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ACTIVITIES BASED SUBJECT COMMITMENT AS VIEWED BY TENTH GRADE STUDENTS IN MADABA DIRECTORATE OF EDUCATION: THE CASE OF MATH COURSE

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ABSTRACT: *The current study aimed to examine the extent to which mathematics teachers are committed to the activities related to course subjects as perceived by tenth grade studentsd. Study instrument adopts a descriptive approach as a questionnaire consisting of (27) paragraphs including two aspects (classroom activities and extracurricular activities). The sample consisted (333) students who were randomly chosen in the first semester of the academic year (2018-2019). The results show that the degree of teacher practicing of designed activities related to the subjects as perceived by the tenth-grade students in the Directorate of Madaba has a medium degree in all aspects. Moreover, the results show that there are statistically significant differences of practicing attributed to the school sector and for the benefit of private schools, besides statistical significance differences attributed to the gender for the benefit of females.*

KEYWORDS: *activities based subjects, math teachers, 10th grade students, Madaba governorate*

INTRODUCTION

Education is a continuous process that involves the ability of the individual to adapt to his or her environment. It is an acquired process that the individual learns from the social institutions around him. The school is an important institution that works to build the individual and prepare him to keep pace with the changes that are taking place in contemporary life in light of the rapid change and development in various areas of life. The school is no longer the place where students meet only to receive knowledge, but rather a society that develops skills, tendencies and attitudes and prepares the individual for life. This will only be achieved by the interaction of all elements of the educational process, including the curricula.

The curriculum is no longer limited to providing students with information and developing their skills but includes much more. It has become concerned with the requirements of the age and is concerned with the skills related to the needs of the students, expanding their activities and developing their creativity (Al-Ghamdi, 2011). The activities are an extension of the curriculum that leads to the development of the personality aspects in an integrated manner (Ramadna, 2006). Therefore, educators attach great importance to the

activities and their main role in the educational process, because they achieve the goals in the natural growth of the learner from the physical, mental and psychological sides where learning is the road to the desired integrated growth, so it is necessary to practice students for different types of activity under the supervision and guidance of teachers (Al-Mutairi, 2013).

Mathematics is an important subject, on which the rest of science is based, as it represents the summit of thought, and is the basis for the advancement of human thought, including philosophical thought, so Plato wrote on the door of his academy the following words: "Whoever has not been an athlete does not enter the building." What has been recorded by the scientific human revolution in recent years in the land is the true employment of relations and mathematical equations (Majidil and Yafi'i, 2009).

Mathematics learning has four main axes including; numbers, processes, statistics and possibilities, patterns, algebra, functions, engineering and measurement (Ministry of Education, 2012). Al-Nuwashi (2010) pointed out that the mathematics curriculum aims to achieve it through teaching in educational institutions for the stages of kindergarten and even university education, and to highlight its objectives including; provide students with the skills of thinking and scientific skills, dealing with knowledge of the digital nature, assessing the impact of mathematics and its importance in society and acquiring good social skills, and the formation of trends and positive attitudes towards learning mathematics.

LITERATURE REVIEW

In view of the reflection of cognitive development on the learning process and the change in the role of teacher and learner, there is a need to diversify the used learning strategies and to find modern teaching strategies that help to enhance communication between teacher and students and students themselves and easy access to information for students (Wickets & Shawls, 2016). Wiersum (2012) stated that mathematical knowledge becomes easier to understand and more useful when students learn in the way of games and through activities, The results of a study showed that the concentration of students in the school up to the tenth grade does not exceed 20 minutes per session, and to overcome this learning mathematics should be more enjoyable by linking it to activities and popular games.

Pokhrel (2018) noted that educational studies have shown the importance of games as a way to learn mathematics with pleasure. Learners, especially young ones, love to play games and are considered to be the best tools for developing the mind. Educational video games improve basic mental abilities (visual processes, attention and vigilance, executive tasks and job-related skills). Moreover, physical games have a strong impact on mental, psychological and social development so the games were considered as a way to teach and learn different things in mathematics from the knowledge of facts and skills development and understanding of concepts and development strategies. The practical activities are

skill-oriented approaches to learning mathematics. In addition to acquiring practical skills, the activities gain direct experience and the development of practical skills in teaching various mathematics topics such as graphs, trigonometry, engineering, etc.

