies of brainstorming and cooperative learning in teaching social studies, and conducting other similar studies in different educational stages.

(Al-Qadi, 2011) study aimed to identify the impact of the cooperative learning method on the achievement of fifth grade students in the Salfit Governorate in Palestine, and also aimed to identify the importance of cooperative learning by identifying the role that the practice of cooperative learning strategies can contribute to develop learning performance and raise the students' achievement level through an empirical study showing the degree of statistically significant differences between the experimental and control groups in the Arabic language textbook for the fifth grade. The study population consisted of all fifth grade students in the Directorate of Education in Salfit Governorate, north of Palestine. The number of them in the Directorate of Education in Salfit Governorate was (1657) male and female students for the academic year 2009-2010. It also included all fifth grade teachers in Salfit Governorate who were (285). The sample of the study was selected in a stratified random method. The sample consisted of all fifth grade students at Kifl Haris Basic School for boys, which included (48) students. The researcher also used the directed interview where he asked a set of questions to a number of teachers and supervisors in the Arabic language, in order to recognize their perspective on cooperative learning and its application in their schools. What are the obstacles they face when applying cooperative learning? After conducting the statistical treatments, the study showed the following results: There were statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the achievement of students in the experimental group and the control group due to the use of the cooperative education method. The differences were in favor of the experimental group, as it was clear from the results that the average achievement of students who represented the experimental group was higher compared to the control group on the test, where the average achievement reached (73), while the average achievement of students in the control group on the test was (58.5), which confirms the effectiveness of cooperative learning and its impact on student achievement and their performance.

(Al-Qahtani, 2010) study aimed to investigate the effectiveness of cooperative learning in the academic and social

achievement of students and the development of their attitudes in social studies at the intermediate stage. The study relied on a set of tools, the first is a questionnaire related to the social studies teacher to study the status of cooperative learning in terms of teachers' knowledge of it, its importance and its use in teaching. The second is a questionnaire related to The students (experimental group) to study their attitudes towards cooperative learning, and the third is a test to measure the students' academic achievement for the two experimental and control groups after conducting the study experiment on the first group. The study was conducted on the experimental group in the second semester. By following the scientific foundations and applied procedures for cooperative learning and problem solving and after studying the statistical differences between the two groups, the results were as follows: There was a higher importance for cooperative learning among social studies teachers ,but it is implemented less due to some difficulties. Students' positive attitude towards cooperative learning, which had a clear impact on their participation and interaction in the classroom. the presence of statistically significant differences that confirm the effect of using cooperative learning on student achievement and indicate the superiority of students of the experimental group compared to the control group, and the effectiveness of cooperative learning compared to the traditional methods. Taking into account the recommendations of the study in terms of carrying out similar studies on different educational stages, using some other strategies that are consistent with cooperative learning and have been proven to be feasible by studies and research .

III. STUDY METHODOLOGY

In light of the main objective of the study, which was to identify the effect of using the cooperative learning strategy and problem solving on the achievement of fifth grade students in social and national education in Busira district schools, the semi-experimental approach was followed because it was considered the appropriate approach to the nature and objectives of the study. Therefore, according to this design, the researcher chose two groups, (experimental, and control group).

3.1 Study Population

The study population consisted of the fifth grade students in the schools of the Directorate of Education in the Busira District, (643) students distributed among (26) sections and (14) schools, for the first semester of the academic year 2019/2020, according to the statistics of the Directorate of Education In the Busira district.

3.2 The Study Sample

Two sections were chosen from Al-Qadisiyah Basic School for Boys , a government schools in Busira District Directorate of Education., one of them is experimental and the other is control. The sample was divided into two groups: an experimental group, which studied using cooperative learning, and a control group taught by the traditional method. the number of students in the control group was (18) students, and (20) in the experimental group. The sample members were also selected from the Busira district, in a society characterized by rapprochement in the cultural, economic and social levels, to ensure equivalence and

homogeneity among the sample members. The researcher was keen that the students of the two groups; Experimental and control, study the same content. The application and explanation of concepts began in the first semester of the academic year 2019-2020.

