Journal of Education and Practice
ISSN 2222-1735 (Paper) ISSN 2222-288X (Online)
Vol.13, No.12, 2022

The Effect of Teaching the Addition Unit Using the Activity Curriculum on Achievement and Attitude Towards Mathematics Among First-Grade Students in Karak Governorate

Delal Majed Abdalrahman Alrawashdeh
Jordanian Ministry of Education

Abstract
The study aimed to investigate the effect of teaching the addition unit using the activity curriculum on achievement and attitude towards mathematics among first-grade students in al-Karak governorate. The sample of the study consisted of (30) male and female students who were chosen through purposive sample from (Al-Lajoun Basic Mixed School, and Katherba Basic Mixed School). The sample was randomly distributed into an experimental and a control group. One of them was randomly selected as a control group of (15) male and female students. The second experimental group consisted of (15) male and female students who studied using the activity approach strategy. The study was in the first semester of the academic year 2020/2021 AD and it used the quasi-experimental approach. The results of the study showed that there were statistically significant differences between the mean scores of the experimental and control groups in the post-measurement of the achievement test of first-grade students in the addition unit in favor of the experimental group that was taught by the activity approach. There were also statistically significant differences between the mean scores of the experimental and control groups in the post measurement on the attitude towards mathematics for first-grade students in favor of the experimental group. The study recommended activating and developing mathematics curricula using the activity approach.
Keywords: Activity curriculum, Academic achievement, attitude.
DOI: 10.7176/JEP/13-12-01
Publication date: April 30th 2022

INTRODUCTION

Our current era is characterized by the quantum leap that the world has witnessing in terms of development and revolution in information and knowledge as well as the tremendous and accelerating technological development. This result in various problems and difficulties the world encounters in all aspects of life as education where the gap between global scientific progress and local status has been widened and the educational outcomes have declined. Accordingly, educational institutions were obliged to keep pace with this development in order to remain among the elite of civilized and advanced societies and switch to modern curricula consistent with current development instead of indoctrination based ones to help the learner to acquire learning competencies that make him a positive individual in his community and surroundings and make him capable of facing life issues (Al-Faraji and Abu Al-Sul, 2006).

One of the approaches consistent with scientific and technological development and is characterized by a realistic philosophy, is the activity approach. The activity approach aims to achieve the desired goals that meet the requirements of society. It is appropriate to modern demands and expectations and keep pace with the current technical development. The activity and experience approach is “organization of human knowledge in the form of direct or indirect experiences that learners pass through and interact with to acquire knowledge, and skills that help them achieve educational goals in a way that leads to proper personal development in all mental, physical, social cultural or affective aspects.” The units of this curriculum consist of different experiences that the students undergo according to their attitudes and interests as being a prerequisite for effective learningand teaching, but they revolve around a study material or a study topic that benefits them and their society at the same time (Darwaza, 2006).

What distinguishes the activity and experience curriculum is that it is based on the student’s activity and his/her positive role in the educational process, and also takes care of the students’ attitudes, needs and desires. In addition, it takes into account the individual differences among students, and helps in developing the students’ various skills, whether in the cognitive, kinesthetic or affective aspects. It also helps to achieve the desired goals enjoyably (El-Desouky, 2009).

Academically, the activity curriculum is also important. Students who participate in school activities often get higher grades and better achievement than those who do not participate. It also encourages students work hard and diligently to pass their exams or continue participating in the activities, at least (Darwaza, 2006).

STUDY PROBLEM AND QUESTIONS:

Through the researcher's follow-up of educational variables and her acquaintance with recent studies and through

her experience in the educational field, she has developed the notion of the importance of implementing curricula that keep pace with the current development and are appropriate to the requirements of society and capable of advancing it towards the top.

From here the problem of the study arose and accordingly the researcher searched for teaching curricula that keep pace with status and managed to fill the gaps in the traditional curricula. Activity approach is one the approaches that seek to develop teaching process where the student is placed as the cornerstone of this process. In this research, the researcher used the activity approach to achieve better and more enjoyable learning.

Therefore, the study problem can be identified by answering the following main question:

WHAT IS THE EFFECT OF TEACHING THE ADDITION UNIT USING THE ACTIVITY APPROACH ON ACHIEVEMENT AND THE ATTITUDES TOWARDS MATHEMATICS FOR FIRST-GRADE STUDENTS IN AL-KARAK GOVERNORATE?

