Computerization of Curricula and Its Impact on Academic Achievement of Children with Learning Difficulties

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Abstract

The current research aims to design educational software based on the reality of the curriculum and in light of the most prevalent difficulties in schools, which have been identified using a diagnostic test of the Ministry of Education to determine the academic difficulties in the mathematics course for the third grade of primary school in Saudi Arabia with the aim of improving the performance of children with learning difficulties in those mathematical skills Based on quantitative and qualitative data from 20 student and the results showed that there are statistically significant differences between the average scores of students in pre- and post-performance on some mathematical skills for the benefit of post application at the level of (0.05).

Keywords: *Program - educational software - e-learning - learning difficulties.*

.1. Introduction

The category of students with learning difficulties is one of the important groups that need more attention and assistance in various teaching methods and styles. The current interests of educators are in the search for the best means to provide an interactive educational environment. To attract interest in this category and increase its motivation. , but whatever creative effort is invested in it, it still has limits that cannot be crossed. and Modern educational technologies play an important role in improving the educational process and advancing it in all its human, social and economic fields. By using computers in the educational process, various means of explanation can be provided that enhance educational attitudes, especially for those with learning difficulties, in a good and appropriate way. (Wissick, 1996) This is in addition to the fact that basic education in the elementary stage represents the basic base on which the educational   system   is   based. .

The need to design electronic programs that contribute to providing interactive experiences for education and providing teachers with the necessary skills to deal with and train students has increased, especially in the early stages of education, where electronic programs have shown their effectiveness in developing students' abilities and attracting their attention. (2003, Jones, p.

30) And we need such programs, especially after the widespread use of distance education in light of the Corona pandemic. In recent years, attention has begun to focus on the use of computers in special education, and developments in the social, educational, health, legal and technology fields have helped increase interest in providing the best programs for these individuals, and the uses of computers in the field of special education are as follows:

• Using computers to help people with special needs, especially learning difficulties, in carrying out their homework.

• Apply the individual educational plan.

• Helping students to solve some problems such as reading, reading comprehension, writing and arithmetic. (Al-Qaryouti, 2002).

The computers plays a major role in the education of all groups of students, as students with learning difficulties in particular are able to overcome many obstacles that prevent their independence and teach them in school, as they enable them to communicate with others, and participate in Educational and social activities, and increasing independence in daily life skills.

(Rhee, 1997) The computer has become one of the modern means and methods in developing the various skills of students, such as organized individual training as a result of the potential for attraction and diversification in the presentation (Davidson, 2004). Leading to the expansion of the growth of the linguistic vocabulary and the deepening of its meanings among the students, and the provision of many opportunities to gain new experiences that will benefit him in his studies and his life and deal with them effectively.

(Mustafa, 2004) Hence, we conclude that there is a need to use computers with students with learning difficulties, to provide an appropriate environment for individual learning and to help students with learning difficulties take responsibility for their learning, to provide real individual education. Planning, to help them make appropriate decisions, and to motivate them by providing feedback. Immediate, and giving students a sense of self-respect, which we are trying to present by developing computerized software for some mathematical skills from the reality of the textbook to emphasize the importance of computerizing the curriculum in a way that suits students with Learning difficulties.

In view of the scarcity of research that dealt with computerizing courses in a manner commensurate with the difficulties faced by these students and based on the application of individual plans for people with learning difficulties, we are trying in this research to cover

That gap by answering the following research questions

RQ1: Are there statistically significant differences in the pre and post measurement in favor of the post measurement for students with learning difficulties in the third grade of primary school in terms of their improvement in their performance using computerizing some skills in the mathematics course compared to traditional teaching?

RQ2: Are there differences between the average ranks of the degrees of pre-measurement and post-measurement in reading numbers among the tens of thousands, comparison and arrangement of numbers, adding and subtracting numbers consisting of several numbers with regrouping, rounding of numbers, describing probability. in the mathematics course for third-year primary school students in favor of post-measurement?

Technology Education

The researchers refer to the procedural definition of the program as follows: It is designing an electronic program for third-grade students during the programming of the series of lessons using the course lab hgl program specialized in designing educational lessons in addition to using the Flash-8 and JAD7002_VX_COWON flash program to enter sound and use some moving and static images across the Internet, and add sound and visual effects that attract attention Pupils are about learning and help develop their tendencies, and gain excitement and pleasure during learning.

