The Effective of an Educational- learning program according to learning anchors in acquiring mathematical concepts for fifth grade female students

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Abstract:

The objective of the current research is to identify" The Effective of an Educational- learning program according to learning anchors in acquiring mathematical concepts for fifth grade female students" ,to verify the goal of the research, the following zero hypothesis was developed : (there is no statistically significant difference at the level of significance (0.05) between the average grades of students of the experimental group who will study according to the educational - learning program and the average grades of students of the control group who study according to the usual method of teaching in the dimensional test in the acquisition of mathematical concepts)

The experiment was applied to a sample of 55 students from the school of Hatem al-Taie Primary School of the Directorate of Education Baghdad Rusafa first, by(26) students in the experimental group and (29) students in the control group, prepared a test to acquire mathematical concepts levels (definition , distinction, Application) consisting of 57 paragraphs of the type of multiple choice and was verified truthfulness and stability and characteristics of psychometric and showed the results using statistical analysis superiority of the students of the experimental group who studied the educational program learning according to the learning reporters on the students of the control group who studied in the usual way in the test of the acquisition of concepts and in the light of these results were reached a number of conclusions and recommendations .

Keywords: (Educational-learning program, learning anchors, acquisition of mathematical concepts).

فاعلية برنامج تعليمي تعليمي وفق أسس التعلم في اكتساب المفاهيم الرياضية لطالبات الصف الخامس

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الملخص:

الهدف من البحث الحالي هو تحديد "فاعلية برنامج تعليمي تعليمي وفق أسس التعلم في اكتساب المفاهيم الرياضية لطالبات الصف الخامس" ، للتحقق من هدف البحث ، تم وضع الفرضية الصفرية التالية: (هناك لا يوجد فرق ذو دلالة إحصائية عند مستوى الدلالة (0.05) بين متوسط درجات طلاب المجموعة التجريبية الذين سيدرسون حسب البرنامج التعليمي التعليمي ومتوسط درجات طلاب المجموعة الضابطة الذين يدرسون بالطريقة المعتادة التدريس في الاختبار البعدي في اكتساب المفاهيم الرياضية)

طبقت التجربة على عينة مكونة من 55 طالبا من مدرسة حاتم الطائي الابتدائية التابعة لمديرية تربية بغداد الرصافة اولا بواقع (26) طالبا في المجموعة التجريبية و (29) طالبا في المجموعة الضابطة اعدوا اختبار لاكتساب مستويات المفاهيم الرياضية (تعريف ، تمييز ، تطبيق) مكون من 57 فقرة من نوع الاختيار من متعدد وتم التحقق من صدقها وثباتها وخصائص القياس النفسي وأظهرت النتائج باستخدام التحليل الإحصائي تفوق طلاب المجموعة التجريبية الذين درسوا. تعلم البرنامج التربوي وفقًا لمراسلي التعلم على طلاب المجموعة الضابطة الذين درسوا بالطريقة المعتادة في اختبار اكتساب المفاهيم وفي ضوء هذه النتائج تم التوصل إلى عدد من الاستنتاجات والتوصيات.

الكلمات المفتاحية: (برنامج التعلم التربوي ، الارتكازات التعليمية ، اكتساب المفاهيم الرياضية).

Research problem

Some researchers believe that mathematics is one of the most difficult subjects to teach and learn because of its logical sequence and abstraction of concepts and relationships and the accumulation of their subjects with court structures and difficult to reach a certain level without going through the levels preceding it, which increases the difficulty of teaching mathematics and learning (Abu Zeina , 1996: 132), and the concepts represent the basic building block on which mathematical knowledge is built

And from the observations of the two researchers resulting from the distribution of the questionnaire is open to a number of teachers and teachers of mathematics to know the extent of their students acquire mathematical concepts, the results of the questionnaire showed that (85%) the dependence of most teachers on the method of Direct presentation of information in the form of examples.