The following sub-questions emerge from this question:

- What is the effect of teaching the addition unit using the activity curriculum on the achievement of first-grade students?

-What is the effect of teaching the addition unit using the activity approach on the attitudes towards mathematics for first-grade students?

STUDY OBJECTIVES:

This study seeks to achieve the following objectives:

-Teaching a unit based on the activity learning for mathematics for the first grade.

- Identifying the effect of using the activity learning in the field of mathematics on students' achievement in government schools.

- Identifying the effect of using the activity learning on students' attitudes towards mathematics in government schools.

STUDY SIGNIFICANCE:

The importance of this study comes from the obtainable results, which may be useful in that; it may open the door to more extensive studies as this study constitutes a preface that provides knowledge that helps in discovering the impact of the activity learning on achievement and attitudes towards mathematics. It may contribute to the improvement of the strategies used in school by identifying the impact of active learning on teaching process. The application of this approach will achieve better results

Whether on the academic or the affective side. The results and recommendations of this study may contribute to providing those in charge with a proposed model on the impact of the activity curriculum in schools, which will prompt them to have more interest in applying the activity curriculum effectively in schools, and may allow specialists an opportunity to adopt the activity curriculum in all subjects.

STUDY VARIABLES:

The study addressed the following variables:

FIRST, THE INDEPENDENT VARIABLE:

Teaching method by activity method.-

SECOND: THE DEPENDENT VARIABLE HAS TWO LEVELS:

- Achievement
- Attitude

STUDY LIMITATIONS:

This current study was determined in light of the following limitations:

1. Human limits: the study sample is confined to first-grade students from the Karak Education Directorate, and its number is (30) students.
2. Time limits: The study tools were applied in the first semester of the academic year 2020/2021 AD.
3. Place limits: first-grade students, Karak Directorate of Education, (Al-Lajjun Elementary Mixed School, Katherba Elementary Mixed School).
4. Objective limits: This study is related to the unit of addition taught through the activity method and its impact on achievement and the attitude towards mathematics.
5. study limits: The results of this study were determined by the response of the study sample to the study tools, in addition to the validity and reliability of the tools used in the study.

STUDY TERMS AND PROCEDURAL DEFINITIONS:

The following terms and procedural definitions are included in this study:

-Activity curriculum: organizing human knowledge in the form of direct and indirect experiences that learners go through and interact with so that students acquire knowledge, and skill that help them achieve educational goals in a way that leads to proper personal development in all aspects, whether mental, sensory, physical or social.The units of this curriculum are formed from different experiences that students live according to their attitudes and interests, as they are a prerequisite for effective learning and teaching, but they revolve around a subject or a study topic benefiting them and their society at the same time (Darwaza, 2006).

-Procedurally, the researchers defined it as: preparing a mathematics lesson on the basis of activity, which means that the lesson is activities with which the student's interaction occurs and the process of learning and teaching is accomplished. Consequently, he acquires information, experiences, skills and behaviors as the lesson is transferred to a beehive in which each of the students and the teacher are engaged whether these activities are inside or outside school.

-Attitude: It is the outcome of the individual vulnerability of the stimuli emanating from the environment, cultural patterns, and the heritage of previous generations so it is acquired, not innate (Al-Gharbawi, 2005).

As for the researcher's procedural definition: it is the student's feeling of consent or rejection toward mathematics after application of the activity curriculum.

-Academic achievement: It is the extent to which students understand and acquire experiences through certain academic courses, and it is measured by the degree that the student obtains in achievement tests prepared for this purpose.

- Procedurally, the researchers defined it as: what is measured by the score obtained by the student in the achievement test prepared in this study.

- First-grade students: They are first-year students in the lower basic stage, whose ages range between (6_7) years, from the official levels in the Jordanian Ministry of Education.

THEORETICAL FRAMEWORK AND PREVIOUS STUDIES

THEORETICAL FRAMEWORK:

In this chapter, the researcher will review the theoretical framework, the activity approach and experience, importance, philosophy, objectives, characteristics, implementation steps, performance advantages and obstacles, and it will also address previous studies related to the subject of the study.

ACTIVITY SYLLABUS:

In light of the tremendous developments and transformations, we must have mutual responses between these educational systems to benefit from them in favor of society and optimize it for the better. In order for the education to be up to date and able to cope with the developments, it is urgent to integrate technology into its organization, input, formulation, aims, methods and approaches. In this case, it performs its function in this changing age. In light of all these changes, there has become an urgent need to develop curricula to commensurate with the needs of the community and meet its requirements, to be appropriate to the students' attitudes, satisfy their needs and desires, develop their personality, place the student in the center of the educational process and search for curricula based on modern educational approaches such as those that depend on activity and experience in student learning (Darwaza, 2006).

