

The Effectiveness Of Using Modern Educational Technology In Developing Critical Thinking Skills In Islamic Education For Fifth Grade Students

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Summary

The current research aims to identify (the effectiveness of using modern educational technology in developing critical thinking skills in the subject of the Noble Qur'an and Islamic education among scientific fifth-grade students.) For the purpose of verifying the aim of the research; The researcher approved the experimental design with equal groups of two pre and post-tests: being suitable for the current research, and achieving its objectives, and according to this design, a sample of fifth-grade literary students was selected from the Al-Rowad Prep for Boys in the city of Kirkuk, the Directorate of Education of the Kirkuk Center Intentionally, for the academic year (2020/2020). 2021) and the research sample amounted to (50) students, including (24) students for the experimental group and (26) students, which represent the control group that was taught in the usual way.

The researcher was rewarded between the two research groups in a number of relevant variables, namely: chronological age calculated in months, the general average for the fourth grade, the degrees of Islamic education for the fourth grade, the intelligence test, the academic level of the parents, and the pre-test for critical thinking.

In order to conduct the experiment, the researcher adopted a test consisting of five abilities mentioned above, and these capabilities included (10) positions, each position included (3) paragraphs, thus the total number of paragraphs was (30) items, and the test was characterized by honesty, distinction and stability, and after preparing the research tool, it was applied. Critical Thinking Scale Before, the researcher began applying the experiment to the students of the two research groups on Monday (12/14/2020) by teaching two lessons per week for the two research groups, and it ended on Wednesday (2/24/2021). With two lessons per week for each group, and after completing the application of the experiment, the researcher applied the tool to the two research groups, and after collecting the data, it was analyzed statistically using the statistical program (SPSS) and using the appropriate statistical means for the objectives of the research, the results showed:

1. There is a statistically significant difference at the level (0.05) between the average scores of the experimental group that studies the subject of the Noble Qur'an and Islamic education, according to the effectiveness of educational technology, and the control group that studies the subject of the Holy Qur'an and Islamic education according to the usual method, in the critical thinking test. Dimensional.
2. There is a statistically significant difference at the level of (0.05) between the mean differences between the scores of the students of the experimental group that studies the Holy Qur'an and Islamic education according to the effectiveness of educational technology in the pre and post test of critical thinking.

In light of the results reached by the research, the researcher recommended a number of recommendations, including:

Holding in-service training courses for male and female teachers and paying attention to building students' knowledge of themselves, and paying attention to the use of modern educational technology

in teaching the Holy Qur'an because of its role in raising the level of achievement and critical thinking. It was suggested that studies be conducted on the use of modern educational technology such as (the effectiveness of using modern educational technology in acquiring Islamic concepts among fourth-grade literary students and the development of their contemplative thinking)

chapter one

The problem of the study: The global community today is going through great, rapid and profound changes with the entry of technology in various areas of human life, especially in the field of education, with the integration of new technologies into its development programs and this is a sense of what this new technology offers, which has become one of the most important components of development for any human activity in the twenty-first century.

Despite this, educational technology did not keep pace with the qualitative progress in the use of these modern means in an optimal way, as important problems emerged during the application, for example, the misuse of these means or not exploiting them to the fullest potential in educational situations, with the lack of Internet service in schools, And the lack of equipment, in addition to the inability of students to conduct dialogue and discussion within the program, still many learners and members of the teaching staff possess superficial knowledge in the use of modern educational technology in the form.

The researchers seem that the critical approach distinguishes the subject of Islamic education from many scientific curricula used in other disciplines mainly on the process of criticism available in Islamic concepts, whether during the process of interpretation that are mentioned in the verses or the honorable prophetic hadiths or when teaching the subject on the one hand, and learning the material in its useful form By the students on the other hand, and this means the learner's need to comprehend Islamic concepts that are difficult to understand and require easy and convincing interpretation, and to possess critical thinking skills for Islamic events and facts through the need to develop their critical sense when studying this subject at all levels of study; Without that, a subject loses its value and the purpose of teaching and learning it for all those in charge of education and learners alike. From this point of view, the problem centers on the following question:

What is the effectiveness of using modern educational technology in developing critical thinking skills in Islamic education for fifth grade students?