3.3 Study Tools

To answer the study questions, the researcher prepared and construct an achievement test in the unit (citizenship rights and duties) from the social and national studies curriculum for the fifth grade, which consisted of (20) multiple choice items, where the student chooses a correct answer out of four choices.

The validity of the achievement test: the test was distributed in its initial form to a group of experienced and competent arbitrators in Jordanian universities as well as supervisors of social and national studies in the Jordanian Ministry of Education. Their notices recommended modification of the forms of some items. The arbitrators were (12).

The educational material: The educational material consisted of lessons scheduled in the first semester in the content of social and national studies, which is taught in Jordan for the year 2019/2020 for the fifth grade in the social and national studies book in the "citizenship rights and duties" unit Difficulty and discrimination coefficients for the items.

Table (1): Discrimination coefficients for the achievement test items.

Item Number	Discrimination Coefficient	Item Number	Discrimination Coefficient
1	0.87	11	0.85
2	0.67	12	0.79
3	0.89	13	0.81
4	0.73	14	0.68
5	0.82	15	0.83
6	0.68	16	0.70
7	0.98	17	0.91
8	0.83	18	0.81
9	0.77	19	0.83
10	0.72	20	0.78

Statistically significant at the level of significance ($\alpha \leq 0.05$).

Table (2): Difficulty coefficients for the achievement test items.

Item Number	Difficulty Coefficient	Coefficient of Ease	Item Number	Difficulty Coefficient	Coefficient of Ease
1	0.55	0.45	11	0.44	0.56
2	0.60	0.40	12	0.50	0.50

3	0.72	0.28	13	0.70	0.30
4	0.40	0.60	14	0.68	0.32
5	0.39	0.61	15	0.68	0.32
6	0.64	0.36	16	0.80	0.20
7	0.66	0.34	17	0.55	0.45
8	0.42	0.58	18	0.30	0.70
9	0.56	0.44	19	0.47	0.53
10	0.46	0.54	20	0.65	0.35

Statistically significant at the level of significance ($\alpha \leq 0.05$).

The reliability of the achievement test:

To verify the reliability of the study tool, the test was applied to the pilot sample, which consisted of (23) students from the study population and from outside its sample, then the test was re-applied after a three-week interval from the date of the first application . After correcting and monitoring the students' answers, the reliability coefficient was extracted according to Couder Richardson equation (KR-20) where it reached (0.91) and such values are considered acceptable for the purposes of the current study.

3.4 Study Procedures

1. The achievement test was constructed to verify validity and reliability.
2. The control and experimental groups were set.
3. The equivalence of the two study groups: (control and experimental group), was verified before teaching the two study groups, and the arithmetic means and standard deviations of the scores of the two groups were calculated as table (3) shows:

Table (3): Arithmetic means, standard deviations, and (t-test) results for independent samples to test the differences between the control and experimental groups.

Group	Arithmetic Mean	Standard Deviation	Standard Error	(t) value	Level of Significance
Control	14.493	5.234	0.70	0.985	0.536
Experimental	15.351	4.214			

Table (3) shows that there were no statistically significant differences at the level of significance ($\alpha \leq 0.05$), and this result indicated that there was equivalence between the control and experimental.

3.5 Study Variables

The study includes the following variables:

a. **Independent variables:** Teaching method (cooperative learning and problem solving, the traditional method).

b. **The dependent variable:** It is represented by the achievement test

3.6 Results Presentation

To answer the study question: were there statistically significant differences at the level of significance ($\alpha = (0.05)$) between control and experimental groups in the post-application of the achievement test?

Table (4): Arithmetic means, standard deviations, and t-test results for the achievement scores for fifth grade students, the experimental and control group according to the teaching method.