The results of the research showed that the traditional lecture method has become one of the old methods that do not work, so we had to use a developed and comprehensive curriculum that contains methods and strategies that would develop the educational process, where the activity curriculum is defined as the curriculum that contains modern educational strategies. And keeps up with the developments of the times (Bayoumi, 2015).

The activity curriculum is defined as those programs and activities that is interested in the learner and are concerned with his mental or physical effort exerted in the types of activity that suit his ability, attitudes and interests inside and outside school so that it helps to enrich experience and acquire multiple skills to serve the demands of physical and mental development of students and the requirements of society's progress and development (Al Darwaza, 2006).

Kahwaji considered it as a set of experiences, programs and events all students practice according to their age stages, their needs, attitudes and desires, with a specific and effective plan under the supervision of the school and under the guidance of their teachers to achieve the educational goals (Al-Kahwaji, 2010).

The activity and experience approach is an approach based on learning by doing, making the student the center of the educational process, and developing the student's personality in all its aspects, whether cognitive, moral and psychological by transforming the lesson into a permanent activity and interaction between the teacher, his students and the material (Darwaza, 2006).

In light of the definitions of the activity and experience approach, we can emphasize the importance of the activity curriculum and its role in developing the cognitive, emotional and psychomotor aspects. The

significance of the activities lies in the following:

Since the activity is an integral part of the curriculum as it is linked to it side by side to achieve the comprehensive growth of the students. The school activity helps the learner to link between what he studies inside classrooms and what is outside. Functionally, this makes learning of real benefit to the learner.

The school activity also helps the learner to be positive and motivates him to acquire more educational experiences. The school activity must be compatible with the learners' attitudes and interests, meet their needs, and be compatible with their abilities and aptitudes (Desouki,2009).

The activities seek to satisfy the students' different practical, scientific, cultural, social and psychological tendencies and needs. Students' practice of various activities helps them acquire and train in communication skills, such as good reading, speaking and listening. The school activity helps students to plan well. Through group work, participation in the planning of the various activities is necessity and the activity links theory and practice, as the theoretical and verbal knowledge within the walls of the classroom does not give full meaning and significance (Al-Faraji Abu Al-Sul, 2006).

THE ACTIVITY APPROACH HAS SEVERAL OBJECTIVES IT SEEKS TO ACHIEVE, INCLUDING:

- Helping and developing the school's role in discovering and identifying the students' different abilities, developing a kind of strong cooperation between the students and the school's teaching staff, building a human relationship that includes love and safety, as well as bringing together all the different activity groups in school (Al-Nassar, 2005).

In order for the school to achieve its goals, we must look at the school activity as an important part of the curriculum in its broadest sense, and make this activity an extension of it and a support for the cognitive aspects in the textbook.

Having presented the definitions of the activity and experience curriculum and identifying its philosophy, it is imperative to know the characteristics contained in the activity and experience curriculum and related to each of the following:

A- Educational objectives: The educational objectives that must encompass all aspects of knowledge, emotional and psychomotor. They must be relevant to the ages and level of maturity of the students, and take into account individual differences.

B- Characteristics of the teacher: The role of the teacher has changed from being the center of the educational process to the role of the director, mentor and supervisor, assistant to his students. He cooperates with them, respects their opinions, and well versed in different and modern teaching methods and methods.

C- Student Characteristics: The focus in the activity and experience curriculum has become on the student as the center of the educational process, and he is an active, and cooperative student with his teacher, colleagues and the subject. He is also able to take responsibility. Also, one of the characteristics is the student's development of personality in all its cognitive, moral, physical, psychological and social aspects.

D- Characteristics of the school environment: the activity and experience curriculum environment must have a friendly, safe and cooperative environment, in which each individual respects the other. This curriculum owns the tools, materials and means necessary for its implementation.

E- Evaluation: Unlike evaluation in other educational curricula, evaluation in the activity and experience curriculum focuses on evaluating the student in all aspects. It is not confined to cognitive level as in some other curricula, but rather, it includes evaluation of students' attitudes as well as motor and physical skills. There were many evaluation methods in the activity and experience approach that vary according to the goal to be measured. There are some scales for attitudes and others for behavior and skills, in addition to methods of evaluating the cognitive aspect (Darwaza, 2006).

