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The Degree of Constructivism in Teaching Arithmetic Operations to Basic Stage Students from the Point of View of Primary Stage Teachers in Ma'an Governorate

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Abstract
This study aimed at the degree of constructivism in teaching arithmetic operations among primary school students from the point of view of the stage teachers themselves in Ma'an Governorate. For the Directorate of Education in Ma'an Governorate, the necessary data was collected using a questionnaire, and it was applied to the study sample. The results of the study revealed that the study sample's evaluation of the degree of constructivism in teaching arithmetic operations among primary school students from the point of view of stage teachers in Ma'an Governorate, from their point of view, was average, and the researcher recommended holding training courses in constructivism in teaching arithmetic operations among primary school students, and the necessity Encouraging female teachers to obtain advanced training courses in teaching constructivism in teaching arithmetic operations among primary school students in the Ministry of Education.
Keywords: Constructivism, Arithmetic Operations, Basic Stage Teacher, Basic Stage Students.
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INTRODUCTION

The current era is characterized by scientific and technological progress that has led to a huge flow of knowledge and easy access to it, and this has made humanity face many challenges in absorbing the huge amount of knowledge and using it in most areas of life, which required the introduction of reforms to the education system to keep pace with all developments and face all challenges in field of knowledge.

In order to develop learners' abilities to absorb new knowledge and employ it in their lives, educational thought witnessed a transformation in its view of the learning process, as it became focused on the internal factors that affect the learner, especially what is going on in his mind such as his previous knowledge, mental capacity, the way he processes information, his motivation to learn, and patterns of learning. His thinking, his learning style, and his cognitive style, after focusing only on the external factors that affect the learner's learning, most notably the cognitive, after focusing only on the external factors that affect the learner's learning, most notably: the learner's variables (his personality, enthusiasm, reinforcement, ..etc). Etc.), learning environment, curriculum, learning outcomes and other factors (Zaytoun and Zeitoun, 2003).

As the science of mathematics in the present century was largely referred to as being made up of separate branches of geometry, arithmetic analysis is not acceptable, and thus mathematics is seen as a coherent intellectual construct.

The study of mathematics has become based on the concept of the group, and since mathematics and its scientific contents are based on a group of mathematical concepts and problems, which are homogeneous in the form of systems based on relationships and trust, as are the strength of structures, making them complex, which prompts students to memorize examples and questions to me. Thank you 20% of what he hears, and they denounce 40% of what they see.

But if it is by hearing and vision, this percentage increases to 70%, while the percentage increases in the case of students with what they learn through this East, in which the use of teaching tools is required to help students build mathematical knowledge in a meaningful way, so that they can see components and relationships about and systems. Mathematical thinking in a meaningful way, and benefiting from it in building new knowledge and facts, and moving students from the stage of mathematical achievement to the stage of organized mathematical thinking, and through the formation of conceptual systems with mathematical relations between them, through which students can develop and practice this thinking and address the challenges imposed by the technological and information revolution. (Bedouins, 2018).

This transformation looks at the learner as the focus of this educational learning process, and the role of the teacher has become a guide and facilitator for this process, experienced and an expert, and he has sufficient knowledge about educational theories and their applications and the extent of their employment in various teaching methods, including the constructivist theory, which is one of the most popular educational theories and accepted among educators. (Al-Zaanin, 2015).

Thus, the Constructivism Theory appeared, and to clarify the concept of this theory, there is an educational

wisdom that says: “I hear and I forget, I see and I remember, and I act and I understand.” Providing the student with skills and competencies that raise the positive to be able to build his own knowledge, and to be able to retain and employ them in different areas of life, thus creating an individual scientifically, mathematically and technologically, and able to face the challenges and developments of the age (Zaytoon, 2007).

Mathematics remains more than the sum of these branches.” (Abu Zina, 1997) Mathematics is also one of the study subjects in which work is carried out to achieve the goals of the learning and teaching process, through which the individual gets used to the sound thinking that he uses to advance his way of living in life, and to solve his problems. And the interpretation of scientific phenomena, and their exploitation for their benefit through the scientific and practical application of this thinking, for which mathematics is a tool.

Especially since there is a growing interest in this approach, as is the case with many recent projects in the United States that are concerned with its application, which helped in improving learning by changing teachers’ practices. Based on the fact that teaching mathematics is not just about certain behaviors such as knowing laws, facts and definitions, and solving routine problems, but rather it goes beyond teaching the student how to think and organize his thinking in a way that makes him active in his learning, innovating in the knowledge that he generates. (Van de wall, 1994, p).