Electronic learning Yousef Al-Arifi defined it as "providing educational content and the explanations, exercises, interaction and follow-up, partially or comprehensively, through advanced programs stored on the computer or on the Internet." (Computer Applications in Education, authored by, (Abd Al-Ilah Al-Arfaj. Youssef Al-Areifi, Saleh Fayed, p. 44). The researchers refer to the procedural definition of e-learning as follows: It is a pattern of modern learning patterns and provides an asynchronous learning environment (restricted by time and place) in which the learner uses computers and electronic means of communication to search and access digital educational materials and interact with them independently or independently.

There are a large number of definitions of the concept of educational software, (Qandil, 2002) defined it as: Programmed educational materials produced by electronic means to be stored in special containers known as CDs, which depend on the operation of the computer. While (Salem and Saraya, 2003) define it as "Those multimedia educational aids expressing the academic content and its activities, which are prepared, designed and produced in the form of a computer program in light of specific standards in accordance with specific educational objectives.

Learning difficulties Samuel Kirk in 1963 for the first time referred to the term Learning Disability, as he indicated that there is a group of children who are difficult to acquire language and science skills through regular teaching methods even though these children are not mentally retarded and there are no visual or auditory disabilities that prevent them from Their acquisition of language and learning usually appears in the person's inability to listen, think, speak, read, write, spell, or solve mathematical problems (Awad, 2002).

Research literature

No one denies that we are currently living in an era of progress and technological development in all its dimensions, and technology has been able to impose its presence in various areas of life, so that it is impossible to find a sector, whether medical, educational or commercial, without this progress.

The results of the studies of Gerber and Christensen indicate. (1990) and ShireChery (2000) pointed to the importance of using computers to help students with learning difficulties, because it works to increase their academic achievement, and many studies have shown that computer-assisted education for students with learning difficulties increases their efficiency and develop a positive view of academic content, and this in turn works to increase Achievement of students with learning difficulties. Also, computer-assisted education can be an effective way to provide the training and practice that students need in mastering basic writing skills, and computer programs that use play, exercise or training lead to an increase in their mastery of writing skills and increase their achievement.

Acceleration of technological and knowledge developments in educational institutions; To prepare individuals in line with contemporary requirements. In the shadow of educational renewal, a close link appeared between the curriculum and technology, and this was represented in the use and application of modern technology methods to highlight and clarify the educational material (Obaid and Majdy, 1999), as education technology is one of the most important pillars that education can rely on in developing its processes and its quantitative outputs. Quality and updating them, due to its connection with the concept of education quality. (Mansour,2001)

It is the means used to provide an interactive learning environment Written texts: it consists of several sentences, paragraphs, or primary and sub-headings that appear on the screens.
To acquaint the learner with the educational program, its objectives, content, evaluation, and instructions.

Line drawings: they are fixed line configurations that may be in the form of graphs (in lines - columns in circles - with pictures) or illustrations, pictorials, posters, cartoons, maps or symbols Virtual **Reality:** It is to show fixed and moving things as if they are in their real world in terms of embodiment. Movement and sense of it. (Elfar,2000)
And both refer to (Al-Tordi, 2000); (Al-Farr, 2000); (Salama, 2004); (Ammoura and Al-Qamha, 1999); (Kinsarah and Attar, 2009) pointed out that the use of computer programs and their employment in the field of education helps in: achieving high academic achievement, and is a suitable tool for all groups of students, each according to his capacity and absorptive capacity, and shortening time and effort in teaching, and stimulating students' motivation, curiosity, fun and excitement.

Students with special needs benefit from the computer and its various programs. Where the results of many studies indicated the

effective role that the computer plays in meeting the needs of this group, as indicated by other studies such as Scully 1988 and Rivagel 1995 who emphasized that using a computer helps in good comprehension instead of a blackboard. The use of computers in the education of those with learning difficulties: the computer is one of the modern technological means that works to store and retrieve information when needed. Computers are used in the field of education, especially those with learning difficulties. (Chery, 2002)

Some researchers recommend learning disabilities, such as Al-Maskari (2006), Lynn, Douglas and Carol (Lynn & Douglas & Carol & Sarah & Andrea & Pamela , Sarah, Andre, and Pamela,2006) The necessity of using computers with students with learning difficulties, to achieve several benefits, including: Provides an appropriate environment for individual learning, holds students accountable for their learning, provides them with a real individual educational plan, assists them in making appropriate decisions, and contributes to motivating student learners by providing immediate feedback It gives students a sense of self-respect.