HOW IS THE ACTIVITY CURRICULUM IMPLEMENTED?

The activity and experience approach is not applied in vain and without prior preparation and planning inside and outside the classroom. Rather, it is an organized and planned approach through which the desired goals are achieved by certain parties. In order to achieve these goals in the best, fastest and least effort, it is necessary to pass through the following steps:

-THE FIRST STEP: to identify learners' needs, desires, and tendencies, by following up on the latest scientific and psychological studies to exert efforts to achieve them.

-THE SECOND STEP: to integrate students, encourage them, and allow them to think about the appropriate activities that help satisfy their needs and suit their inclinations.

-THE THIRD STEP: to choose the appropriate activity or activities based on the need and how to satisfy it.

-THE FOURTH STEP: to follow the planning and organization of these activities, devise an appropriate plan for their implementation, and undertake the appropriate work and activity for that.

-THE FIFTH STEP: Implementation of the activity, where the learners practice the appropriate and planned activities in advance to find a solution to the problem they encounter, which is to satisfy the need that was

previously identified.

These are the steps that the activity approach must go through in order to achieve the desired goal and achieve the desired goals by the competent authorities (Al-Gharbawi, 2005).

The activity curriculum is distinguished in that it increases awareness of rapid social changes and works to confront these variables, especially those related to culture in order to achieve students' adaptation to this development through some modern trends in the field of education such as the principles of self-learning and learning by doing and other trends.

Among the difficulties or obstacles this approach encounters is that it is difficult to identify coordinate and organize students' tendencies, needs and desires. It may neglect the past and future because of its excessive focus on the present. It is also difficult to apply this approach in the absence of the necessary capabilities, and the lack Qualified and well trained teachers for such activities (Bayoumi, 2005).

PREVIOUS STUDIES

The researcher reviewed many studies to enrich her study. In addition, she utilized them to interpret the results. The following is a review of previous studies:

-In AbdRabbo study (2015), which aimed to identify the role of school activities and some categorical variables in the effectiveness of basic government schools in the directorates of the northern West Bank from their principals' perspectives and to determine whether school activities are available in these schools. The study used the assessment of the predictive accuracy of some variables, and the study used indicators of predictive capability, the square of the correlation coefficient and the square of the corrected multiple correlation coefficient. The study sample consisted of (259) principals from the directorates of the northern West Bank. The results of the study indicated that there were statistically significant differences for the variable of artistic activity, health activity, educational qualification, gender and social activity on school effectiveness.

-In Al-Haqbani study (2014), which aimed to identify the obstacles to activating non classroom school activities in girls' schools in the south of Riyadh from the school principals 'perspective and to identify the statistical differences between the responses of the sample according to the variables of experience and the quality of the school building. The researcher used the descriptive approach to suit the nature of the study. The study tool- the questionnaire - was designed and then applied to a stratified random sample, which was (136) principals. The study concluded that the most important obstacles to activate non-classroom school activities were the teaching burden of teachers and the constant change of activity leaders, and that the development of school activities is achieved by encouraging outstanding female students in school activities and presenting examples of their work.

-Saqr (2016) conducted a study aimed at identifying the impact of using the active class strategy on the achievement of fifth grade students in mathematics and their attitudes towards its learning. The quasi-experimental approach was used, and the study sample consisted of (72) fifth grade students in Asker Community School affiliated to UNRWA in Nablus, they were distributed randomly and equally to two control and experimental groups. An achievement test was applied in the decimal unit and an attitude scale consisting of (30) items. The study concluded that there was an effect of using the active class strategy in the achievement of fifth grade students in Mathematics. It was found that there was an effect of using the active class strategy to develop the attitudes of fifth grade students towards learning mathematics.

-In Sakhleh's study (2017), which aimed to identify the impact of teaching a unit in science designed according to the activity and experience approach on the achievement and attitudes of fourth-grade students in Nablus Directorate of Education? The semi-experimental approach was used and the study sample consisted of (70) fourth grade students in Ibn Qataiba School of the Palestinian Ministry of Education in Nablus. they were distributed randomly and equally to control and experimental groups, they were subjected to an objective achievement test consisting of (30) items, and a questionnaire to measure students' attitudes towards science. It consisted of (32) pre and post items. The study found that there were statistically significant differences for the activity and experience approach on academic achievement and attitudes.