An introduction to the constructivist theory: "The constructivist theory goes back to ancient historical roots dating back to the era of Socrates, but it crystallized in its current form in the light of the theories and ideas of many theorists, such as: (OnenErdem, Uzel&Gurdal 2011). Many studies have shown the positive practice of teachers of constructivist ideas in achieving the desired goals of the educational process. Therefore, access to the competition of developed countries requires the Lebanese theory, due to its impact on developing the thinking skills necessary to discover and invent knowledge among students, and deepen their thinking abilities. The scientific critic, and the formation of current trends towards learning.

Several recent studies have recommended the use of the principles of constructivist theory in teaching, including Rayan’s study (2011), which recommended training and urging mathematics teachers to employ the Banani approach in teaching, and emphasized primitive ideas and their educational applications in the constructivist education system in teaching, and emphasized constructivist ideas and their educational applications in teaching. The system of teaching and learning mathematics in teacher preparation programs, and the need for teachers to be keen on providing constructive classroom environments.

Gann's study (2010), which recommended conducting a study aimed at recognizing the effectiveness of using the constructivist model in teaching science course to lower grade female students, on developing metacognitive skills and academic achievement.

The mathematical issue is a major component of mathematical knowledge, as it is a situation facing an individual or a group of individuals for which there is no ready-made solution at the time, and in order to judge this situation as a problem for the individual, several conditions must be met, including: Addressing this situation and finding a solution to it. The individual accepts the situations, interacts with him, and strives to achieve it (Abu Zina, 2010).

the study Problem :

The weakness that appears in mathematics has become a clear phenomenon, and it does not need proofs and evidence. He witnessed weakness and deterioration of arithmetic skills through tracking students in schools. It affects the society, as it leads to the low conviction of the learners and the society in the usefulness of education, the absence of the utilitarian aspect of education, and the weakness of the economic aspect (Mohamed and Al-Hauri, 2016).

He mentioned (Badawi, 2003) a question that always arises: Why do we study mathematics? What is the goal that we seek to achieve by studying mathematics? Here we use the term problem solving as a goal that refers to the real justification for teaching mathematics, and it helps in solving many types of problems.

Based on the foregoing, the researcher finds that the teachers of the basic stage have the greatest impact on improving and developing the constructivist skills in teaching arithmetic operations among the students of the basic stage in the educational process of the teachers of the basic stage in the educational field and strengthening the constructivist skills in teaching arithmetic operations among the students of the basic stage.

In light of the foregoing, we noticed that teaching structural skills in teaching arithmetic operations to students of the basic stage seems to be suffering from problems, and then this research problem was determined in three questions, which are as follows:

STUDY QUESTIONS

1. **THE FIRST QUESTION:** What is the degree of constructivism in teaching arithmetic operations among basic stage students from the point of view of basic stage teachers in Ma’an Governorate?
2. **THE SECOND QUESTION:** Are there statistically significant differences at the significance level (α = 0.05) between the response averages of the study sample members about constructivism in teaching arithmetic operations among basic stage students from the point of view of the basic stage teachers in Ma’an

Governorate due to the variable (years of experience, Qualification) ?

STUDY IMPORTANCE

The importance of the study stems from the role that the arithmetic operations are expected to play after their implementation. This importance appears in the following points:

1. Provide those in charge of curriculum development and mathematics teachers with a procedural model by setting how to use it and how to apply it.
2. Knowing the extent to which students benefit from the use of arithmetic operations.
3. Providing teachers with plans on how to teach the skill of performing arithmetic operations on the correct numbers and using them in solving life problems when required for the basic stage.
4. The current study may be an incentive for researchers to conduct new studies using the tools of the current study.

PRACTICAL IMPORTANCE

The principles of constructivist theory, and do they apply them correctly in their classrooms, or not?

The results of this study may benefit teachers with their knowledge of measuring the degree of their knowledge and application, in addition to the possibility of benefiting from supervisors, educational leaders, and those concerned with educational reform movements by providing them with information about the degree of application of the principles of constructivist theory within schools, which helps them to take appropriate decisions that seek to improve the application of the principles of this theory that are in the interest of the student It produces a positive learner.