As well as the two researchers briefed on the results of many studies and research in the field of methods of teaching mathematics, which indicated that students face difficulty in acquiring mathematical concepts, which leads to not understand them and therefore not entrenched in their memory , The study (Hassan,2014) while the study (al-karkhi,2016) (AL-ghanimawi,2020) conducted at this stage indicated the existence of weakness in the fifth grade primary students and here the problem of the current research highlights the need to help learners to overcome the problem of idle knowledge by making learners engaged in educational tasks in collaborative environments through a learning the learner's mind and create a learning environment that harmonizes with contemporary changes to learn concepts Therefore, the problem of the current research is the following question: "**What is The Effective of an Educational- learning program according to learning anchors in acquiring mathematical concepts for fifth grade female students?**"

Research Importance

Mathematics is one of the mainstays of any scientific progress, and one of the most important and vital school materials because it contains concepts and skills that help learners to think properly to face different situations, as it occupies a prominent place among other school materials for several considerations, the most important of which is that its study contributes to the development of And harmonic, namely (concepts, relationships, algorithms, strategies and methods of solving the problem" (Afaneh et al,2012: 88)

The scientific and technological development is parallel to the development of modern educational trends, methods, strategies, models and methods in the educational process, and the most prominent result of Science in the development of the educational process from the use of modern programs and technologies in education (Hayek and Suhaib, 2010: 68)

And modern educational trends emphasize that it is necessary to follow modern teaching programs or methods that raise the attention of learners in the early stages of study such as kindergarten and the first years of the primary stages, and the correspondence of learning from the contemporary educational trends defined as " theory aims to overcome the problems of idle knowledge by creating a directed environment aimed:

1- Organize information and fix it in long-term memory where information becomes associated with learning situations.

2- The educational program helps to choose the appropriate educational activities that contribute to the acquisition of mathematical concepts.

3- May contribute to the benefit of students at all levels of the educational program learning, according to their capabilities.

4- The absence of a local study dealt with this research (according to the researchers knowledge) as there has never been a local study educational learning program according to the learning reporters, which gives importance to the current study.

Research Objective

Knowledge of the effectiveness of the educational – learning program in the acquisition of mathematical concepts in the students of the fifth grade primary

Research Hypotheses

There is no statistically significant difference at the level of significance (0.05) between the average scores of students of the experimental group who will study according to the educational-learning program and the average scores of students of the control group who study according to the usual method of teaching in the dimensional test in the acquisition of mathematical concepts.

Research Limits

1-Students of the fifth grade in primary schools in the province of Baghdad for the academic year (2020-2021)

2-Topics of mathematics book to be taught to students of the fifth grade primary in Iraq for the academic year 2020-2021.

3- Levels of acquisition of mathematical concepts (definition of the concept , characterization of the concept , application of the concept) .

Item Determination

1- Educational -learning program

Definition (Al-samarai, 1988): an integrated system of knowledge ,intellectual skills, processes, experiences and appropriate methods to achieve the goals of the educational process (Al-samarai, 1988: 13)

Procedural definition: A set of information and experiences and educational procedures-learning according to the learning anchors to achieve educational goals for the acquisition of mathematical concepts exposed to the student in the fifth grade primary.

2- **Anchored instruction-**

Definition (Yihshy d), 1997) as: is a new teaching theory that goes according to the curriculum of the constructivist school, with the help of interactive video discs and computer technologies.it represents situations from everyday life in a narrative manner and its goal is to provide an enriching environment that is interesting for discussion and the core of real life and real tasks that help students in enhancing their skills in problem solving. (yihshyu,1997;6).

Procedural definition: is the theory adopted in this research, which focuses on what will be built educational learning program on the basis of its principles, philosophical foundations, and educational perspectives, and measure its effectiveness in acquiring concepts acquiring mathematical concepts among the students of the fifth primary

3-Mathematical concept: defined by both

Definition (Merill ,1977): a set of perceptual objects or events that can be classified with each other on the basis of common and distinctive characteristics, and may be referred to as or as a special symbol(Merill ,1977:22)

Procedural definition: any term, word or symbol that carries a meaning or a mathematical significance characterized by common characteristics and qualities deduced from similar things contained in the textbook sample experiment for the fifth grade primary

Concept acquisition: defined by both

Definition (Darwaza ,1995) : the ability of the learner to define the concept and apply it to new educational situations and discover the critical characteristics of it and give examples. (Darwaza ,1995: 14-15)

Procedural definition: the ability of students of the research sample to define the concept and distinguish between examples that belong to the concept and examples that do not belong to the concept and the application of the concept in new mathematical situations and measured procedurally test prepared by the researcher for this purpose.