METHODOLOGY AND PROCEDURE:

This chapter presents the method and procedures used in the design of the current study. It presents the study methodology, the sample, and the tools used in data collection. It also deals with the method of conducting the pilot study, the field study, and how to verify the validity and reliability of the tools used in data collection and analysis.

STUDY METHODOLOGY:

This study adopted the quasi-experimental approach to identify the effect of the independent variable- the activity curriculum- on academic achievement and the attitudes towards mathematics among first-grade students in the Karak Directorate of Education.

STUDY POPULATION:

The study population consisted of all the students of the first grade of the basic school for the first semester of the academic year 2020/2021 AD in the government schools in the Directorate of Education in Karak. They were (2481) male and female students (according to the statistics of the Planning Department in the Directorate of Education). The study sample consisted of (30) male and female students who were deliberately selected from the first grade students. The students were randomly distributed into two groups. One group was randomly selected as a control group- (15) male and female students- and the second experimental group - (15) male and female students taught by activity approach strategy.

STUDY TOOLS:

The researcher prepared the following:

-FIRST: THE EDUCATIONAL MATERIAL, WHICH IS DIVIDED INTO TWO PARTS:

A- Traditional method: where the first grade students in the control group were taught (addition) unit from (mathematics) book by the traditional method..

b- Activity approach strategy.

SECOND: THE ACHIEVEMENT TEST:-

An objective test was prepared to evaluate the extent to which students acquired the addition process. The number of its items was (20) in mathematics for the first grade. The preparation of the test undergone through the following stages: -

1- Determining the subject of the study that was taught using the activity curriculum.

2- Analyzing the content of lessons from (addition) unit in mathematics for the first grade in the first semester of the year 2021/2022 in order to determine the dimension of the content.

3- Preparing a list of educational objectives necessary for the unit of study to measure student achievement.

4- Writing the instructions at the beginning of the test. they included the number of questions the student had to answer. The student attention was drawn to write his data in the designated place, the scientific objective of the test was clarified. The test also included general instructions on how and where to record the answer with an illustrative example, the allotted time for the test. The student was not allowed to answer until authorized to do so. He was alerted not to leave any question unanswered and to write his name and his section in the designated space.

5- The correction method of the test: one mark was allocated for each of the test questions. The test in its final form included (20) multiple choice items and the maximum degree of the test became (20) marks, and the minimum was (zero).

6-The test was applied to a pilot sample of (30) male and female students chosen randomly from inside the study population and outside its sample in order to determine the test time to ensure clarity of meanings and test instructions as well as to verify the psychometric characteristics of the test and its items as follows:

A- Discrimination and difficulty Coefficients of test items: The students' answers were analyzed after dividing them into two equal groups according to their scores, the upper group and the lower group, then the discrimination coefficient was extracted among the items, and no item was excluded as table (1) shows:

TABLE NO. (1): DISCRIMINATION AND DIFFICULTY COEFFICIENTS FOR THE ACHIEVEMENT TEST ITEMS.

Item	Discrimination coefficient	Difficulty coefficient	Item	Discrimination coefficient	Difficulty coefficient
1	.58**	.32	**11**	.63**	.56
2	.51**	.76	**12**	.59**	.44
3	.52**	.56	**13**	.47*	.51
4	.48*	.44	**14**	.51**	.61
5	.69**	.57	**15**	.58**	.76
6	.47*	.68	**16**	.46*	.40
7	.75**	.76	**17**	.71**	.73
8	.72**	.72	**18**	.62**	.70
9	.55**	.36	**19**	.53**	.37
10	.56**	.76	**20**	.54**	.72

statistically at the significance level (α≤0.05). ** statistically at the significance level (α≤0.05).*

It is clear from Table No. (1) that the coefficients of difficulty for the test items ranged between (0.32-0.76) and discrimination coefficients were between (0.46-0.75), and these discrimination coefficients are appropriate according to the Ebel criteria referred to in (Al-Nabhan, 2004). All items were approved, which indicates the suitability of the items to take the test.

B- THE RELIABILITY OF THE ACHIEVEMENT TES.

The test reliability was verified using Test Retest, where the test was applied to the pilot sample - (30) male and female students- and the students' scores were scored, then the test was re-applied to the same sample again after (14) days from the first application and the students' scores were scored. After calculating the correlation coefficient of the students' scores between the two times of the application, the correlation coefficient calculated by this method was (0.88).The reliability indicators were confirmed using the internal consistency reliability using the Cronbach's alpha equation, and the reliability coefficient calculated by this method was (0.91), and this value is considered good for this type of test and indicates that the test has an adequate degree of reliability.