Importance of the study:

The importance of the study lies in the following matters:

- 1) For the purpose of revealing the effectiveness of using educational technology in developing critical thinking skills in Islamic education, which it is hoped to benefit from in order to work on increasing academic and achievement gains in other academic levels.
- 2) It may contribute to strengthening the educational process based on the use of modern methods of education represented in increasing the students' desire to practice activities so that they become more active and effective in increasing the desire and motivation in the multifaceted activities and events they have.
- 3) It may help the students themselves, as they will interact well with the educational technology means.
- 4) It will provide researchers with a critical thinking test that has the elements of validity and reliability and can be used to measure the effectiveness of educational technology in developing critical thinking skills in societies similar to that of the current study.
- 5) Lack of research and previous studies, to our knowledge, that dealt with educational technology in developing critical thinking skills.
- 6) The possibility of investing the results of the study and benefiting from them in planning the educational program in all academic levels.

Study Hypotheses:

In order to achieve the objectives of the study, a set of hypotheses were developed, namely:

- ❖ Is there a statistically significant difference at the level (0.05) between the average scores of the experimental group that studies Islamic education subject, according to the effectiveness of educational technology, and the control group that studies Islamic education subject according to the usual method, in the post-critical thinking test.
- ❖ Is there a statistically significant difference at the level (0.05) between the average differences between the scores of the experimental group students who study Islamic education according to the effectiveness of educational technology in the pre and post test of critical thinking.

Study Objectives:

The current study aimed to identify (the effectiveness of using modern educational technology in developing critical thinking skills in Islamic education for fifth grade students of science).

Limitations of the study:

The current study is defined as follows:

- Spatial boundary: government schools for morning studies, in Kirkuk governorate, and this area was chosen due to the availability of appropriate application conditions in it and its proximity to the researchers' work.
- Time limit: The current study was applied at the beginning of the second semester of the academic year 2020/2021
- The human limit: limited to learners in the fifth scientific grade in Kirkuk.
- Objective limit: This study was limited to the effectiveness of educational technology represented by (Internet, Classroom, WhatsApp and PowerPoint) in developing critical thinking skills in the subject.

Define study terms:

- A. Educational technology: It is "the methods of education using modern communication mechanisms such as a computer, its networks and multimedia, such as sound, image,

graphics, search mechanisms, electronic libraries, as well as Internet portals, whether remotely or in the classroom. It is the use of technology of all kinds in delivering information to the learner in the shortest time. And the least effort and the greatest practical benefit." (Al-Mallah, 2012, 69).

- B. Development: "It is the effect of the development and progress of the student as a result of his exposure to effective educational variables." (Zayer et al., 2013: 157)
- C. Critical thinking: It is "reflective thinking governed by the rules of logic and analysis. It is the product of multiple cognitive manifestations such as assumptions, interpretation, evaluation of discussions, deduction and critical thinking. It is an evaluation process that uses the rules of logical reasoning in dealing with variables, and it is a complex mental process of skills and tendencies" (Al-Atoum and Al-Jarrah, 2009, 73).

Chapter Two/ Theoretical Aspects

This chapter deals with the theoretical framework and previous studies, the concept of educational technology, the concept of critical thinking and previous studies.

The first topic: educational technology

Technology is a word of Greek origin, a compound of two words, the first: Techno, which means a craft, skill or art, and the second: Logy, which means science or study, hence the word technology means the science of the ability to perform and apply, and Stellar believes that the word technology is taken from the original The Latin Textere means the application of scientific knowledge, then it moved to the French meaning Technique, then to the English meaning Technology, then to Arabic translation (Abbas, 2019, 15).

During the past two centuries, the world has gone through many tremendous changes and developments in the field of teaching and learning, which in turn required changing the curricula and its multiple methods, using educational means in the educational and learning process in audio and light formats, and the term technology in education refers to the

use of modern technological applications, and use them in managing and organizing The educational process and its implementation in any educational institution, and the use of the computer to create a database on learners and teachers in the educational institution or to organize tables and monitor the marks for exams for that institution or inventory educational equipment and materials in laboratories and other works called the term technology in education (Al-Hilah, 2001, 33).