STUDY LIMITS

This study is carried out within the following limits:

HUMAN LIMITS: This study was applied to the first semester (2021/2022).

SPATIAL LIMITS: This study was limited to Ma'an schools for the basic stage of the Directorate of Education in Ma'an Governorate.

TEMPORAL LIMITS: This study was applied in the first semester (2022/2021).

OBJECTIVE LIMITS: This study dealt with the degree of constructivism in teaching arithmetic operations among students of the basic stage from the point of view of the stage teachers in Ma'an Governorate, and they used a questionnaire characterized by honesty and a coefficient of stability.

TERMINOLOGY OF STUDY:

The study adopts the following definitions of its terms:

CONSTRUCTIVIST THEORY: The set of procedures, activities, methods and methods used by the teacher that are based on the constructivist theory, and are measured by the teacher's ratings on the tool items prepared for the purposes of the study and related to the principles of constructivist theory. Knowledge (Ayyash and Al-Absi, 2013).

THE CONSTRUCTIVIST LEARNING MODEL: Zeitoun (2007) defined the constructivist learning model as: “a teaching model based on the principles of constructivist learning through which students are helped to build their knowledge through groups practicing a new activity related to that information with the aim of enriching that information, and using it in situations New".

THE LOWER BASIC STAGE: It is the educational stage that starts from the first basic grade and extends to the end of the fourth basic grade. That is, it includes the first, second, third, and fourth grades (Afouneh, 2014).

THE CONSTRUCTIVIST THEORY: a theory based on the consideration that learning does not take place through the automatic transfer of knowledge from the teacher to the learner, but rather by constructing the meaning of what he learns by himself based on his previous experiences and knowledge (Al-Wahr, 2002).

The researcher defines it procedurally as the first compulsory educational stage that the student passes, and its duration is four years, starting from the age of (6-10 years), in which the level of the student is expressed.

THEORETICAL FRAMEWORK AND PREVIOUS STUDIES

The first axis: the constructivist theory, its concept, its importance, the role of the teacher and the learner in teaching.

This chapter deals with the most prominent theorists of constructivism, its nature, principles and assumptions, constructivism in teaching, characteristics of the constructivist learning environment, the roles of the constructivist teacher and learner, and some teaching strategies that stem from constructivism. It also deals with the concept of basic education and the educational system, in addition to the previous studies that dealt with This topic.

THE TEACHER AND THE LEARNER IN A CONSTRUCTIVIST LEARNING ENVIRONMENT:

Several studies have reported an analysis of the specifications of the constructivist learning environment, and these specifications contribute to the shift from focusing on the teacher to focusing on the learner, making it more motivated and more compatible with the diversity of learning environments, as well as supporting critical thinking and inquiry. Among the most prominent characteristics of the constructivist learning environment is what was mentioned (Al-Otaibi, 2008):

The learner is active in linking the new knowledge with the knowledge in his possession, and examines the multiple visions; Because this examination is necessary and extremely valuable, as the learner collects these insights and integrates them into a complete vision, and the learner controls his learning process and its rate when negotiating with his classmates. Providing real learning environments related to real-world problems in which the learner applies what he has learned and consolidates Cooperative learning, not competitive learning, and it emphasizes building knowledge, that is, ideas are not placed in the hands of students, but they must build their own concepts, and that knowledge is generated for them through their own thinking and activity (1991, Wheatley).

The research conducted by Piaget in the cognitive growth and development of the individual is the basis of the constructivist philosophy. Piaget developed an integrated theory about cognitive development in children, and this theory has two main interrelated parts called the first logical determinism, while the second part is called constructivism, which relates to the issue of building knowledge, in which Piaget clarified the principle of building knowledge, which means that the individual builds his knowledge himself, not receive it. Negatively from others (Daoud, 2003).

The arithmetic operations were characterized by several characteristics, among which were mentioned: (Al-Akka, 2014):

- It constitutes a method and way of thinking, which leads to the logical reasoning of the proofs, and the validity of the hypotheses to some extent.
- the universality of its language; It is unified and accurate in its symbols and expressions in everything that leads to the ease of intellectual communication.
- Sequential, sequential and cumulative in numbers, forms and ideas.

Also, the constructivist theory tended to focus on the internal factors that affect the learning process of students that occur inside their minds while they face educational situations, such as: prior knowledge, abilities and motivation to learn. It also sees that the process of acquiring knowledge is an active process and it will pass, during which modifications are made in the cognitive structures of students through their self-regulation of new knowledge in line with their previous knowledge (Al-Khalidi, 2007).