THIRD: A MEASURE OF ATTITUDE TOWARDS MATHEMATICS.

VALIDITY OF THE MATHEMATICS ATTITUDE SCALE:

The validity of the scale was verified using the validity of the arbitrators.

The scale was distributed to (10) arbitrators who were professors of curricula and methods of teaching mathematics, measurement and evaluation in Jordanian universities and mathematics supervisors. The scale was modified in the light of their suggestions and opinions, as no item was deleted and with an agreement accouning for more than (80%) of the arbitrators. Thus, the scale remained (20) items.

The significance of the scale's validity was also verified using the internal construct validity, by calculating the correlation coefficient between the individual's score on the item and his total score on the scale on a survey sample (n = 30) male and female students, and this table shows (2):

TABLE (2): VALIDITY OF COEFFICIENTS OF THE MATHEMATICS ATTITUDE SCALE.

No	Correlation coefficient	No	Correlation coefficient
1	.385*	**11**	.610**
2	.454**	**12**	.462**
3	.361*	**13**	.628**
4	.456**	**14**	.384**
5	.548**	**15**	.426*
6	.455**	**16**	.441**
7	.393*	**17**	.423**
8	.546**	**18**	.379*
9	.377*	**19**	.712**
10	.662**	**20**	.599**

Significance level at (α≤0.05). ** Statistical significance level at (α≤0.05). statistical*

It is clear from Table (2) that the correlation coefficients ranged between (0.361-0.712), and all of them were statistically significant at the level of significance (α≤0.05).

THE RELIABILITY SCALE OF ATTITUDE TOWARDS MATHEMATICS:

The reliability of the scale was verified by applying it to an pilot sample of (30) male and female students, chosen randomly from inside the study population and outside its sample, then re-applying the scale again to the pilot sample after 14- day time difference to calculate the reliability of the scale. The reliability coefficient calculated by this method was (0.86), and the reliability of the internal consistency was also verified using Cranach's alpha equation, where the reliability coefficient calculated by this method was (0.88).

STUDY PROCEDURES:

The researcher followed the following procedures:

-FIRST: The researcher prepared a guide for teaching mathematics of the target unit (addition) using the activity approach.

-SECOND: The study material to be taught was chosen using the activity curriculum in a manner consistent with the distribution of the curriculum, in terms of the number of lessons and activities and their time, with due care for the equal application of the method.

The educational material for the study unit was constructed according to the activity curriculum, and it was based on theoretical literature and experts to prepare it.

Then it was judged and amended according to specialists' suggestions. The educational material was prepared as a guide for the teacher to achieve this purpose. The educational material for the unit was prepared according to the following stages:

1- Content analysis of the addition unit, where the objectives of the lessons included in the unit ,the basic and sub concepts of each subject and the relationships between them were identified.

2- Determining the general steps of the strategy, preparing a plan for the course of its lessons that includes the basic steps for each lesson, and writing the cognitive material according to these steps, including the selected activities.

-SECOND: The design of the two study tools (the achievement test and the scale of attitude towards mathematics).

-THIRD: Dividing the four sections of the selected schools into two groups, the control group (not exposed to the method) and the experimental group (which is taught using the activity approach strategy as previously explained in the study sample.

-FOURTH: The students of the experimental group were trained on a pre-application lesson and were trained on the steps of this strategy.

-FIFTH: The equivalence of the two groups was confirmed using the (t) test for independent samples on the study sample from the control and experimental groups in the pre measurement as the table (3) shows:

TABLE (3): RESULTS OF THE T-TEST FOR INDEPENDENT SAMPLES TO IDENTIFY THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS IN THE PRE-MEASUREMENT ON THE ACHIEVEMENT TEST AND THE ATTITUDE SCALE.

Variable	group	No	Arithmetic means	standard deviation	d. f	(t)value	Significance level
Academic achievement	**experimental**	**15**	6.00	1.19		.144	.886
	control	**15**	5.93	1.33			
Attitude toward mathematics	**experimental**	**15**	30.67	4.13	**28**	.896	.378
	control	**15**	29.27	4.41			

It is evident from the results in Table (3) that there were no statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the mean scores of the experimental and control groups in the pre measurement on the academic achievement test and the score of attitude towards mathematics, where the calculated (t) values was (.144, .896) respectively. This indicates that there was equivalence between the control and experimental groups.