A study was conducted in Nepal (2018) aimed at following the teaching of mathematics in an active learning way to equip students with the skills of the 21st century. The group of activities and competitions for the teaching of mathematics in the first grade to the 10th grade were implemented in Kathmandu Vally for 45 minutes over 33 days. Twenty-five students were selected and interviewed. The results showed that learning math in an active learning way would give students the 21st-century skills and make them more social, allowing others to participate with them in learning to make them more fun. They also love mathematics and retain what they have learned and employed in their careers.

Yildinm & Ozyilmaz (2017) conducted a study in Izmir province in Turkey to detect the effects of outdoor activities on the cognitive, motor, linguistic, social and emotional development of children. The study sample consisted of 35 children for ten weeks during which children were exposed to a range of activities designed to take into account the age group, The study shows that learning outside the classroom and outdoors provides the basic experiences of children and stimulates all their senses and helps them translate theoretical knowledge into practice, recording it into long-term memory and helping them find solutions to the problems they face in everyday life based on what they have learned.

Wirikat and Shawwa (2016) conducted a study aimed at understanding the effect of teaching mathematics on the learning strategy by playing sports skills and improving communication skills among the first-grade students in Jordan. The study sample consisted of two divisions for the first grade in the Sama Amman International School. The sample of the study was divided into two groups: the control group consisting of (24) students studied in the usual way, and the experimental group that was composed of (26) students studied mathematics with the strategy of learning by playing. The researchers developed the mathematical skills test and the social communication scale. The results showed a statistically significant difference between the mean scores of the two groups on the post-mathematical skills test and on the social distance dimension from the point of view of the teacher and for the benefit of the experimental group.

Al-Rashidi (2015) conducted a study aimed at identifying the extent to which primary school teachers in the State of Kuwait practice active learning elements from the point of view of mentors and principals. The sample consisted of (45) male and female principals (60) male and female mentors. The results of the study showed that the degree of practicing primary school teachers in Kuwait for active learning elements from the point of view of mentors and principals was medium. The results showed also an absence of statistically significant differences in the level of practicing primary school teachers in the State of Kuwait for the active learning elements due to gender variable and experience of the mentor and the presence of statistically significant differences due to the qualification of the teacher on the total score. The difference was in favor of those holding a bachelor's degree

in the reading component and the absence of statistically significant differences in the degree of practicing primary school teachers in Kuwait for the active learning elements due to experience and gender variables of the principal except the writing element where the difference was in favor of females.

PROBLEM STATEMENT

Activities are an integral part of the school curriculum, which contributes to the building of the student's personality, skills and tendencies. This depends mainly on the degree of the teachers' practice. Therefore, it must be followed up by the administrators of the educational process.

By analyzing the students' performance on the national tests, their weakness in mathematics may be attributed to the fact that they have difficulty understanding the subject because they are not taught in an active manner that motivates them to learn. The results of the International Study of Science and Mathematics (TIMSS) and the experience of the researcher in the field of educational supervision of mathematics in the schools in Jordan noted differences in the degree of teacher practice of activities related to subjects in mathematics. This disparity may be due to the availability of a stimulating educational environment and teachers' awareness of the importance of these activities in achieving the desired outcomes from the implementation of the curriculum.

The researcher chose the tenth-grade students because it marks the end of compulsory education in Jordan. The students have the ability to identify their needs and can judge the suitability of their knowledge and skills.

In light of the above, the researcher is trying to reveal the degree of the practice of mathematics teachers for activities related to the subjects from the point of view of the tenth-grade students in public and private schools in the Directorate of Kasbah Madaba.

STUDY QUESTIONS AND OBJECTIVES

This study aims to identify the degree of mathematics teachers' practice of activities related to subjects from the point of view of the tenth-grade students in the public and private schools in the Directorate of Kasbah Madaba. To achieve this goal, the study sought to answer the following questions:

1- What is the degree of the practice of mathematics teachers for activities related to subjects from the point of view of the tenth-grade students in the Directorate of Kasbah Madaba?

2- Are there significant statistical differences at the level of ($\alpha \leq 0.05$) in the degree of mathematics teachers' practice of the activities related to the subjects due to the school type (public or private) and to gender (male or female)?