The International Dictionary of Education defines it as “a vision in learning theory that the child is active in building patterns of thinking, and the quality of education depends on the prevailing educational system, including its contents and various methods, and achieving these goals with a set of foundations, including science that bears the greatest burden in transforming those goals into A tangible practical reality (Abu Odeh, 2006)

On this basis, it becomes clear that the progress of the name or its backwardness depends on the presence of the teacher who is competent in number and soundly prepared and who is able to carry out his responsibilities in solving a changing world. Fields, including the field of knowledge in general, and education in particular, so he said of the requirements of this rapid development and the successive changes in information and knowledge composite developments in the fields of science and knowledge (Al-Kandari and Farah, 2001).

The importance of building individuals is a philosophical basis for a number of methods used in the educational process, and among these philosophies: the constructivist philosophy that emerged in the modern era, and formed a revolution in human and social studies and methods of dealing with knowledge, and its impact extended significantly to the field of education, which contributed to the emergence of the theory Constructive learning, which brought about a qualitative change in the educational literature, affected all parties and forms of the educational process; From students, teachers, curricula, and teaching strategies (Al Naqa and Eid, 2009).

Between research and educational reform efforts, the transformation of the Teaching Union The constructivist theory with all its models returns to the philosophy of constructivist thought, which revolved around an intellectual approach that addresses the formation of information and integrates technology and technology. Education is considered one of the fields most affected by the constructivist philosophy with its cognitive and social currents. It considers the learner as an active person who builds his knowledge through his interaction with information and with the experiences of others (Al-Azzawi and Abdel-Razek, 2015).

HISTORICAL ROOTS OF CONSTRUCTIVIST THEORY:

The constructivist theory has gained great popularity in recent years, as the trends towards constructivist theory can be observed through the works of:

Jerome Brunner: Born in 1915, Brunner is an evolutionary psychologist who worked in social psychology.

Brunner was influenced by Piaget's ideas on epistemology; Where he tried to find out how the individual acquires scientific concepts, and the ideas of John Dewey and Gestalttin who advocated the idea of learning by insight; That is, reorganizing the elements of the educational situation, and discovering new relationships between these elements (Khawaldeh, 2013).

Robert Gagnet: Gagnet came up with the idea of hierarchical learning, and that knowledge is cumulative, and that learning the concept of what is a skill requires acquiring mastery of a partial skill necessary in advance. Necessary to achieve the main goal, it starts with the basic skills until it reaches the final goal and achieves learning (Ibrahim, 2012).

Vygotsky: Vygotsky is a psychologist, born in Belarus in 1896 AD. He introduced a sociocultural theory and the idea of marginal growth. He sees that the individual has two levels of development or growth, the lowest individual level; It is the child's independent performance that the child knows and works alone, and the higher social level that the child can reach with help, and between these two levels there is the level of marginal growth, and that the success of the individual is seen as a reflection of the success of culture, and therefore Vygotsky emphasized that development mainly applies to mental development such as Thinking, language, and thought processes, and that these abilities develop through social interactions (Al-Dawahidi, 2006).

There are several teaching strategies that stem from constructivism, including:

1-PROBLEM CENTERED LEARNING STRATEGY.

1- Grayson Wheatly is one of the biggest proponents of modern constructivism, as it is based on the idea that the learner builds an understanding of what he learns by confronting a problem that he must reach a solution to, and this strategy consists of basic stages which are tasks, cooperative groups and participation Where the teacher puts a task or a problem in front of the class, and in the participation stage, each group presents the solutions it reached to the class, and it is possible that there may be a difference in the solutions in the solutions reached by each group, and the discussions revolve between them until an agreement is reached between them (Al-Yaqoubi). , 2010).

2- THE LEARNING CYCLE.

It was built by (Atkin & Karplus, 1962) and this strategy is based on the teaching process according to the constructivist theory. the conceptual expansion stage; It is based on the application and generalization of the concept in new situations (Al-Najdi et al., 2005).

3- POSNER'S STRATEGY FOR CONCEPTUAL CHANGE

Concepts is a strategy based on the idea of replacing misconceptions in the learner's mind with correct scientific concepts, by relying on a number of strategies; It is to bring about integration between the new and the existing concepts of the learner through the teacher’s explanation, discussion or other presentations to integrate the new knowledge with the previous knowledge, that is, linking the new concepts with previous experiences that are meaningful to them and the ability to apply these concepts on the ground (Al-Biyari, 2012).