-Sixth: Teaching the students of the experimental group for a month, as the teaching started from 14/2/2021 until 10/3/2021, at an average of 12 lessons.

STATISTICAL TREATMENTS:

To answer the study questions, the following statistics were used:

1- Arithmetic means and standard deviations.

2- (t) test for independent samples.

3-Pearson correlation coefficient to calculate the repetition reliability.

4- Cranach's alpha\equation to calculate the reliability of internal consistency.

STUDY RESULTS, DISCUSSION AND RECOMMENDATIONS:

THE RESULTS OF THE FIRST QUESTION AND ITS DISCUSSION: WHAT IS THE EFFECT OF THE ACTIVITY CURRICULUM ON THE ACHIEVEMENT OF FIRST-GRADE STUDENTS IN THE ADDITION UNIT?

To answer the question, a t-test for independent samples was used on the study sample from the two experimental and control groups in the post-measurement, and the table (4) shows that:

TABLE (4): RESULTS OF THE T-TEST FOR INDEPENDENT SAMPLES TO IDENTIFY THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS IN THE POST-MEASUREMENT ON THE ACHIEVEMENT TEST.

Variable	Group	No	Arithmetic means	Standard Deviation	d. f	(t) Value	Significance level
achievement	**experimental**	15	15.27	2.79	28	10.917	.000
	control	15	6.40	1.45			

It is evident from the results in Table (4) that there were statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the mean scores of the experimental and control groups in the post-measurement on the achievement test of first-grade students in the addition unit, where the calculated (t) value was (10.917) and its significance level is equal to (.000). this indicated that there was an effect of the activity curriculum on the achievement of first-grade students in the collection unit.

The result of the question indicated that there is an effect of the activity curriculum on the achievement of first-grade students in the addition unit, and this may be due to the fact that the activity curriculum developed student's cognitive, kinesthetic, emotional aspects and that the activity curriculum placed the student at the center of the educational process. The experimental school established by John Deweywas the first modern school to design its curriculum on the basis of activity in the light of the students' desires, interests and motives. It considered the student the main focus of this process due to the importance of the activity curriculum in the transformation from the vision of the educational process as training students to memorize information without comprehension to teaching them how to demonstrate the information they learn for profound understanding and

developmentof scientific thinking. The researchers relied on the constructivist theory as it supports learning by doing and activity in teaching-learning process. In order for the school to achieve its goals, the school activity must be seen as the cornerstone of the curriculum. This result can be attributed to the fact that teaching using the activity approach helped students to organize their knowledge, define their goals, evaluate their performance, and compare their post-learning with the pre-learning.The students had a great desire to learn in this way. It may also be attributed to the fact that it gave them the opportunity to organize their previous information and knowledge that exists in their cognitive structure and link it to the new.

This result was consistent with Sakhleh study (2017) and AbdRabbo (2015), which found that there were statistically significant differences for the activity and experience approach on academic achievement. It is also consistent with Saqr study (2016), which indicated that there was an effect of using the active class strategy in the achievement of fifth grade students in mathematics.

THE RESULTS OF THE SECOND QUESTION AND ITS DISCUSSION: WHAT IS THE EFFECT OF THE ACTIVITY CURRICULUM ON DEVELOPING THE FIRST-GRADE STUDENTS' ATTITUDES TOWARDS MATHEMATICS?

To answer the question, a t-test for independent samples was used on the study sample from the experimental and control groups in the post-measurement and the table (5) shows that:

Variable	Group	no	Arithmetic means	Standard Deviation	d. f	(t) Value	Significance level
Attitude scale	**experimental**	15	73.33	2.97	28	21.794	.000
	Control	15	48.07	3.37			

TABLE (5): RESULTS OF THE T-TEST FOR INDEPENDENT SAMPLES TO INVESTIGATE THE SIGNIFICANCE OF THE DIFFERENCES BETWEEN THE CONTROL AND EXPERIMENTAL GROUPS IN THE POST-MEASUREMENT ON THE ATTITUDE SCALE.

It is evident from the results contained in Table (5) that there were statistically significant differences at the level of significance ($\alpha \leq 0.05$) between the mean scores of the experimental and control groups in the post-measurement on the attitude scale, where the calculated (t) value was (21.794), and its level of significance is equal to (.000). This indicates that there was an effect of the activity curriculum in developing the attitudes of first-grade students towards mathematics.