Theoretical feedback

Anchored instruction

This theory falls within the social constructivist trend of solving the problem in a cooperative way , constructivism is a broad trend that falls under

the guarantee of many theories and his philosophy indicates that education is an effective or active process of building knowledge, Therefore, cognitive constructivism is different from behaviorism , which asserts that education is a conditional process and that the mind is a dark box that can not see what is inside it , while in contrast to that constructivism , it usually describes the learner as (centered on learning)because the learner does exactly and control and actively builds knowledge, and is encouraged to develop metacognitive processes, and this is based on the theory of learning anchors, the learner is actively engaged in critical thinking to solve problems represented by the story (anchor).(yishyu&hsinm,1997:6)

Learning anchors aims to help learners to overcome the problem of ineffective knowledge by making learners engrossed in educational tasks, novice learners when they are engaged in the phenomenon of interest will be able to dive wells of new knowledge and delve into them, learning anchors are in complex environments to solve problems called the label (micro-contexts) that enable learners to discover the problem from , And learning anchors so-called cognitive apprenticeship (Cognitive apprenticeship) and original tasks (Authentic tasks).

Assumptions underlying the learning Anchored instruction

The cognitive and technical group presented a set of assumptions that reflect the features of Education established in detail as a theory of cognitive learning, and are represented in the following points:

1. The teaching is designed according to the idea of "anchoring or anchoring "and the idea of anchoring is a type of case study.
2. Curricula should provide opportunities for learners to discover by providing multiple opportunities to discover and investigate information and the learner to discover it himself.
3. Developing the mental abilities of learners by facing them with real problems the established education is an input to help learners solve complex real problems facing them in the environment to challenge their abilities to make more attempts to reach the solution of those problems.
4. Tribal knowledge is a prerequisite for building the learning process and the interaction between tribal knowledge and new knowledge is one of the most important components of the meaningful learning process. (ziton,1990: 90)

Requirements for the successful design of learning facilities:

(McCarty,1989 etc) stated seven factors to guide the design of established education:

1. Choose the right anchor: this includes the determination of educational goals based on any anchor court is determined that enables it to work in a special group of learners.
2. Developing common experiences about the anchor: this means that learners are given the opportunity to see the sections or parts of the anchor, understand and organize information and improve their experience.
3. -Extension of the anchor: if one anchor is not useful or sufficient to achieve the educational goal, use an additional anchor to help learners better understand the subject.
4. Using knowledge as a tool: when learners acquire knowledge it is very important to allow them to understand how to use that knowledge together to give learners the necessary guidance to apply what they use .
5. Teaching or teaching using the anchor: teachers have a need to consciously link the anchor to educational goals and that increase the ability of learners to apply what they use in that anchor so that their learning is objective.
6. Anchor integration: learners should be able to use their true knowledge and skills when learning from anchor way and this makes them more active learners.
7. Allowing learners to discover: allowing learners to discover the anchor can contribute to the development of a sense of experience as shared with others (kohler& Harris,2009:393−416)

Stages of Anchored instruction

The first stage: an introduction is presented that interests the learners by using video presentation tools or laser discs containing a complex problem and solid information that helps to solve the problem and learning can be achieved with the participation of the teacher with the learners.

The second stage : introduce the learners to the nature of the problem and make the learners work on basic concepts to solve the problem and the learners develop the experience of participation and development of the teacher leads the process of discussion and then increase their knowledge.

Third stage: learners increase their knowledge through research to reach constructive ideas to solve the problem.

Fourth stage: learners benefit from their knowledge and information as tools to solve problems and the teacher helps them in this stage by providing them with knowledge resources to solve the problem.

Fifth stage: getting learners to know how to apply concepts and move on to solving these problems and the learners are involved in making projects related to the topic of study with writing a report on the project or making reports via multimedia.