The prevalence of learning difficulties

There is no fixed rate for the prevalence of learning difficulties, as some estimate it among school children at 1%, while others think that the percentage may reach 20%, but the generally accepted percentage is (2-3%).

(Peter, 2009). (Awad ,2009) indicates that the percentage of people with learning difficulties in the Arab countries ranges between (13-46%), while in the United States of America one out of every seven people suffer from a learning difficulty, and the percentage of people with learning difficulties is one of the most. Special education categories are widespread and receive special educational services. (Mercer, 1997)
Kirk and Calvin (1988) classify learning disabilities into: developmental, academic, and developmental learning difficulties.
1- Developmental learning difficulties: It is a disorder in the growth of mental functions necessary for the learning process. It is one of the most important factors that are responsible for the low academic achievement of the student, despite his normal level of intelligence. These difficulties are divided into primary difficulties such as: attention, memory, and perception. Secondary difficulties such as: difficulties in thinking and oral language (Al-Zarrad, 2001); (Solomon, 2008); (Walakbali, 2003).
2- Academic learning difficulties: These are the problems that appear among school students. Whereas the student's level of academic achievement is not in line with the level of his mental abilities, which are represented in "difficulties related to reading, writing, spelling, writing and arithmetic, as well as various academic subjects (Bahjat, 2004; Sadiq, 2007). (Awwad,2009) indicates that the relationship between learning difficulties Academic and developmental learning difficulties are a cause-and-effect relationship.
The study of Abdul Majeed, Mahmoud Gad Mustafa. (2019) It was proposed to build digital warehouses to develop some mathematical technological skills and mathematical achievement for first-grade middle school students.

Abdul Qadir and Mahmoud Ahmad's study (2015) which referred to the development of visual inference using interactive and dynamic software, while Salman, Shaima Mustafa Mahran (2011) used an e-book on CD to help the first three grades pupils to treat the phenomenon of leakage, while the results of the Ziauddin study showed Muhammad Mutawa (2000) that the use of computer games increased the effectiveness of dyslexics in achieving some concepts of science compared to members of the control group, and this indicates the importance of using technology in education, especially in teaching children with special needs.

Research Methodology

The research used the experimental approach of the one group with the application of the program (preparing researchers) pre and post.

1- Demographic characteristics of the study sample:

The school name	Frequency	Percentage%
The second primary school, Jubail	6	30
The Abnaa school in naval base	5	25
The fourth primary school, Khobar	1	5
The eighth primary school in Jubail industrial city	8	40
Total	20	100%

Table No. (1) shows that the number of the study sample consisted of (20 students) distributed to four schools, which are as follows: The second primary school in Jubail, including 6 female students by 30%, and five students from the Sons School at the Naval Base by 25% and one female from a school the fourth elementary school, 5%, and 8 students from the eighth primary school in Jubail Industrial City, 40% of the total sample.
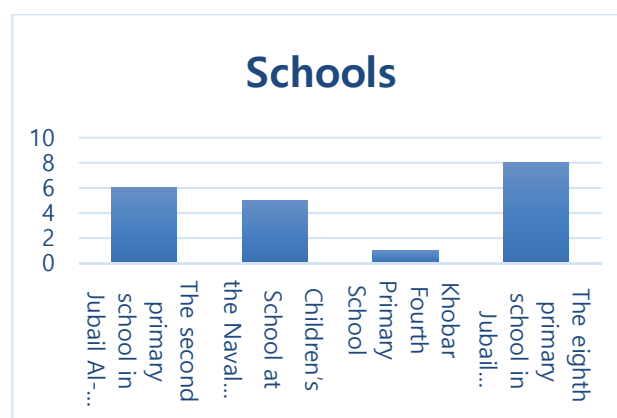

Figure No. (1): Distribution of the study sample according to the school to which they belong.

2-Research tools

The study of Abdul Majeed, Mahmoud Gad Mustafa. (2019) It was proposed to build digital warehouses to develop some mathematical technological skills and mathematical achievement for first-grade middle school studentsUse of course-lab to present the software.