PREVIOUS STUDIES

Rayan's study (2011) aimed to identify the extent to which mathematics teachers in the Hebron Education Directorate practice constructivist teaching and its relationship to the beliefs of their academic effectiveness. The study sample consisted of (206) male and female teachers, and to achieve the purposes of the study, the researcher used two questionnaires, the first to measure teachers’ practice of constructivist teaching, and the second to measure their teaching effectiveness. Mathematics for constructivist teaching according to the different study variables (gender, experience, qualification, educational stage), in which there was a positive relationship between the degree to which mathematics teachers practice constructivist teaching and the beliefs of their teaching effectiveness.

As for Al-Namrawi’s study (2011), it aimed to reveal the effectiveness of teachers’ application of the school’s social constructivist perspective in teaching mathematics, and the role of this application in developing mathematical communication skills for sixth-grade students. Ten teachers who study in the sixth grade participated in this program, as these teachers and their students were observed, before and during the teachers' employment of the school's social constructivist tendencies in teaching mathematics. The results of the study showed a clear development in the teachers’ application of the school’s social constructivism orientation, which was represented by facilitating the educational experience, scaffolding the learning process, and the emergence of an evolution in students’ use of mathematical communication skills represented in reading, writing and translation activities. The study recommended the necessity of activating the teaching methods that It is consistent with the school's social constructivist orientations in the teaching of mathematics.

Also, Fast &Hankes (2010, Fast &Hankes) conducted an empirical study in the United States of America, which aimed to investigate the effect of an educational program based on integrating strategies for constructivist theory through teaching mathematics content to student teachers enrolled at the University of Wisconsin Oshkosh. The study sample consisted of (63). Male and female students, they were divided into two groups, the first was a control group who studied mathematics in the traditional way, and the second was an experimental

one who studied according to the constructivist theory, and a questionnaire and multiple test were used as tools for this study. The results of the study showed that there were statistically significant differences in favor of the experimental group in achieving the main course objectives, developing their abilities to overcome misconceptions, and negative experiences towards mathematics, as the experimental group showed positive attitudes towards mathematics and teaching methods based on Lebanese content.

Shivani (Shirvani, 2009) conducted a study to reveal the compatibility of the classroom environment with the constructivist theory of learning, as (49) undergraduate student teachers in the southern United States were trained to apply mathematics lessons for the basic stage according to the constructivist model, and the researcher used To achieve the purposes of the study note cards, the results showed the presence of positive practices among student teachers in providing a constructive learning environment, in four areas, namely: global knowledge, speaking, expressing opinion, accepting scientific material, negotiation and social communication, and the results did not show significant differences in the two areas of control, learning how You learn, the importance of mathematics and awareness of its life applications.

While the aim of Al-Thaqafi's study (2008) was to reveal the reality of mathematics teachers' knowledge, acceptance and ability of the constructivist learning model, the study sample consisted of (110) mathematics teachers in the city of Taif, and the researcher used a questionnaire to achieve the purposes of the study. The results showed that mathematics teachers' knowledge and acceptance of the constructivist learning model was large, while the results showed that there were no statistically significant differences in the degree of mathematics teachers' acceptance of the constructivist learning model due to the variables of academic qualification, specialization, number of years of experience, and the class taught.

The study (2008, Patchen& Cox) aimed to know the impact of constructivist theory compared to traditional science teaching methods in developing theoretical knowledge among learners. constructivism, and others that present the same knowledge through traditional methods, and after researchers watched and analyzed many educational situations, the results indicated that students who received scientific knowledge through constructivism were better at achieving than their peers who received the same knowledge through traditional methods.

SUMMARY OF PREVIOUS STUDIES AND THE LOCATION OF THE CURRENT STUDY, INCLUDING:

It is true from the previous presentation the importance of constructivist theory in general and its orientation in the educational process, as it is advised to diversify the studies that dealt with the constructivist learning model and prove the positive time in the educational process, while it is advised that there are no studies that dealt with the population and sample of the current study or linked between its variables, which distinguishes the current study, This justifies conducting the current study.