Teaching method	Group	Arithmetic mean	Standard deviation	(t) value	Significance level	Size effect eta squared (η^2)
Traditional method	Control	38.03	12.49	0.94	0.436	0.08
	Experimental	41.11	12.53			
Cooperative learning	Control	42.56	13.59	7.587	0.000	0.42
	Experimental	60.68	13.53			
Problem solving	Control	60.98	13.74	8.954	0.000	0.50
	Experimental	65.99	13.48			

Statistically significant at the level of significance ($\alpha \leq 0.05$)

It is evident from Table (4) that there was a statistically significant difference between the arithmetic mean of the fifth grade students' scores in achievement , (experimental and control group) attributed to the method of teaching.

where it was found that the cooperative learning method had an effect on the achievement of the fifth grade students, and the value was ($t =7.587$) and the statistical significance was (0.000), as it was clear that the differences was in favor of the experimental group students, and the value of the ETA coefficient of the effect size was (0.42), which means that (42%) of the variance between the two groups was due to the use of cooperative learning in the educational process. This indicated a difference in favor of the experimental group, that is, the students of the experimental group outperformed the students of the control group.

It was found that solving problems had an impact on the achievement of the fifth grade students, and the value was ($t = 8.954$) and the statistical significance was (0.000), as it was clear that the differences were in favor of the experimental group, and the value of the ETA coefficient of the effect size was (0.50), and this means that (50%) of the variance between the two groups was due to the implementation of problem solving in the

educational process. This indicated a difference in favor of the experimental group, that is, the students of the experimental group outperformed the students of the control group.

For the traditional method, it was found that there was no difference in the achievement of the fifth grade students, and the value was ($t = 0.594$), which was not a statistically significant value, and the value of the ETA coefficient for the effect size was (0.08).

IV. RESULTS

The results indicated that there were differences in the academic achievement of the fifth grade students attributable to the teaching method and in favor of the experimental group. It can be explained that the excellence of experimental group - taught by the cooperative learning and problem solving- over control group students ,taught by the traditional method, was due to the effectiveness of that method and its contribution in effective teaching of certain concepts to experimental group through the linkage to concepts and terms that remain for a longer period stuck in the students' minds, through the steps and activities the strategy include .

In addition, this strategy makes students more willing to receive information about concepts, and this method makes students the focus of the learning process, The cooperative learning strategy also help students study social and national education in an atmosphere of fun, pleasure, familiarity, love and cooperation through student interaction within the group and with each other. Thus, they have positive attitudes towards social and national education. Therefore, the subject becomes preferable to them, in contrast to the traditional method where students feel bored with the educational material because of its routine and monotony. Moreover, this strategy elaborated students' interaction with the educational material and resulted in positive reflection on the level of their academic achievement.

The reason for this can also be attributed to the nature of the test and the appropriate preparation activities it included, and the relevance of its components and various training activities to the study unit. This, in turn aroused the students' interest, and promotes a spirit of competition and questions. This made them more energetic, and motivated. It may also be attributed to the fact that training students to develop thinking and problem-solving skills of great importance help them activate the two hemispheres of the brain and to stay away as much as possible from memorization and indoctrination; In fact, it is training for the individuals to device new patterns of thinking, by organizing or reorganizing knowledge. The development of these skills contributes to increase students' awareness of their abilities, which may enable them to gain confidence which in turn is reflected in the provoking of their skills and mental abilities through scientific observation. Students become motivated to improve their reading and writing skills, up to their possession of an authentic creative performance. In addition to the above, the reason can be attributed to the fact that the program included a set of activities and questions that enrich the student's thought and challenge his thinking and enable him able to give alternative solutions .

V. RECOMMENDATIONS

According to the results of the study, the researcher can recommend the following:

1.Urging social and national studies teachers to prepare educational activities and tasks based on the strategy of cooperative learning and problem solving because of its many advantages that can contribute to increasing students' academic achievement.

2.Take advantage of the current test to include teachers' guides in the various educational stages with lessons prepared in the "Citizenship Rights and Duties" Unit

3.Experimenting the same study on other students of different groups in terms of gender, age, grade, and academic achievement, to see if these strategies render the same results with different groups of students.

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