-Use flowchart to define the flow of the software.

-Use of a questionnaire to measure the pre and post-performance of some mathematical skills (preparing researchers).

First: Designing the Software

In this stage, the program was designed and implemented using CourseLab, and CourseLab is a powerful, easy-to-use, e-Learning authoring tool that offers a programming-free WYSIWYG environment for creating high-quality interactive e-Learning content that can be published on the Internet, Learning Management Systems (LMS), CD-ROMs and other devices. In this stage the contents of the software screens are identified, including methods, educational strategies, interactive activities, and tests, in addition to the scientific material that was previously analyzed in the analysis stage, and after that comes the design of the interfaces, and this stage included five steps:

1- Defining educational experiences with choosing the appropriate educational aids:

In this step, the teaching methods and strategies that will be included in the program have been identified, taking into account that they are appropriate to the goals and the level of the learners, as well as identifying the elements of the appropriate means for the program (text, voice such as spoken language and music, animation, static and moving images) and this is in the form of a modules in which the requirements of presentation are determined Each lesson from the teaching aids is shown in the following figure.

Figure (2) illustrates the method for determining educational experiences and means.

2- Defining educational and interactive activities:

It is represented in setting the educational activities that the learner performs while using the program and his response to everything that the program offers him and answering the questions presented to him by the program, for example one of the activities presented is a game and this game is limited to a specific time, a group of horses The student clicks on each horse to appear The question about this horse appears and the question is coupled with the answer behind the doors of the stable so that the horse can cross this door if the answer is correct.

3- Determine the tests:

Where some questions were developed to test the student's understanding and proficiency of the required skill.

4- Determine the traffic map in the software:

The navigation map or walk in the software is a visual display method to clarify the paths in which the learner will walk in order to achieve the educational goals set by the designer. It also illustrates the way the learner deals with the software as well as defining work specifications and alternatives in the software, such as providing remedial activities for those who fail to achieve the level of mastery. It also determines the level of mastery to be achieved.
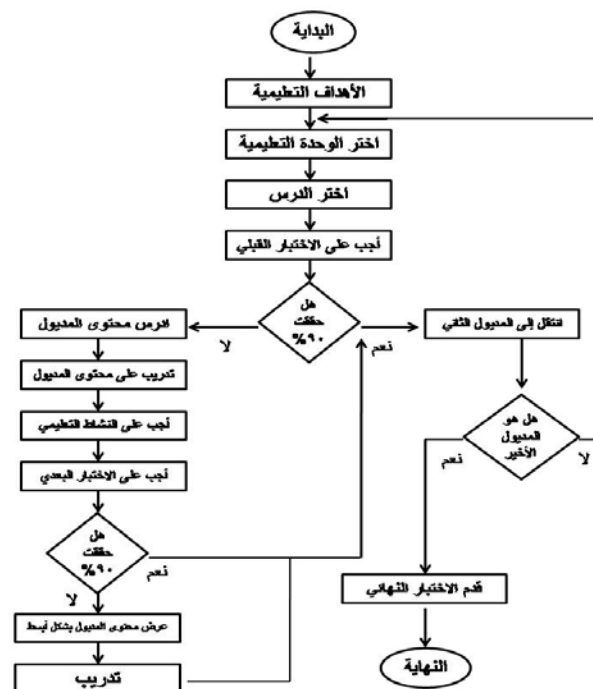

Figure (3) a flowchart of the software.

5- Interface design:

Here the program interfaces (display screens) are designed in terms of their types, components, and decision-making points by going to the list, previous, next or exit, as well as locating text, images, video clips and other media.

The program was implemented using the (Course Lab) program, which is one of the most powerful tools used in designing courses, as it enables the user to create high-quality educational content, with the ability to upload the content directly to e-learning systems, and the final result can be produced in a format compatible with laser discs.

Course Lab allows you to create and publish activities and programs on the Internet. It also allows you to apply simulation and computer-based training programs.

The program is designed in an interactive manner, as all the interfaces contain sounds and animations, and the following is a display of some of the software screens.