The sixth and final stage : in which the learners explain what they have learned from the project and how each learner solves the problem compared to his colleague, identifying the weaknesses and strengths and dividing the solutions for each of them (ziton , 1990: 89)

acquiring concepts

(Al-Sharaf,1996) stated "mathematical concepts are those things for which we can find a natural model or a mathematical model that can be represented naturally, and it divides mathematical concepts into two basic sections: objects and links and links are divided into processes and relationships, and mathematical concepts are either primary and derived from our sensory experiences of the outside world or secondary concepts which are concepts derived from the initial concepts by linking relationships and creating a new concept higher than the previous one, which has a natural model that is mathematically representable. (Al-Sharaf, 26:1996)

(Abu Zeina,2003,1996) believes that the most important feature of modern mathematics in our days is that it has become not just routine operations or separate skills, but they have become tightly connected structures that are in the end an integrated structure and that the basic building blocks of this construction are concepts) (Abu Zeina, 2003,1996)

Basic components of the concept (elements: Al-Sharaf (1996) believes that the concept consists of three elements: :

1. **concept vacuum:** it includes all the qualities, properties and features that are available in cases that are consistent with the concept, for example the following phrase "quadrilateral form consists of two pairs of parallel sides" parallelogram, this concept vacuum consists of (a set) of quadrilateral geometric shapes that all share a standard

characteristic, namely that each pair of sides is parallel regardless of whether it is a square or a rectangle or a particular.

2. **concept term**: it is that name or symbol that is given to the concept based on the common properties between the elements of its space, for example in the previous concept the concept term is "parallelogram."
3. **The content of the concept**: it is that phrase that is given to the concept and defines it, which is a summary and compilation of the properties available in the elements of space that distinguish them from others formulated in a sentence that gives meaning and reflects the general picture of those properties. For example "parallelogram) its content is expressed in a useful sentence and is a quadrilateral with two pairs of parallel sides. (Al-Sharaf , 1996: 27-28)

Strategies for teaching mathematical concepts

The study of the impact of strategies on concept learning is recent, starting in the last three decades, and some of this is based on the assumption that strategy has an impact on the acquisition of the concept, and therefore the concepts associated with it.

(Henderson) defined concept education strategy as "a set of moves that a teacher makes when teaching a concept" (Abu Zeina, 2001:137),Due to the importance of strategies in teaching mathematical concepts, several studies have been conducted to search for the most effective of these strategies, including the following:

- The strategy consisting of the movements of belonging examples: the teacher provides examples describing the concept and realized by the students through them .
- Strategy consisting of movements of belonging examples, non-belonging examples but not in a fixed or specific order.
- Definition strategy, examples of belonging, examples of non-belonging: the teacher starts by giving the definition of the concept first and then gives examples where the definition is clarified, and then gives the students no examples to eliminate misunderstanding and to distinguish between the example belonging and the example not belonging
- The strategy of examples of belonging, examples of non-belonging, definition: the teacher begins by presenting examples that achieve the features of the concept, then followed by examples that do not belong to the concept, then followed by giving a phrase that explains the concept a linguistic explanation that explains its meaning, i.e. definition.(Abu Zeina 2011: 214-215)

Concept acquisition

A some of researchers and specialists developed means and methods through which to measure the learning of the concept and inference on the extent of its acquisition, including asking a question where (Druze) confirms that the question is used to ensure the acquisition of the concept where we can test the ability of the student to:

1. The concept is defined in writing and verbally, i.e. its name is given to the concept if it is given a definition of the concept or vice versa.
2. Apply the concept by giving the student new examples of the concept.
3. Reclassifies concept examples into belonging and non-belonging . (Abdul Sahib and ashwaq, 2012: 56)

To evaluate the student's acquisition of the concept, we need to follow the following steps : :

1. Define the concept
2. Formulate the definition of the concept
3. Identify the qualities of the concept that distinguish it from other concepts.
4. Determine the location of the concept relative to the concepts associated with it .
5. Choose examples that apply to the concept and examples that do not apply to it.
6. Application of the concept in mathematical situations. (Danaa, 2009 : 31)

(Davis)developed a two-level concept acquisition model

First level: measures the student's ability to distinguish concept examples from no concept examples and the student can make the following moves:

a) Gives concept examples or identifies concept examples from a set of examples.
b) Explains why concept examples are chosen
c) He gives negative examples of the concept
d) He explains why negative examples are chosen - .