STUDY METHODOLOGY AND PROCEDURES:

The study relied on the descriptive survey method, as a questionnaire was prepared and developed as a main tool for collecting data and information from the study sample.

STUDY COMMUNITY:

The study population consisted of all the primary stage teachers of the Directorate of Education, Ma'an Directorate, for the academic year 2022/2021, according to the statistics of Ma'an Governorate.

THE STUDY SAMPLE:

The sample consisted of (100) female teachers who were chosen by the stratified random method, where the society is divided into layers in which it was taken into account to represent the various variables of the study. The following tables show the sample of the study.

TABLE (1): STUDY SAMPLE ACCORDING TO STUDY VARIABLES

Variable	Category	Frequency	Percentage
Years of Experience	More than 10 years	38	38%
	5-10 years	41	41%
	Less than 5 years	21	21%
	Total	100	100.0%
Qualification	Bachelor	73	73%
	Post Graduate	27	27%
	Total	100	100.0%

Study tool:

The researcher used the questionnaire to identify the degree of constructivism in teaching arithmetic operations

among the students of the basic stage from the point of view of the basic stage teachers in Ma'an Governorate.

Validity of the tool:

The researcher used honesty for the validity of the tool, as the researcher will distribute the questionnaire in its initial form to arbitrators from faculty members in various disciplines; With the aim of identifying the suitability of the paragraphs to the scale, the soundness of their formulation and the clarity of their meanings from the linguistic point of view, and making any amendment and addition to the paragraphs that will receive a percentage of (80%) of the arbitrators or more.

TABLE (2): CORRELATION COEFFICIENT OF THE STUDY TOOL ITEMS WITH THE TOTAL SCORE

NO.	The application of constructivism in teaching	correlation coefficient	SIG
1	I use as a teacher the skills that allow the learner to express himself	83.0	0.000
2	I accept and encourage the learner's self.	74.0	0.000
3	I begin the lesson by posing a problem related to the learners	94.0	0.000
4	Invite learners to formulate possible explanations for the problem.	92.0	0.000
5	Instruct learners to practice scientific inquiry to solve problems	68.0	0.000
6	Learning objectives are proportional to the needs and interests of learners.	83.0	0.000
7	The role of the teacher is reduced compared to the roles of the learners	85.0	0.000
8	Prior knowledge of the learner is a prerequisite for constructing meaningful learning	98.0	0.000
9	Learning is concerned with the emotional side of the learner	92.0	0.000
10	The teacher represents one of the sources of learning, not the only one.	86.0	0.000
NO.	**Constructivism in the teaching of arithmetic operations**	**stability coefficient**	**SIG**
11	I strive to develop students' positive attitudes towards mathematics	84.0	0.000
12	I encourage students to build their own knowledge based on connecting their new experiences with their past.	84.0	0.000
13	I accept students' mistakes and consider them a source of their learning	68.0	0.000
14	Give the students enough time to think about the questions I ask.	77.0	0.000
15	Use the students' questions and ideas to guide the course of the lesson	86.0	0.000
16	Types of classroom activities according to the diversity of interests, abilities and needs of students.	86.0	0.000
17	Allow multiple points of view on the issues raised in the lesson	81.84	0.000
18	Encourage students to provide explanations and proofs for the math problems they solve	77.0	0.000
19	Give students opportunities to present their ideas and suggestions	86.0	0.000
20	Give students opportunities to work collaboratively and learn in groups.	81.0	0.000

Table No. (2) shows that the correlation values for constructivist items in teaching ranged between (68.0-98.0) and shows that teaching arithmetic operations ranged between (68.0-86.0) and these were statistically significant values, and this indicates a degree of internal consistency sincerity on the Paragraphs on the scale

Table No. (3) shows the values of the Pearson correlation coefficient; Between the areas of the study tool and the total score of the tool, as shown in the following table:

TABLE (3): MATRIX OF CORRELATION COEFFICIENTS BETWEEN THE AXES AND THE TOTAL SCORE

Field	Constructivism in teaching	Teaching arithmetic operations	the scale as a whole
Constructivism in teaching	**1**	**77.0**	**86.0**
Teaching arithmetic operations		**1**	**81.0**
the scale as a whole			**1**

It is noticed from Table (3) that there are high and statistically significant correlation coefficients at (α = 0.05) between the two axes with the total score of the scale ranging (81.0-86.0), which indicates a degree of internal consistency between the two axes and the total score on the scale.