The reason for the impact of the activity curriculum in developing the first-grade students' attitudes towards mathematics can be attributed to the fact that this curriculum focuses on the emotional as well as cognitive and kinetic side of the student by acquiring him positive attitudes towards study and school, engaging him the study subject as the activity curriculum enhances effective interaction and the student's participation in teaching process. Since the attitude is one of the states of mental and nervous preparedness organized by experience and has a directive action on individuals' responses to different things and situations. We note that the acquisition of attitudes in this curriculum is closely related to the constructivist theory, which considers that the individual builds his knowledge inside his mind and what the student feels and does not pass to him as complete. Here, we can say that the student builds positive attitudes towards the study subject according to the situations he has experienced and enjoyed. He had an active role which led to the formation of a mental image through which he gained negative or positive attitudes, towards what he learned in the educational material. The activities also aimed at developing the student's skills and experiences that achieve his talents, and develop his abilities.

This result is consistent with the Sakhla study (2017), which found that there were statistically significant differences in the activity and experience approach on attitudes, and is consistent with Saqr study (2016) and Al-Haqbani (2014), which concluded that there was an effect of using the active class strategy in developing the attitudes of fifth grade students. towards learning mathematics.

RECOMMENDATIONS:

According to the results of the study, the recommendations can be:

1- Providing the necessary tools and supplies for mathematics teachers and first graders to helps them implement the activity curriculum, as many schools lack the basic tools that help the teacher implement his plans and pose an obstacle to the educational process.

2- When evaluating teachers, inviting the mathematics and stage supervisors to focus on the teachers' interest in using modern and diverse methods and strategies, including the activity curriculum and how to use it.

3- Holding seminars and workshops to inform teachers and parents of the importance of the activity curriculum and its impact on the student in all academic or psychological aspects of life to create an innovator, a thinker, rather than a recipient.

4- Holding training workshops for in- service mathematics teachers on the strategy of the activity curriculum.

5- Directing the attention of those in charge of preparing the mathematics curricula to integrate activity

curriculum in school mathematics curricula due to its role in developing students' academic achievement as well as achieving excitement d increasing students' motivation towards learning, and consequently their acquisition of positive attitudes towards learning and teaching.

6- Conducting a similar study dealing with the effect of using the activity approach to enhance motivation towards learning and developing critical thinking.

7- Conducting a similar study on different educational stages such as the secondary stage, and on other subjects such as science.

REFERENCES

- Al-Haqbani, Feryal Abdullah (2014). ***Obstacles to activating extracurricular school activities in girls' schools in Riyadh from female principals' perspective,*** The Arabian Gulf Resala, Saudi Arabia, No. 35, p. 31, pp. 117-136.
- Al-Desouki, Eid Abu Al-Maati (2009). ***The development of scientific activities toimprove thinking***, Modern University House Office for Publishing, Egypt.
- Al-Gharbawi, Muhammad Abdulaziz (2005). ***Psychological Attitudes***, Dar Ajnadeen for Publishing and Distribution, Riyadh, Saudi Arabia
- Faraji, Hadi, Abusel, Musa (2006). ***Active and educational skills***, House of Knowledge for Publishing and Distribution, Amman, Jordan.
- Al-Qahwaji, Sana (2010). ***The effect of extracurricular scientific activities on the level of academic achievement of seventh-grade students in Biology***, Master's thesis, faculty of Education, University of Damascus, Syria.

Bayoumi, Samir (2015). ***Active Learning Strategies, Digital Education Schools for Publishing and Distribution***, Riyadh, Saudi Arabia.

Darwaza, Afnan (2006***). Curricula and its evaluation criteria***, Nablus, Palestine.

- Sekhla, Mohamed Anan (2017). ***The effect of teaching a science unit designed according to the activity and experience curriculum on the achievement and attitudes of fourth grade students in the Nablus Education Directorate***. Unpublished MA thesis, Najah National University in Nablus, Palestine.
- Saqr, Khitam Muhammad (2016). ***The effect of using the active class strategy on the achievement of fifth grade students in mathematics and their attitudes towards learning it.*** Unpublished MA thesis, Najah National University in Nablus, Palestine.
- AbdRabbo, Aisha (2015). ***The role of school activities in the effectiveness of basic public schools in the directorates of the northern West Bank from principals' perspective***.Master's thesis, faculty of Educational Sciences, -Najah National University, Palestine.