The second level : measures the student's ability to distinguish the characteristics of the concept ,and can make the following moves:

a) Specifies the things that must be provided in concept examples
b) Specifies sufficient properties and conditions so that the example is subordinate to the concept.

c) Defines common qualities between two concepts and non-common qualities.
d) It gives a specific definition of the concept-
e) He mentions the different ways of using the concept. (Abu Zeina, 2010: 236)

(Badawi,2003) stated that the student's acquisition of concepts is measured by the following :

A. Definition of the concept
B. Mention the characteristics of the concept.
C. Use of the concept.(Badawi, 2003: 643)

The researchers adopted Badawi's opinion in preparing the concept acquisition test with three questions for each concept (definition of the concept, distinction of the concept , application of the concept. (

Studies on learning resources

Study (Shehata,2015) aimed to find out after the difference in the pattern of interaction with an electronic environment based on learning anchors, in the development of skills of developing interactive simulation software, I have students of Professional Diploma in the College of education, this study was conducted in Egypt formed a research sample of 33 students in the College of education, the research

Study (AL- Lozi , Metwally , 2020)this study aimed to know the employment of electronic learning reporters in teaching a course of educational evaluation to develop the levels of depth of knowledge and the merits of the calendar and self-assertions professional student teacher at the Faculty of Home Economics conducted this study in Egypt at the Faculty of Education formed a research sample of 125 dimensional application The research tools were testing the levels of depth of knowledge, merit card calendar, scale of professional self-assertions, the results showed the results showed a statistically significant difference between the average grades of students teachers in the tribal and post application to test the depth of knowledge and merit calendar and professional self-assertions in favor of the experimental group

Studies dealing with the acquisition of mathematical concepts .

Study (Hassan, 2014)The aim of the research is to identify the impact of class questions in the acquisition of mathematical concepts among middle school students and their critical thinking skills in mathematics, the researcher used the experimental design with dimensional test and partial control of two

equal groups , The research sample consisted of 85 female students of the second grade average studied the experimental group using class questions and the control group using the usual method and after completion applied the test of acquisition of mathematical concepts and critical thinking, both prepared by the researcher and the results emerged the superiority of the students of the experimental group over the students of the control group in the test of acquisition and thinking on the students of the control group.

Study (al-ghanimawi, 2021)The aim of the research is to identify the effectiveness of the two models of acceleration of thinking and Huni and Mumford in the acquisition of mathematical concepts in the fifth grade primary students and their scientific inclinations , the researcher used the experimental design with dimensional test and partial control of 3 equivalent aggregates , the research sample consisted of 60 students of the fifth grade primary students studied the experimental group using the two models and the control group using the usual method and after completion applied the test of the acquisition of mathematical concepts and the scale of scientific inclinations and the results showed the superiority of the students of the experimental group over the students of the control group in the acquisition test and the measure of scientific inclinations.

Research procedure

The more the choice of experimental design is based on the objectives of the research and its variables and the conditions under which it will be implemented, the more the results obtained after the analysis of the data are more objective, accurate and truthful (Rauf, 2001 : 169), so the researchers adopted the experimental design with pre-and post-test for two groups experimental and control) (1):

Table (1)

experimental design

Group	Parity	Independent	Affiliated	Search tool
Experimental group	-Previous knowledge -Previous collection -IQ test -Educational level of parents --Analytical thinking test	Educational program	Analytical thinking	Analytical thinking test
Control group				

Research community

The research community consists of students of the fifth grade primary in the day schools of the General Directorate of Education Baghdad / Rusafa first for the academic year (2020 – 2021), and since the research requires knowledge of the effectiveness of the educational program learning according to the learning reporters in the acquisition of mathematical concepts among students of the fifth grade primar.

Table (2)

distribution of research respondents

Group	Division	Total number of female students	Number of excluded students	Number of schoolgirls after exclusion
Experimental	C	33	7	26
Control	D	34	5	29

Parity of two search groups

The two groups were rewarded with a number of variables (Previous knowledge, Previous collection ,IQ test, Educational level of parentsو Analytical thinking test) after the researchers obtained the chronological age and previous achievement from school records ,and the previous knowledge was obtained grades students after testing and examining their answers and determine the grades of each of them and when comparing the average scores of the experimental and control research groups using the test- test for two independent samples show that the calculated value is less than the tabular value in the three variables, which means that the two groups are equivalent variables above and the following table shows this . Tables (3)(4)