TOOL RELIABILITY

The internal Reliability of the resolution was measured by (Cronbach Alpha) coefficient and the table below shows these parameters.

TABLE (4) :CRONBACH'S INTERNAL CONSISTENCY COEFFICIENT ALPHA

Scale	internal consistency	Items NO
Constructivism in teaching	.864	10
Teaching arithmetic operations	.835	10
the scale as a whole	.842	20

It is clear from the table that these values are suitable for the purposes of this study, as Cronbach's alpha coefficient is between (.835-.864).

PRESENTATION AND DISCUSSION OF THE STUDY RESULTS AND RECOMMENDATIONS

RESULTS

RESULTS RELATED TO THE FIRST QUESTION: WHAT IS THE DEGREE OF CONSTRUCTIVISM IN TEACHING ARITHMETIC OPERATIONS AMONG BASIC STAGE STUDENTS FROM THE POINT OF VIEW OF BASIC STAGE TEACHERS IN MA'AN GOVERNORATE?

To answer this question, the arithmetic averages and standard deviations of constructivism were calculated in the teaching of arithmetic operations among basic stage students from the point of view of the basic stage teachers in Ma'an Governorate.

FIRST: CONSTRUCTIVISM IN TEACHING

TABLE (5): ARITHMETIC AVERAGES AND STANDARD DEVIATIONS OF CONSTRUCTIVISM IN TEACHING ARITHMETIC OPERATIONS, ARRANGED IN DESCENDING ORDER ACCORDING TO ARITHMETIC AVERAGES

Rank	NO.	Items	Arithmetic Mean	Standard Deviation	Level
1	1	I use as a teacher the skills that allow the learner to express himself	4.09	1.29	High
2	2	I accept and encourage the learner's self.	3.90	1.29	High
3	3	I begin the lesson by posing a problem related to the learners	3.75	1.36	High
4	4	Invite learners to formulate possible explanations for the problem.	3.52	1.37	Average
5	5	Instruct learners to practice scientific inquiry to solve problems	3.51	1.37	Average
6	6	Learning objectives are proportional to the needs and interests of learners.	3.41	1.29	Average
7	7	The role of the teacher is reduced compared to the roles of the learners	3.39	1.38	Average
8	8	Prior knowledge of the learner is a prerequisite for constructing meaningful learning	3.36	1.25	Average
9	9	Learning is concerned with the emotional side of the learner	3.33	1.36	Average
10	10	The teacher represents one of the sources of learning, not the only one.	3.31	1.36	Average
		Constructivism in teaching as a whole	3.35	0.52	Average

Table (5) shows that the arithmetic averages ranged between (3.31-4.09), where paragraph No. (1) which states “I use as a parameter the skills that allow the learner to express himself” came in the first place with an average of (4.09), and the paragraph came No. (10), which states that "the teacher represents one of the sources of learning and not the only source" in the last rank, with an average of (3.31), and the arithmetic mean of the constructivist axis in teaching as a whole was (3.55).

SECOND: TEACHING ARITHMETIC OPERATIONS

TABLE (6): ARITHMETIC AVERAGES AND STANDARD DEVIATIONS FOR TEACHING ARITHMETIC OPERATIONS ARRANGED IN DESCENDING ORDER ACCORDING TO ARITHMETIC MEANS

Rank	NO.	Items	Arithmetic Mean	Standard Deviation	Level
1	11	I strive to develop students' positive attitudes towards mathematics	3.88	1.32	High
2	12	I encourage students to build their own knowledge based on connecting their new experiences with their past.	3.86	1.39	High
3	13	I accept students' mistakes and consider them a source of their learning	3.85	1.45	High
4	14	Give the students enough time to think about the questions I ask.	3.69	1.30	High
5	15	Use the students' questions and ideas to guide the course of the lesson	3.54	1.59	Average
6	16	Types of classroom activities according to the diversity of interests, abilities and needs of students.	3.42	1.39	Average
7	17	Allow multiple points of view on the issues raised in the lesson	3.41	1.33	Average
8	18	Encourage students to provide explanations and proofs for the math problems they solve	3.22	1.33	Average
9	19	Give students opportunities to present their ideas and suggestions	3.20	1.40	Average
10	20	Give students opportunities to work collaboratively and learn in groups.	3.18	1.29	Average
		Teaching arithmetic operations as a whole	3.51	0.51	Average

Table (6) shows that the arithmetic averages ranged between (3.18-3.88), where paragraph No. (11) states, "I am keen to develop students' positive attitudes towards mathematics" in the first place, with an average of (3.88), and paragraph No. (20) which states, "Give students opportunities for collaborative work and group learning." In the last rank, with an arithmetic mean of (3.18), and the arithmetic mean of the axis of teaching arithmetic operations as a whole was (3.51).