STUY IMPORTANCE

The importance of the study is that it coincides with the priorities of the government in the project of the national renaissance in the axis of the state of Takaful and the directions of the Ministry of Education in its strategic plan 2018-2020 to increase the time allocated to the activity in the Jordanian school. Moreover, this study is one of the few studies that seek to detect the degree of practice of mathematics teachers for educational activities. The educational activities are enhanced by the knowledge provided to the student, which he finds to be the activity and turn it into a practical exercise away from the method of indoctrination, which does not help the student to keep the information for a long time. In addition to the above, the importance of the study is as follows:

1. Examining the degree of practice of mathematics teachers for activities related to the subjects leads to teachers activating them, and thus makes mathematics education fun and likable for students.
2. Helps educational supervisors and school administrations to review the methods used in the evaluation of teachers.
3. Helps the training department of the Ministry of Education reports on the revision of the content of the training courses provided to the teachers.
4. The study may constitute on a new addition to the educational literature in the field of teaching mathematics.
5. The results of the study can be used in other studies in other educational areas or in different age groups.

STUDY LIMITS

The study was governed by the following limits:

- Objective limits: The study was limited to examining the degree to which mathematics teachers practiced activities related to subjects in the Directorate of Kasbah Madaba.
- Spatial limits: The study was implemented in public and private schools in the Directorate of Schools of Kasbah Madaba.
- Time Limits: The study was applied at the end of the first semester of the academic year 2018/2019.
- Human limits: The results of the study are determined by the responses of the sample members representing the tenth-grade students in the schools of the Directorate of Kasbah Madaba.

STUDY POPULATION

The study population is composed of all (2543) students of the 10th grade in the public and private schools in the Directorate of Kasbah Madaba, according to the Open Emis electronic data system distributed in (92) divisions.

STUDY SAMPLE

A random sample was taken. The sample was distributed to all the population. The students were selected by lot. Table (1) shows the sample and its distribution.

Table (1): the distribution of the study sample

School type	Number of males	Number of females	Total
Public schools	130	144	274
Private schools	37	22	59
Total	167	166	333

STUDY INSTRUMENT

The researcher prepared the study tool after reviewing the previous literature, divided into two main sections, the first section includes the gender of the student and the school type, and the second section consists of the paragraphs that show the degree of teacher practice of the activity related to the subject, and consists of two main fields. The first area is the classroom activities and the second field is the extracurricular activities. The validity of the study tool was verified by presenting it in its preliminary form to a number of arbitrators who have expertise and experience in the field of curriculum, measurement and evaluation in order to ascertain the validity of the paragraphs and their linguistic integrity, their belonging to the field we measure, and to ask them to make proposals on the appropriateness of the tool for the purposes of the study. In the light of those proposals, (85%) of the arbitrators on the required amendment, and on the basis of that, the tool was drawn out of the study in its final form.

INSTRUMENT VALIDITY

To find the VALIDITY of the study instrument, the researcher used two methods: Method 1: Test-retest: By applying the questionnaire to a group of tenth-grade students outside the study sample and then reapplying after two weeks. The Pearson correlation coefficient was as shown in Table (2).

Table (2): Stability parameters for the questionnaire by Test-retest method

Number	Field	Pearson coefficient
1	Classroom activities	0.82
2	Extracurricular Activities	0.81
Total score		**0.82**

Method 2: Stability in the internal consistency method using the Cronbach's alpha equation has reached (0.85) as shown in table (3):

Table (3): Internal consistency coefficients for the questionnaire using Cronbach's alphaformula

Number	Field	Pearson coefficient
1	Classroom activities	0.82
2	Extracurricular Activities	0.84
Total score		**0.83**

In order to answer the first and second questions, the means, standard deviations and the degree of learning elements were used according to the following statistical criteria (Table (4)).

Table (4): The used statistical criteria

Mean	Degree
From 1.00 - less than 2.33	Low
From 2.34 - less than 3.66	Medium
From 3.67 - 5.00	High

RESULT and DISCUSSION

In this chapter, the results of this study were presented by answering the following questions:

Question 1: What is the degree of practicing mathematics teachers for the activities related to the subjects from the point of view of the tenth-grade students in the Directorate of Kasbah Madaba?