Table (3)
Equivalence of search variables

Group	Variable	Division	Number	Mean	Variance	Df	The value of chi-square		Statistical significance at an indication level (0.05) and a degree of freedom (3)
							Calculated	Scheduling	
Experimental	Previous knowledge	C	26	10,35	10,71	53	1,063	2,01	Non-significant
Control		D	29	. 9,48	7,55				
Experimental	Previous collection	C	26	6,19	6,404		0,979		
Control		D	29	5,62	5,077				
Experimental	Educational level of parents	C	26	129,77	101,30		1,91		
Control		D	29	126,93	56,93				
Experimental	Analytical thinking test	C	26	22,30	6,130		1,98		
Control		D	29	23,801	4,52				

As for the IQ variable, the Raven test was applied (al-Dabbagh,1983)and then the test papers were corrected and then extracted bicentennial students sample research and divide the students into ranks according to the degree of centigrade and calculate (chi -u zrr) the calculated values were less than the value of the table at the degree of freedom 3 to be the difference is not D statistically in the IQ variable and the following table shows this (al – Dabbagh, 1983: 1-60)

Table (4)

Hundreds of grades of female students in the equivalence of the IQ variable

Group	Division	Intelligence level				Total	The value of chi-square		Statistical significance at an indication level (0.05) and a degree of freedom (3(
		Under ٪5	Below average 5% - 25%	Average 25% - 75%	Good 75%-95%		Calculated	Scheduling	
Experimental	C	10	6	8	2	26	2,36	7,81	Non-significant
Control	D	11	8	9	1	29			
Total		21	14	17	3	55			

research requirements

Select the scientific material: select the scientific material to be taught in the first chapter (large numbers) second chapter (large numbers addition and subtraction) third chapter(Multiplying numbersfourth chapter) (division of numbers) fifth chapter (decimals)

Analysis of the scientific material: the scientific material was analyzed and extracted the main concepts and presented to a group of specialists and the amendment according to their valuable observations

Identification of behavioral goals: the special objectives of teaching the material were developed in the form of behavioral purposes according to the six levels of classification of bloom in the cognitive field , and were presented to a group of specialists and took a percentage agreement on each goal and adopted in the educational program and teaching plans.

Educational – Learning Program

The Educational – Learning Program has been prepared according to the following stages:

1. write the learning tutorial as described by the literature and sources that have been written on the topic.
2. presenting a sample of the learning tutorial to a group of specialists.
3. try out the tutorial from outside the research material on a sample outside the research sample from the same community .
4. review the prepared learning educational program and modify it according to the opinions of specialists and observations of the experimental sample and output it in the final image.

Preparation of teaching plans: (13) teaching plans were prepared for each group and presented to a group of specialists, modified and produced in the final form a model of them .

(Research Tool): The concept acquisition test was prepared as follows**::**

- Determine the purpose of the test , which is to measure the extent of the acquisition of students of the fifth grade primary research sample of mathematical concepts and the number of concepts 19 concepts according to the content analysis by three paragraphs for each concept (definition of the concept , the distinction of the concept , the application of the concept) to be the number of paragraphs 57 objective paragraph of the type of multiple choice ,as well as the preparation of instructions answer typical answer sheet for the test was

adopted in the correction by a score for each paragraph to become a test score between (0 – 57) degree, presentation of test paragraphs and instructions answer and typical answer to a group of specialists .

- The test was applied to a survey sample of 100 students from al-Mukhtar Al-Thaqafi Elementary School on Wednesday 2/12/2020 and the psychometric characteristics were extracted using appropriate statistical means from the calculation of the coefficients of difficulty and excellence and the calculation of the coefficient of stability using the formular KR-20 and the amount of (0.83)
- The test was confirmed to include all concepts by three paragraphs for each concept and thus the test is ready for application to the research sample .

Application Experiment

The application of the research was started with the beginning of the second course of the academic year 2021-2020 Day 6 / 2 1/ 2020 9/12/2020 variables were equalized by four weekly attendance and 3 electronic classes with a total of (26) teaching plan by one of the researchers and then the application of the concepts acquisition test on the two groups on Sunday 17/3/2020.