First: Objectives of educational technology: The objectives of educational technology are defined as follows:

- 1) Finding accredited modern educational networks to organize work management and educational institutions.
- 2) Creating an interactive learning environment through modern technologies.
- 3) Giving the learners the opportunity to deal with the open world through information networks.
- 4) Strengthening the relationship between parents and the school and between the school and the external environment.
- 5) Supporting interactions between learners and teachers through the exchange of educational experiences, opinions, discussions and dialogues aimed at exchanging opinions using various communication channels such as e-mail, chatting via WhatsApp, and classrooms. (Al Dhafiri, 2004, 87)

Second: The characteristics of educational technology

- 1) Educational technology is not only electronic devices used in the field of education, but rather an applied approach and the development of my educational process.
- 2) The educational technology plans the educational work until evaluation and development.
- 3) The main objective of educational technology is to raise the level of education.
- 4) It affects educational technology, including all those working in the field of education, including teachers, learners, administration, curricula,

human or non-human learning resources, and methods of communication between the parties to the educational process as a whole.

- 5) Educational technology is concerned with achieving the best conditions and the appropriate climate to achieve good learning, such as place and time, and the use of the best available educational means. (Abbas, 2019 ,55-56)

Stages of educational technology development

- ❖ The concept of communication: This stage witnessed a great development in the concepts of communication on the interaction between the sender and the receiver in the classroom dynamically in the transfer of information, and this leads to achieving understanding between the two people.
- ❖ The visual education movement: It emphasized the importance of making the visual medium an element of the curriculum that depends on looking to present information. These means have developed as a result of using sounds and arriving at the technique of memorizing them through recording machines and the discovery of animated talking films.
- ❖ The audio-visual education movement: attention has been paid to the sense of hearing, which resulted in the addition of the sound element to educational devices and materials, so animated films and video tapes appeared, and from here the concept of audio-visual education appeared. Edgar Dale in the 1950s (1954).
- ❖ The concept of systems: Through this stage, the interest in the communication process increased, and it began with the emergence of early concepts of systems in the field of educational technology.
- ❖ Behavioral sciences: witnessed a positive development in the behavior of the learner, which had a significant impact on educational technology and the conditions in which learning takes place. These behaviors and conditions

mainly affect the course of the educational process.

- ❖ Instructional design: It is a major focus in the field of educational technology, as it is concerned with determining the entry behavior of the learner, determining the characteristics of learners, educational goals and analyzing the content.
- ❖ The current concept of educational technology: as the study and ethical practice of facilitating learning and improving performance (teaching and learning) through the creation, use and management of appropriate technical processes and resources for learning, according to the American Association for Educational Communications and Technology (AECT), in 1994. (Abbas, 2019 83-75).

The roles of the teacher in light of educational technology

- The teacher as an educational conductor and educational developer: The teacher plays this role and he must realize that there are different types of communication skills that help him in his work, namely: the necessity of the teacher's ability to design and produce educational aids and simple tools, and for the teacher to know a source of educational aids and educational technology tools Which he can bring for use in the classroom, and for the teacher to know the types of basic means of communication, their characteristics, capabilities and development.
- The teacher is a leader and a mover of classroom discussions: the teacher helps to transfer different ideas among learners, transfer information and different viewpoints, and leads the discussion and directs it to a better level, using the best teaching aids and educational technology in the classroom.
- The teacher as an educational mentor: When the teacher feels that there is a need to learn certain skills, his role becomes as a mentor, assistant and

supervisor of the work done by the learner.

- The teacher as a member of an educational team: When the teacher uses educational aids and educational technology as complementary methods of the educational process in the classroom, his role will be limited to planning, making a time plan for the use of educational materials, and operating equipment, which requires individual use of teachers according to their levels and abilities. The role of the teacher in the era of educational technology will become more challenging and more responsible than the narrow traditional role that is practiced in many traditional institutions (Al-Hilah, 2001, 81,80).

Critical thinking.

First, a brief history of critical thinking.