To answer this question, the means and standard deviations were calculated for the degree of mathematics teachers' practice of activities related to subjects from the point of view of the tenth-grade students in general and for each field of the study tool. Table (5) shows this.

Table (5): Means and standard deviations of the degree of mathematics teachers' practice of activities related to subjects from the point of view of 10th-grade students

Number	Field	Mean	Standard deviation	Degree
1	Classroom activities	2.54	0.73	Medium
2	Extracurricular Activities	2.42	0.75	Medium
Total score		**2.48**	**0.62**	**Medium**

It is noted from Table (5) that the degree of mathematics teachers' practice of activities related to subjects from the point of view of the tenth-grade students was medium with a mean of (2.48) and standard deviation of (0.62). In the first field, the field of classroom activity was calculated with an mean of (2054) and a standard deviation of (0.73) To a medium degree. In the second place the field of extracurricular activities came with a mean of (2042) and a standard deviation of (0075) and a medium degree. The researcher attributed this to the need to implement the activities to the requirements may not be available in all schools in addition to the overcrowding of classrooms, especially after the Syrian asylum, which doubled the number of students in some schools and the conversion of part of them to work the two periods which reflected on the time of the course, despite the need to emphasize the activities of class and extracurricular which contribute to the refinement of the talents of students, in addition to academic achievement and to work to review the curricula and educational activities and teaching methods and evaluate the effectiveness of learning in order to develop and raise our status to the desired levels of modern education effective. Because the activities of the students make the school an integrated society, young people are trained on the life of communities and their experiences and experience, and the spirit of the community, and train them on collective leadership and consultation and cooperation and understanding. They also support their personalities with their challenges, problems and responsibilities, as well as help them to appreciate the value of effort and work. The result of this question is consistent with Al-Rashidi's (2015) study, where the degree of activity is medium, while the result of this question is different with the study of Al-Mutairi (2012) where the degree of activity is high.

Question 2: Are there statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the degree of exercise of mathematics teachers for the activities related to the subjects attributed to the school type (public or private) and to gender (male or female)?

- **School type variable:** the means and standard deviations were calculated for the level of mathematics teachers' practice of the activities related to the subjects due to the school type public or private where t-test was applied. Table (6) shows that

Table (6): Means and standard deviations of the degree of mathematics teachers' practice of subject-related activities attributable to the school type, and t-test

Field	Type of school	Number	Mean	Standard deviation	T value	Significance level
Classroom activities	Public	274	2.01	0.92	1.761	*0.045
	Private	59	2.84	0.81		
Extracurricular Activities	Public	274	1.90	1.01	2.142	*0.038
	Private	59	2.50	0.84		
Total score	Public	274	1.95	0.96	2.112	*0.047
	Private	59	2.67	0.78		

The results in Table (6) show that there are statistically significant differences in the degree of mathematics teachers' practice of the activities related to the subjects due to the school type in the total score, based on the calculated T value of (2.112) and the significance level of (0.047). There was also a difference in all the "classroom and extracurricular" fields based on the calculated T value of (1.761) and the level of significance of (0.045) in the classroom activities, while the calculated T value of (2.142) and the level of significance of (0.038) for the favor of the private schools due to the high means.

- **Gender Variable:** The means and standard deviations of the degree of mathematics teachers' practice of subjects related to male and female subjects were calculated and the t-test was applied. Table (7) shows that.

Table (7): Means and standard deviations of the degree of mathematics teachers' practice of subject-related activities attributable to the gender, and t-test

Field	Gender	Number	Mean	Standard deviation	T value	Significance level
Classroom activities	Male	167	2.26	0.81	1.79	*0.042
	Female	166	2.67	0.76		
Extracurricular Activities	Male	167	2.14	0.91	2.20	*0.040
	Female	166	2.57	0.78		
Total score	Male	167	2.20	084	2.18	*0.048
	Female	166	2.62	0.77		

The results in Table (7) indicate that there are statistically significant differences in the degree of mathematics teachers' practice of the activities related to the subjects due to the gender in the total score, based on the calculated T value of (2.18) and the significance level of (0.048). As well as a higher presence in all fields of "classroom and extracurricular" based on the calculated T value of (1.79) and the level of significance of (0.042) in the classroom activities. While the calculated T value of (2.20) and the level of significance of (0.040) where the difference was in favor of females due to the high means. The result is that females are more observant and more fun to practice than men, which makes them more aware of the importance and value of activities in teaching mathematics as demonstrated by the results of secondary school and the results of national tests, and may be due to the nature of the composition of female physical and psychological, making them

more committed, and this result is different with the study of Rashidi (2015) where the results of the study showed that there are no statistical differences in the activity of the activities due to the gender and school type.