Figure (6) screen for selecting the class that contains the required skill

Figure (4) the main screen of the program

Figure (7) an example of division

Figure (5) the entry screen for the lesson
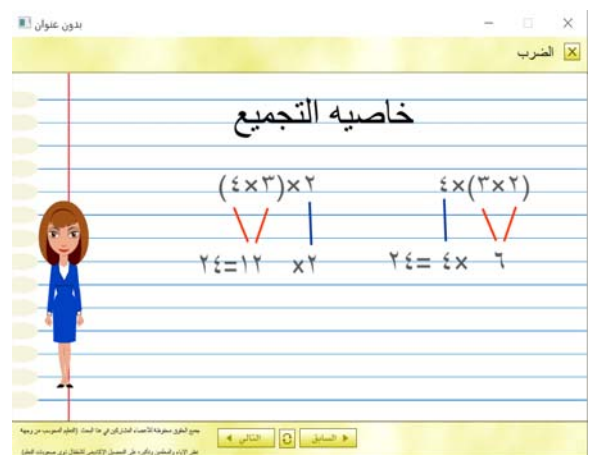

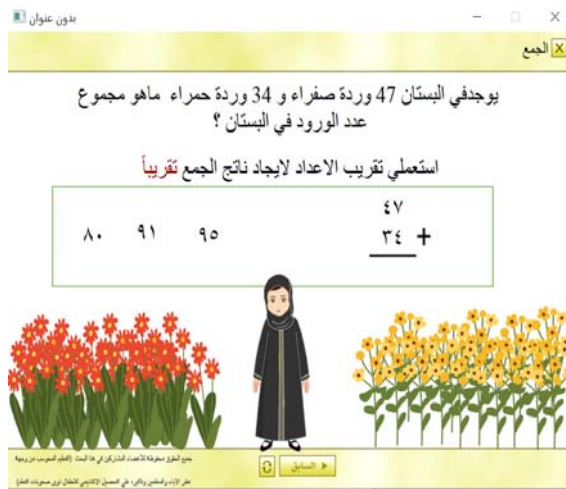**Figure (8)** Explanation of the grouping property

Figure (9) an example of addition by approximation

Figure (10) End of the lesson screen

Secondly: Honesty and Proofs:

1-Validate the study tools:

To verify the validity of the content of the study tools, the computerized educational unit, which was designed in light of the educational unit foundations in the basic curriculum of the third grade of mathematics, presented to a group of referees in the field of specialization from among the faculty members the curricula and methods of teaching mathematics at the College of Sciences and Humanities Imam Abdul Rahman bin Faisal University And two supervisors from the Ministry of Education, who were asked to express their opinion regarding the suitability of the educational unit, its comprehensiveness, the diversity of its content, the level of language formulation, and the amendments were made in light of their observations.

2- Stability of study tools:

To verify the stability of the program, the test and retest method was used, as it was applied to a random sample of (3) students with learning difficulties, and after an interval (two weeks) it was applied again to the same sample, and Table No. (2) shows the results of the coefficient Pearson correlation to validate the test. Where the table shows that the value of the correlation coefficient was high, and it is statistically significant, and this indicates that there is a high stability of the software, which enables us to rely on its results.

Table No. (2) results of the Pearson correlation coefficient for educational software.