The roots of critical thinking are deep in the ancient world, and go back to Socrates, about (2500) BC, when he discovered a method of teaching that made his interlocutors unable to logically justify what they knew by asking questions that shake their confidence in themselves. Then Plato came to codify the ideas of Socrates and Aristotle, who asserted that Things are very different from what they appear to be, and in the Middle Ages, consistent critical thinking appeared in the writings and teachings of thinkers such as Thomas Aquinas, who tried to reconcile critical thinking, which is one of the most complex forms of thinking. In the eighteenth century, the concept of critical thinking had a greater impact on the minds of thinkers, thus developing its tools when it was applied to economic problems, which led to the emergence of the Revolution of Nations for the philosopher (Adam Smith), and in the nineteenth century, the concept of critical thinking expanded to social and human life when it was applied On capitalism, and in the twentieth century, global interest began to increase in critical thinking about life and education, so calls for critical thinking appeared, and among those calls were what McCaffarland emphasized, that the educational goals that modern education seeks to achieve among learners is the development of critical thinking through their education Train them and build their characters. (Abdul Hamid, 2005, 75)

Second: critical thinking skills.

- a) Conclusion: It is the ability to arrive at suggested results, and it is possible to choose between them as a set of alternatives that help to solve the problem.
- b) Interpretation: It is the skill of clarifying the nature of the problem, and analyzing it in a simplified way so that it can be easily understood, whether by the person directly related to it, or by other people who contribute to solving it.
- c) Inference: It is the skill of searching for all the clues that help link the components of the problem with each other, and this electronic evidence may be real, such as papers, documents, or digital, such as documents saved in a computer.
- d) Deduction: It is represented in the ability to know the relationships between certain facts that are given to him, so that he can judge in the light of this knowledge whether a result is completely derived from these facts or not.
- e) Evaluation: It is to ascertain the extent of success in reaching the final and only solution to a problem or a complex issue, while taking care to follow the method of its implementation. Afana, 1998, (46.)

Third: Objectives of Critical Thinking:

- ✓ Assemble all the learner's activities around the task he is dealing with.
- ✓ Helping the learner to develop his feeling of owning the text or the task.
- ✓ Working on challenging the learner's abilities, and encouraging him to compare his views with others.
- ✓ Directing him to contemplate the material available to him, the learning process and its objectives, to distinguish between truth and opinion.
- ✓ Giving the learner the freedom to choose research and investigation. (Al-Atoum and Al-Jarrah, 2009, 82)

Fourth: The components of critical thinking.

1. Knowledge base: the beliefs that refer to the contradiction of information and the beliefs of the individual, i.e., what the individual knows and believes to be true, and it is necessary for a feeling of contradiction to occur.
2. External events: They are the stimuli that provoke a sense of contradiction, and their efficiency plays the role of stimuli of critical thinking on the levels of mental development of the individual.
3. Personality theory: It is the personality trait that the individual derived from the knowledge base so that it is a distinctive character for him (personal point of view); Moreover, the personal theory is the framework in the light of which an attempt is made to explain external events, so there is a sense of divergence or contradiction.
4. Feeling of contradiction or divergence: it begins with a worried look and ends with a search for sources of knowledge, which represents a motivating factor and is determined by the personal view that results in the rest of the steps of critical thinking.
5. Resolving the contradiction: a situation that includes all the constituent aspects of critical thinking, where the individual seeks to resolve the contradiction, including multiple steps, (Fakher, 8, 2016).

Fifth: The characteristics of critical thinking.

- A. The interaction of the elements of the environment that includes time (the time of thinking), the situation and the subject around which the thinking takes place is formed.
- B. Providing a type of argument supported by evidence to work on its evaluation and development.
- C. Relying on sufficient facts and knowledge in the discussion around which the topic revolves.
- D. Being characterized by logical thinking to reach the facts and knowledge to be accessed.
- E. Attention to deduction or conclusion in the final rulings and rules in order to

access the available data and information. (Adel, 2018, 5-4)

previous studies

The first axis: studies dealing with educational technology:

1. Ahmed's study (2019):

This study was conducted in Zarqa Governorate in the Hashemite Kingdom of Jordan. It aimed to identify the degree of use of modern technology in teaching life sciences from the point of view of secondary school teachers in Zarqa schools. The researchers followed the descriptive analytical approach, where the study sample consisted of (88) teachers in the secondary stage in government schools, which was chosen by the intentional method, where the findings showed: that the degree of using modern technology in teaching life sciences came in a medium degree with an arithmetic mean (2.40), and there are no statistically significant differences at the significance level (0.05). Towards the degree of using modern technology in teaching life sciences from the teachers' point of view, according to gender and years of experience. And there are statistically significant differences at the level of significance ($\alpha \leq 0.05$ for the degree of using modern technology according to the school variable and in favor of private schools. (Ahmed, 2019, 6-7)

The second axis: Studies dealing with critical thinking:

2. **Salem study (2016):** This study was conducted in Jordan and aimed to reveal the effect of using blended learning on developing critical thinking skills for seventh grade students. The sample of the study consisted of (80) students in the seventh grade, who were chosen by the intentional method. A phrase divided into three skills: knowledge of hypotheses, interpretation, and conclusion. The results of the study showed that there is a statistically significant difference at the level of statistical significance (0.05) between the two arithmetic averages for the performance of seventh grade students in science on critical thinking skills, where the experimental group who studied using the teaching method based on blended learning excelled compared to the control group who studied using the blended learning method. Traditional (Salem, 2016) 377)

Chapter Three: Research Methodology and Procedures:

First: Research Methodology:

The experimental method was followed to achieve the objectives of the research, because it is a method that is compatible with the research procedures in order to reach the results.

Second: Experimental design: This approach was chosen as the experimental design of the two equal groups (experimental and control) for its suitability in achieving the goal of the study. For both groups, which includes a test to measure critical thinking adopted by the researchers, and Figure (1) illustrates this.

Figure (1) Experimental Design

Comparison between the two groups	post test	Independent variable	Pre-test	Group
	critical thinking test	educational technology	Critical thinking test for both groups	Experime ntal
	for both groups	The usual way		Adjuster

Third: Defining the community Research sample. The research community consists of

fifth-grade students in secondary and middle school day schools in the Kirkuk governorate

center for the academic year (2020-2021). And he got the names of the schools as a school, according to the statistics carried out by the Department of Educational Planning in the General Directorate of Education in Kirkuk Governorate.

1. The research sample:

The researchers selected Al-Ruwad Preparatory School for Boys to apply the experiment, and found in its management the desire to cooperate with him and facilitate his task. We found that Al-Ruwad Preparatory School for Boys contains a number of people for the fifth grade scientific suitable for selecting experiment groups, and the simple random method was used to select Al-Ruwad Preparatory Students for Boys For the two research groups represented by the experimental group, which will be taught using educational technology, and the control group, which will be taught in the usual way, the total number of the two divisions reached (50) students, with (24) students for the experimental group and (26) students representing the control group.

Fourth: The equivalence of the two study groups: Among these variables are:

Table (2) The results of the t-test for the two research groups in the chronological age variable calculated in months

Statistical significance	T value		Freedom degree	Standard deviation	ASM	Sample volume	Group
	Tabular	Calculated					
not a function of 0,05	2,01	0,50	48	8,67	192,5	24	Experimental
				8,023	191,30	26	Adjuster

- Variable average grades last year in the fourth middle school: the total student averages for the fourth literary grade for the academic year (2019-2020) were obtained from the school records, as the arithmetic mean of the experimental group was (62.91) degrees, with a standard deviation (7, 07), while the arithmetic mean of the control group reached (62,53) degrees, with

- Variable chronological age in months for students: Obtaining data related to this variable by looking at the school card, and from the students themselves and by distributing a form prepared for them for this purpose. The year of birth was recorded and the age in months was calculated. After statistical analysis, it was found that the arithmetic mean of the experimental group was (5.192) months, with a standard deviation of (8.67), while the arithmetic mean of the control group was found to be (191.30) months, and a standard deviation of (8.023) t was used after using the t-test. - test) for two independent samples, to find out the significance of the statistical difference between the experimental and control groups, and the results showed that there was no statistically significant difference between the two research groups, as the calculated t-value was (0.50), which is less than the tabular t-value of (2.01) by the level of (2.01) 0.05), and the degree of freedom (48) indicates that the two research groups are equivalent in this variable, and table (2) shows.

a standard deviation of (8.01). (0,05); The tabular t-value was equal to (2,01) greater than the calculated t-value (0,176) and with a degree of freedom (48), and this indicates that the experimental and control groups are statistically equivalent in the average of the last year for the fourth grade, and table (3) shows this.