THE SECOND QUESTION: ARE THERE STATISTICALLY SIGNIFICANT DIFFERENCES AT THE SIGNIFICANCE LEVEL (A = 0.05) BETWEEN THE RESPONSE AVERAGES OF THE STUDY SAMPLE MEMBERS ABOUT CONSTRUCTIVISM IN TEACHING ARITHMETIC OPERATIONS AMONG BASIC STAGE STUDENTS FROM THE POINT OF VIEW OF THE BASIC STAGE TEACHERS IN MA'AN GOVERNORATE DUE TO THE VARIABLE (YEARS OF EXPERIENCE, ACADEMIC QUALIFICATION)?

In order to answer this question, the arithmetic averages and standard deviations of the responses of the study sample members about constructivism in teaching arithmetic operations among basic stage students were calculated from the point of view of the basic stage teachers in Ma'an Governorate according to the variables (years of experience, academic qualification), and the tables below illustrate this.

TABLE (7): ARITHMETIC AVERAGES AND STANDARD DEVIATIONS OF THE EFFECT OF (, YEARS OF EXPERIENCE, EDUCATIONAL QUALIFICATION) ON CONSTRUCTIVISM IN TEACHING ARITHMETIC OPERATIONS

Variable	Category	NO.	Arithmetic Mean	Standard Deviation
Years of Experience	More than 10 years	38	3.52	0.44
	5-10 years	41	3.44	0.38
	Less than 5 years	21	3.47	0.54
	Total	100	3.51	0.42
Qualification	Bachelor	73	3.51	0.39
	Post Graduate	27	3.54	0.50
	Total	100	3.51	0.42

It is noticed from Table (7) that there are apparent differences between the average responses of the study sample members to the total degree about constructivism in teaching arithmetic operations among basic stage students from the point of view of the basic stage teachers in Ma'an Governorate, according to the variables

(years of experience, academic qualification), and to show the differences The statistic between the arithmetic averages The two-way analysis of variance test (Way ANOVA-2) was used on the total score of the scale and the table (7) shows the results of that.

TABLE (8): RESULTS OF THE TRIPLE VARIANCE ANALYSIS (WAY ANOVA2) FOR THE EFFECT OF (YEARS OF EXPERIENCE, ACADEMIC QUALIFICATION) ON CONSTRUCTIVISM IN TEACHING ARITHMETIC OPERATIONS FOR BASIC STAGE STUDENTS

Contrast Source	Squares Sum	Freedom Degree	Squares Mean	F Value	SIG.
Years of Experience	**.634**	**2**	**.302**	**1.629**	**.159**
Qualification	**.324**	**2**	**.421**	**.974**	**.357**
Error	**27.322**	**95**	**.173**		
Total	**27.902**	**99**			

* Statistically significant at the level ($\alpha = 0.05$)

There are no statistically significant differences at the level of statistical significance (0.05) between the average estimates of the sample members on the total degree about constructivism in teaching arithmetic operations among basic stage students from the point of view of the basic stage teachers in Ma'an Governorate according to the variable years of experience.

There are no statistically significant differences at the level of statistical significance (0.05) between the average estimates of the sample members on the total degree about constructivism in teaching arithmetic operations among basic stage students from the point of view of the basic stage teachers in Ma'an Governorate according to the educational qualification variable.

RECOMMENDATIONS

1. The necessity of preparing and presenting periodic training courses for the constructivist teachers in teaching arithmetic operations for the students of the basic stage from the point of view of the stage teachers.
2. Paying attention to the training of female teachers on the skills of teaching arithmetic, dealing with the educational site of the institution, before starting to teach them through it, and before engaging in work to deal with its tools and interact with each other.
3. The necessity of linking teachers' job performance evaluation to attending training
4. courses specialized in teaching constructivism
5. Paying attention to the training of the basic stage teachers on the skills of teaching arithmetic operations before they start their involvement in the labor market.
6. Developing educational websites on the Internet to teach construction that can provide complete educational services remotely.

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