As for the school type variable, the differences were in favor of private schools, due to the fact that private schools bear the economic burden of practicing activities compared to public schools. In addition to the possibilities available in private schools that allow the practice of all kinds of educational activities, where public schools are difficult to exercise activities because of the overcrowding of students, which hinders the implementation of activities.

RECOMMENDATIONS

- Educating mathematics teachers about the importance of activities in teaching and training them to use their strategies in the classroom environment, according to the need of the educational situation, through the preparation of workshops, distribution of educational bulletins and holding training courses for them.
- Include classroom and extracurricular activities, within the vocabulary of the teaching methods in the faculties of education, with its characteristics and steps of implementation.
- Training teachers on planning and steps to implement various educational activities.

REFERENCES

Al-Ghamdi, M. (1411H) Effectiveness of Educational Activities in Developing Life Skills in the Hadith Course for the Third Grade Students, Imam Muhammad Bin Saud Islamic University, Riyadh.

Qatish, H. (2011). The extent to which the teachers of the basic stage of school activity in the schools of the Directorate of the North Eastern Badia Education. Al-Aqsa University Journal (Human Sciences Series), 15 (2), pp. 64-92.

Al-Mutairi, A. L. (2013), the degree of the activities of students accompanying the curriculum in the middle stage from the point of view of teachers and their relation to the achievement of their students in Kuwait schools. Najah University Journal of Research, vol. 27 (7), Palestine.

Rayhawi, Q. (2016) A program based on active learning to develop the sense of communication and reasoning of mathematics teachers. Unpublished doctoral thesis. Cairo University. Cairo. Egypt

Ministry of Education (2012) General framework of the mathematics curriculum. Jordan Amman.

Badir, K. M. (2012) Active Learning. Second Edition Amman: Dar Al Masirah.

Majidel, A. & Yafei, F. (2009) Difficulty in learning mathematics for students in the first cycle in basic education in Dhofar from the point of view of mathematics teachers "field study". University of Damascus Journal, 25 (4), pp. 135-178.

Al-Rashidi, D. A. (2015) The degree of primary school teachers' practice in Kuwait for active learning elements from the point of view of mentors and principals. Unpublished Master thesis. Middle East University. Oman. Jordan.

Al Nawashi, Q. (2010), Mathematics for all children and their practical applications, Amman: Dar Al Masirah for Publishing and Distribution.

Shehata, H. (2006) School activity, concept, functions and areas of application. Cairo: Egyptian Lebanese House.

Faour, B. (2012) Active Learning, UNESCO, extracted on 7/10/2018 from http://tarbiyah21.org/new/images/active-learning

Laqani, A. & Odeh, A. J. (1989) Curriculum Planning and Development, Amman: Al Ahlia for Publishing and Distribution.

Alliance education (2006) Best Practices in Teaching Mathematics. Retrieved in10/12/2018 from www.educationalliance.org.

Paulson, D., Faust J (2006). Active Learning for the College Classroom. Retrieved in20/12/2018 from http:/chemistry.calstatea Edu/chem& bio chem./active/main.html

Farooq, Umar (2013) Traditional and Modern Concept of Curriculum in Education, Retrieved from www.studylecturenotes.com,in 12/12/2018.

Pokharel, Tike Ram (2018) Activity Based Mathematics Instruction: Experiences in Addressing the 21-st- Century Skills. Journal of Mathematics Education. Vol.11. No.1 PP46-61.

Yasin, Soylu, Ahmet, Isik (2003) Teaching Mathematics Through Games at First stage of Elementary Education. Journal of Korea Society in Mathematical Education.Vol.7 No..PP 223-234

Yildinm, Gumsel, Ozyilmaz, Guzin (2017) The effect of outdoor learning activities on the development of preschool children. South African Journal of Education, Vol.37.