Table (3) Equivalence in the average grades of the last year in the fifth scientific grade

Statistical significance	T value		Freedom degree	Standard deviation	ASM	Sample volume	Group
	Tabular	Calculated					
Not functional of 0,05	2,01	0,176	48	7,07	62,91	24	Experimental
				8,01	62,53	26	Tabular

3. Equal scores of students in Islamic education subject for the last academic year:

The average of students in Islamic education for the academic year (2019-2020) was obtained from the school records, where the arithmetic mean of the experimental group was (64.0), with a standard deviation of (9.31), while the arithmetic mean of the control group was (66,38 degrees, with a standard deviation of (8,67), and to identify the significance of the

difference between the two averages, the researchers used the t-test for two independent samples to find out the significance of the statistical differences at the significance level (0.05), as the tabular t-value was equal to (2.01) is greater than the calculated t-value (0.93) and with a degree of freedom (48), and this indicates that the experimental and control groups are statistically equivalent in the average of the last year for the fourth grade of middle school, and the table (4) shows this.

Table (4) The average variable for the last year in Islamic education

Statistical significance	T value		Freedom degree	Standard deviation	ASM	Sample volume	Group
	Tabular	Calculated					
Not functional of 0,05	2,01	0,93	48	9,31	64,0	24	Experimental
				8,67	66,38	26	Tabular

4. Parents' educational level variable: the researchers relied on the equality of the two research groups in the academic achievement of the parents on the information recorded in the school card for each student and available to the educational counselor in the school. The information available to him, and the levels of parents' achievement were divided according to the educational level they obtained, and

according to three categories, and using (chi-square), it was found that the calculated value (1.013), which is less than the tabular value (5.99) at a confidence level (0.05) and with a degree of freedom (2), and this indicates the parity between the two research groups in the academic achievement of parents, and table (6) shows.

Table (6) Parity in the parents' educational level variable

	Khai value			Parents' educational level	Group
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Indication level 05.0			Freedom degree	Number	High school and less		Primary school and less	
	Tabular	Calculated						
Non functional	5,99	1,013	2	24	10	9	5	Experimental
				26	10	6	10	Adjuster

5. The educational level variable for mothers: the data collected from the two research groups in the academic achievement of mothers was relied on on the school card, and it was also ascertained from the students themselves directly through a form prepared by the researchers for this purpose, Annex (5), and the mothers' achievement levels were divided according to the level According to three

categories, and using (chi-square), it was found that the calculated value (1,058), which is less than the tabular value (7,814) at a confidence level (0.05) and a degree of freedom (3), and this indicates the existence of parity between the two groups Research on the academic achievement of mothers, and Table (7) illustrates this.

Table (7) Parity in the variable of the educational level of the mothers

Indication level 05.0	Khai value		Freedom degree	Number	Mothers educational level			Group
	Tabular	Calculated			Postgraduate studies and above	High school and less	Primary and less	
Non functional	7,814	1,058	2	24	10	9	5	Experimental
				26	10	6	10	Adjuster

6. The scores of the pre-test in critical thinking: Before the start of the experiment, the researchers applied the critical thinking test to the two groups in order to verify the degree of equivalence between the two research groups in this test. The scores of the experimental group were (26.12) degrees, with a standard deviation of (8.03), while the average scores of the control group were (27,23) degrees, with a standard deviation of (8.68), and when using the t-

test for two samples. Two independent studies to find out the significance of the statistical differences at the level (0.05), as the tabular t-value was (2.01), greater than the calculated t-value (0.46) and with a degree of freedom (48), and this indicates that the two research groups are statistically equivalent in the test scores. The tribal thinking of critical thinking as shown in Table (8).