Pearson correlation factor	Significance level
0.860	0.001

Table (3) Black Modifies Gain Ratio

| Mathematical skill (scale and group)		N	Mean	Std. error	Std. deviation	variance
Read numbers within tens of thousands and writing them	pre	20	0.65	0.17	0.75	0.56
	post		2.15	0.11	0.49	0.24
Compare and arrange numbers	pre	20	1.70	0.11	0.47	0.22
	post		2.95	0.05	0.22	0.05
Rounding numbers	pre	20	0.60	0.17	0.75	0.57
	post		2.55	0.14	0.60	0.37
Adding and subtracting numbers consisting of several numbers with regrouping	pre	20	1.10	0.19	0.85	0.73
	post		2.70	0.11	0.47	0.22
Describing probability	pre	20	1.05	0.15	0.69	0.47
	post		2.25	0.14	0.64	0.41
Total mathematical skills	pre	20	1.02	0.08	0.80	0.65
	post					
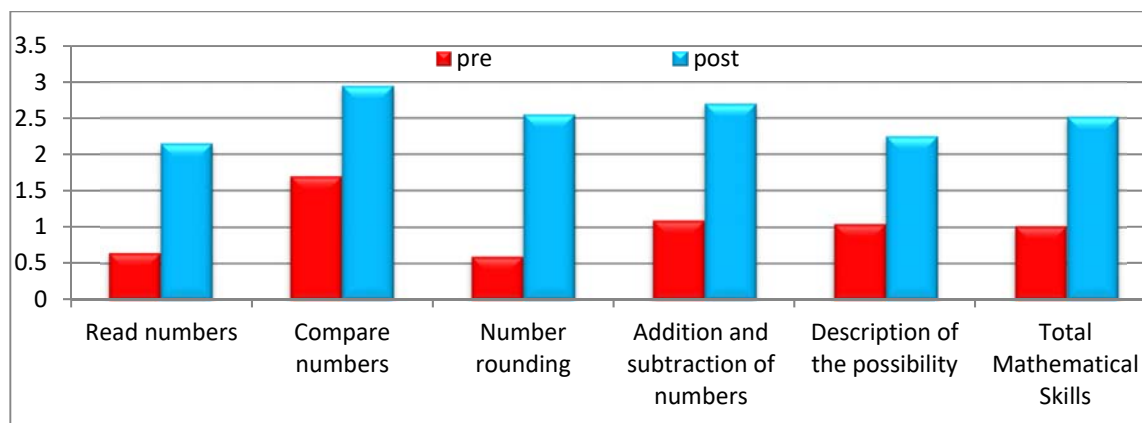
Figure (11): Mathematical Skills Measures

- The statistical methods used in the study:

To reach the results of the study, the SPSS program, version No. 24, was used, and the following statistical methods were used:

- Descriptive statistics of the variables and results of the study. Black's Modifies Gain Ratio (Black, 1966) was used.
- The Wilcoxon Test NPar Test was used to find the difference (Z) Paired Samples for each mathematical skill before and after using the tutorial.

- Hypotheses

1- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of reading numbers within tens of thousands in the mathematics course for third-grade students in favor of measurement Dimensional.

Table No. (4).

Conclusion	Black's Modifies Gain Ratio	Asymp. Sig.	value (Z)	درجة الحرية	Mean Rank	Std. deviation	Mean	The skill of reading numbers within tens of thousands
Significant difference and statistically Significant	1.16	0.000	-3.946	20	11.95	0.745	0.650	pre
					29.05	0.489	2.150	post

Table No. (5) shows that the arithmetic mean of the pre-application (before using the educational software) for female students for the skill of reading numbers within ten thousand is (0.650) and the arithmetic mean after the application is (2.150) and that the calculated value of (g) is greater than the two tables at a level of significance (0.05) , 0.01), where the level of significance was (p <= 0.000), which indicates the existence of significant statistical differences between the average scores of pre-measurement and post-measurement in the skill of reading

numbers within ten thousand in the mathematics course for third-grade students in favor of post-measurement.

2- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of comparing numbers and arranging them in the mathematics course for third-grade students in favor of post-measurement.

Table No. (5):

Conclusion	Black's Modifies Gain Ratio	Asymp. Sig.	value (Z)	df	Mean Rank	Std. deviation	Mean	The skill of comparing and arranging numbers
Significant difference and statistically Significant	1.39	0.000	-4.134	20	10.85	0.470	1.700	pre
					30.15	0.224	2.950	post

It appears from Table No. (6) that the average ranks for the pre-application of female students for the skill of comparing numbers and their order is equal to (10.85), which is less than the average ranks for post application (30.15) and the results of (G) test indicated that the difference is statistically significant as the level of significance was equal to (p <= 0.000) which is less than (0.05, 0.01), which indicates the existence of statistically significant differences between the mean ranks of the scores of measuring the skill of comparing numbers and arranging them in favor of the post measurement.

3- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of adding and subtracting numbers consisting of several numbers with regrouping in the mathematics course of female students Third grade of primary school in favor of the post measurement.

Table No. (6):

Conclusion	Black's Modifies Gain Ratio	Asymp. Sig.	value (Z)	df	Mean Rank	Std. deviation	Mean	The skill of comparing and arranging numbers
Significant difference and statistically Significant	1.39	0.000	-4.134	20	10.85	0.470	1.700	pre
					30.15	0.224	2.950	post

It appears from Table No. (6) that the average ranks for the pre-application of female students for the skill of comparing numbers and their order is equal to (10.85), which is less than the average ranks for post application (30.15) and the results of (G) test indicated that the difference is statistically significant as the level of significance was equal to (p <= 0.000) which is less than (0.05, 0.01), which indicates the existence of statistically significant differences between the mean ranks of the scores of measuring the skill of comparing numbers and arranging them in favor of the post measurement.

3- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of adding and subtracting numbers consisting of several numbers with regrouping in the mathematics course of female students Third grade of primary school in favor of the post measurement. Table No. (6):

Table No. (7) that the average ranks for female students before applying the educational program for the skill of adding and subtracting numbers is (11.43) and that the average ranks for measurement after application is (29.58) with statistically significant differences where the level of significance was equal to (p <= 0.000) It is less than (0.05, 0.01), which means that there are statistically significant differences between the mean ranks of the scores for measuring the skill of adding and subtracting numbers consisting of several numbers with regrouping in favor of the post measurement.

4- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of rounding numbers in the mathematics course for third-grade students in favor of the post-measurement.

Table No. (7):

Conclusion	Black's Modifies Gain Ratio	Asymp. Sig.	value (Z)	df	Mean Rank	Std. deviation	Mean	Rounding Numbers Skills
Significant difference and Statistically significant	1.42	0.000	-3.895	20	11.90	0.852	1.100	pre
					29.10	0.470	2.700	post

From Table No. (8) the results indicate that the average ranks for the skill of rounding numbers before applying the educational software was (11.90) while the average after application was (29.10), with statistically significant differences at the level (0.01, 0.05) where the level of significance was the level of significance. It is equal to (p <= 0.000) and it is less than (0.05, 0.01), indicating that there are statistically significant differences between the mean of the students' grades for the skill of rounding numbers in favor of the post application.

5- There are statistically significant differences at the level of (0.05) between the average ranks of the pre-measurement scores using the traditional teaching method and the post-measurement using the software to improve the performance of students with learning difficulties on the skill of describing probability in the mathematics course for third-grade students in favor of the post-measurement.

Table No. (8):

Conclusion	Black's Modifies Gain Ratio	Asymp. Sig.	value (Z)	df	Mean Rank	Std. deviation	Mean	The skill of describing probability
Significant difference and Statistically significant	1.02	0.000	-3.806	20	12.93	0.686	1.050	pre
					28.08	0.639	2.250	post

It is evident from the results in Table No. (9) that the average ranks of female students for the skill of describing probability in the pre-application (12.93) and in the post application (28.08) and when testing (g) to examine the significance between the differences between the pre and post averages and calculate the value of (g) and its significance, it was found that the value of (z= -3.806) which are statistically significant differences in favor of the post application.

6- There are statistically significant differences at the level of (0.05) for female students with learning difficulties in pre and post measurement in favor of post measurement using educational software, which helped improve the performance of children with learning difficulties on the mathematics course in the third grade of primary school.

Table No. (9)

Conclusion	The rate of modified earnings of the educational software	Asymp. Sig.	value (Z)	df	Mean Rank	Std. deviation	Mean	Use the tutorial
Significant difference and Statistically significant	1.29	0.000	-8.674	100	26.50	0.804	1.020	pre
					49.23	0.577	2.520	post

It is evident from Table No. (10) that the average ranks for female students before applying the educational software is (26.50) and after application (49.23) with statistically significant differences where the level of significance is equal to (p <= 0.000) which is less than (α = 0.05, 0.01 Which means that there are statistically significant differences between the average ranks of the students 'grades before and after the use of the educational software in favor of the post-measurement, and thus the hypothesis was verified.

To ensure the effectiveness of using the educational program for students, the calculation of the modified gain ratio for Black and found that it is equal to (1.29), which is greater than the minimum set for Black to accept the effectiveness of using the educational software, and it is clear from this that the effect of the program was effective and acceptable in measuring the effectiveness of the program.

Discussing the results

The results showed that there are statistically significant differences at a level of 0.05 between the mean of the ranks of the pre-measurement and post-measurement scores in all the skills that were under study in favor of the post-measurement, which is an expected result consistent with what the initial results of the program test showed. Significant improvement in the academic achievement of female students, due to the exciting style that was followed in the software (sound effects, pictures, graphics and colors), as the researchers noted that the use of the program helped

to solve one of the most important problems that children with learning disabilities face, which is lack of focus.