Statistical means

Use two researchers means of appropriate statistical namely, treatment difficulty coefficient and the equation of the coefficient of the treatment effectiveness of the alternatives and the treatment of the chi – square test and the treatment KR20t - test fucking two independent as the use of the package of statistical spss . (Oudaa ,1998: 285-356)

Presentation and interpretation of results

After conducting the test of the acquisition of mathematical concepts of the experimental and control groups of the research groups (control and experimental) and correct the answers of students for the paragraphs of the test of the acquisition of mathematical concepts, as the results showed statistical analysis-صائيtest for two independent statistical samples as shown in Table (5):

Table (5)

test results of the control and experimental groups in the dimensional test to acquire mathematical concepts

Group	Number	Mean	Variance	df	(t-test)		Significance level in (0.05)
					T	sig	
Experimental	26	39,92	11,92	53	5,082	2,01	Significant
Control	29	31,28	64,41				

This result is consistent with the result reached by previous studies that looked at the acquisition of mathematical concepts as in the study (Al-karkhi, 2016) and the study (Al-ghunaimi, 2021)

Three sub-hypotheses have been derived from this hypothesis:

A-there are no differences of statistical significance at the level of significance (0.05) between the average scores of those who studied according to the educational learning program according to the learning reporters and students who studied according to the usual method of testing the acquisition of concepts (definition of the concept), in order to identify the significance of comradeship researchers used a test for two independent samples:

Table (6)

t-test results of the control and experimental groups in the dimensional test to acquire mathematical concepts(definition of the concept)

Group	Number	Mean	variance	df	t-test)(		Significance level in (0.05)
					T	sig	
Experimental	26	13,50	6,58	53	4,220	2,01	Significant
Control	29	9,86	13,41				

And after correcting the answers of the students of the two groups of research for the test paragraphs acquire concepts (definition of the concept) test results showed that the average scores of the students of the experimental group reached (13,50) and contrast reached (6,58) and the average scores of the control group reached (9,86) and contrast (13,41) and using the t- test for two independent samples

B-there are no differences of statistical significance at the level of significance (0.05) between the average scores of those who studied according to the educational learning program according to the learning reporters and students who studied according to the usual method of testing the acquisition of concepts (concept distinction), in order to identify the significance of the researchers used a test for two independent samples

Table (7)

t-test results of the control and experimental groups in the dimensional test to acquire mathematical concepts (concept distinction)

Group	Number	Mean	variance	df	t-test)(		Significance level in (0.05)
					T	Sig	
Experimental	26	14,08	5,43	53	3,387	2,01	Significant
Control	29	11,24	13,33				

And after correcting the answers of the students of the two groups of research for the test paragraphs acquire concepts (concept distinction) test results showed that the average grades of the students of the experimental group reached (14,08) and contrast reached (5,43) and the average grades of the control group reached (11,24) and contrast (13,33) and using the test- test for two independent samples

C-there are no differences of statistical significance at the level of significance (0.05) between the average scores of those who studied according to the educational learning program according to the learning reporters and students who studied according to the usual method of testing the acquisition of concepts (application of the concept), in order to identify the significance of compassion the researchers used a test for two

Table (8)

t-test results of the control and experimental groups in the dimensional test to acquire mathematical concepts (application of the concept)

Group	Number	Mean	variance	df	t-test)(		Significance level in (0.05)
					T	Sig	
Experimental	26	12,35	1,67	53	3,105	2,01	Significant
Control	29	10,17	11,22				

And after correcting the answers of the students of the two groups of research for the test paragraphs acquisition of concepts (application of the concept) test results showed that the average grades of the students of the experimental group reached (12,35) and contrast reached (1,67) and the average grades of the control group reached (10,17) and contrast (11,22) and using t- test for two independent samples..

Conclusions

1. The educational program has proved learning according to the learning reporters effectiveness in the acquisition of students fifth grade primary mathematical concepts.
2. The impact is more positive for learning through the educational program, as it provides freedom for the learner and non-commitment to space and time

Recommendations

1. Interest in mathematical concepts because they are the basic building blocks and cognitive mathematics
2. Employing the different strategies of the educational learning program in accordance with the learning principles in the acquisition of mathematical concepts to suit each concept.
3. preparation of mathematics curricula according to the educational learning program .

Proposals

1. Conduct a similar study to see the effectiveness of the educational program learning according to the learning anchors in other study subjects.
2. Conducting a similar study to see the effectiveness of the educational learning program according to the learning parameters in other variables such as mathematical communication.

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