By attracting their attention, ridding them of distraction and increasing their attention span, thus fixing the information further. These positive results can also be interpreted as the program helped students learn skills at their own pace, in line with this category of students, where examples and training issues were presented gradually.

It is easy to difficult and allows you to move from one screen to another and from one chapter to another according to the desire and the self-speed of the student, in addition to presenting the student Immediate feedback feed, which led to the increase and development of academic achievement in the skills that were mentioned in the mathematics course for the third grade of primary school, which indicates that the program has achieved the desired goals, and the current study agreed with the study of Abdul Majeed, Mahmoud Gad Mustafa. (2019) which indicated that the use of the program based on digital repositories achieved effectiveness in the development of some mathematical technological skills of the research group, and helped to develop the students' achievement of the research group in the mathematics course for the first year of middle school.

It also agreed with the study of Kazım Küçükalkan and others (2019) and the study of Kawthar Ibrahim Mr. Attia (2019) and the study of Abd al-Latif al-Ramamneh, Mona al-Hadidi (2018) and

the study of Hong-Ren Chen et al (2015): who agreed that computer-based education had positive effects on children with mathematical learning difficulties and that students were able to Developing good mathematical skills and learning other skills. As for the study of Athanasios Drigas, Ioannis Kostas (2014) Under the title Information and Communication Technology (ICTS) Applications for Teaching Mathematics in Special Education.

The researchers pointed out the important role that these methods play in providing a valuable set of tools for teachers to deal with learning difficulties.

The studies also showed that ICTs applications can build the necessary bridge between students' performance and their participation in school activities and give them the ability to learn by facilitating functional abilities and overcoming learning difficulties, especially in mathematics, and the process includes developing traditional school activities so that there is an opportunity to learn through play. And animation while we find a study by Salman, Shaima Mustafa Mahran (2011) in terms of rebuilding the curriculum in an integrated electronic form in order to achieve the desired goals and determine the appropriate teaching methods to use them, train teachers before or during service to deal with good interactive educational software that helps to take into account Individual differences between learners, as we agreed with the study of Diauddin Muhammad Mutawa (2000) in terms of the importance of using technology in education, especially in the education of children with learning difficulties, due to the communication between the teacher and the student and obtaining direct feedback on their performance, which helped to increase their achievement. Through the previous discussion, the research results can be summarized as follows.

1-There are statistically significant differences between the average ranks of the students 'grades before and after the use of the educational software in favor of post-measurement.2- The presence of statistically significant differences between the average scores of the pre-measurement and the post-measurement in the skill of reading numbers among the tens of thousands, comparison and arrangement of numbers, adding and subtracting numbers consisting of several numbers with regrouping, rounding of numbers, describing probability. in the mathematics course for third-year primary school students in favor of post-measurement.

Recommendations

Recommendations and proposed research through the results of this research on the extent of the impact of computerizing courses in general and the educational software used to improve mathematics skills for third grade primary students in particular, and students with learning difficulties in particular, we put some recommendations and proposals as follows:

1- Providing attractive electronic plans and curricula that take into account the needs of this group in a way that suits their capabilities.

2- Reconsidering the evaluation system (automatic promotion) to put an end to the weak students and trying to advance their educational levels. The automatic promotion system works to transfer the student from one class to another even if he does not exceed and achieve the goals of the previous grade, and this does

not help him to overcome the previous weaknesses, but rather accumulates on him Mathematical concepts and relationships, which prevents him from learning new mathematical concepts and thus makes it more difficult for him to learn mathematics.

3- Providing female teachers specializing in learning difficulties in one school and able to use modern technology.

4- Finding some kind of cooperation between the ministry and the authorities concerned with computerizing the courses to train the teachers on the appropriate way to deal with this category by providing introductory and training courses.

5- Refining the skills of teachers of learning difficulties in designing and producing educational computer programs. To present the different lessons in exciting and effective ways. 6- Educating citizens on the methods of dealing with educational software to paste the skills of their children.

7- Providing educational software that allows training, practice, simulation, and educational games.

8- The need for a variety of methods of providing information; Which are described in various frames according to their purpose; They may be indicative, introductory, test or link frames.

9- Provide flexibility in displaying content; Where the content can be presented in more than one way, at any time, and for an unlimited number of times.

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