Table (8) Pre-test scores for critical thinking

Statistical significance	T value		Freedom degree	Standard deviation	ASM	Number	Statistic Group
	Tabular	Calculated					

Functional level 0,05	2,01	0,46	48	8,03	26,12	24	Experimental
				8,68	27,23	26	Adjuster

Fifth: Controlling some extraneous variables:

The factors affecting the internal safety of the experimental design:

- Selection of the sample: To overcome the impact of individual differences between the students of the experimental and control groups, the two research groups were chosen randomly using the lottery method.
- Experimental conditions and accompanying accidents: They mean natural and unnatural accidents that occur such as rain, snowfall and hurricanes, so researchers were able to avoid the impact of this factor.
- Maturity factor: the experiment is exposed throughout the duration of its conduct to such cases, whether they were group leaving, interruption or dropout, with the exception of individual absences, which the two research groups were exposed to and were almost equal.
- Research tool: a unified tool was used, which is the critical thinking variable, and this extraneous variable was controlled by using the tool and applying them to the two research groups at the same time after making sure of their validity, stability and appropriateness of its paragraphs.
- The effect of the pre-test: The effect of this factor was controlled by conducting a pre-test for the experimental group and the control group at the same time, and giving an appropriate period between the application of the pre- and post-tests for the members of the two research groups.
- Statistical regression: Some researches, especially therapeutic ones, choose the highest and lowest levels when doing the experiment, and then a statistical regression occurs

when calculating the results towards the general average. The researchers conducted two research groups.

Factors affecting the external safety of the experimental design: -

1. Effect of experimental procedures: In order to protect the experiment from some procedures that may affect the dependent variable, an effort has been expended to reduce the impact of this factor on the course of the experiment. This is represented by:

- Educational supplies: The researchers emphasized that the educational aids prepared in the experiment should be presented to the two research groups in an equal manner in terms of oil pens, blackboard, topics to be taught and concept maps.
- Duration of the experiment: The duration of the experiment was uniform and equal for the students of the two research groups, and it is part of the second semester, as it started on Tuesday (2/18/2020), and ended on Thursday (23/4/2020).
- School building: The experiment was implemented in one school, Al-Rowad Preparatory School for Boys, due to force majeure and the Corona pandemic that affected the country and the world and worked to disrupt school hours, but he decided to use e-learning using the communication platform (Google classroom), for the purpose of completing procedures Experience.
- The teacher: The researchers studied the control and experimental group by themselves in order to ensure the best application of the teaching method as well as to remove the impact of bias, and lack of knowledge that arise from teaching more than one teacher, to give the results of the experiment a degree of objectivity and accuracy.
- Confidentiality of research: The prior agreement between researchers and the school administration is to maintain the confidentiality

of the experiment because of its impact on the accuracy of the results of the experiment.

- Distribution of quotas: The researchers controlled this factor through its equal distribution of lessons between the two research

groups, and with the cooperation of the school administration, in organizing the weekly schedule for the history subject to provide equal opportunities of time for the two groups alternately. My search group.

Figure (2) The distribution of the weekly lessons to the two research groups

Time	Class	Day	Time	Class	Day	Group
9,30	Third	Wednesday	8,00	First	Monday	Experimental
8,00	First		10,30	Fourth		Adjuster

Sixth: Research Requirements:

- ❖ Defining the scientific subject: Before the start of the experiment, the topics to be studied were determined, the trial period, which is the first, second and third units of the Islamic education subject for the academic year (2020-2021).
- ❖ Preparing the teaching plan: the researchers prepared a teaching plan according to the image of the believers who will study it during the experiment, according to the educational technology for teaching the students of the experimental group, and according to the usual way of teaching the students of the control group. The researchers presented two models of this plan to a group of experts and specialists in Islamic education and its teaching methods, as well as in the field of educational and psychological sciences, to seek their opinions, suggestions and observations, for the purpose of improving the formulation of that plan, and making it sound and valid to ensure the success of the experiment.

Seventh: Setting up the search tool:

1. Drafting the test items:

It was relied on adopting a test after reviewing several tests mentioned in the previous studies reviewed by the researchers, so they decided to adopt a test consisting of five abilities mentioned above. These abilities included (10) positions, each position included (3) paragraphs, and thus The total number of

paragraphs is (30), as well as instructions for students explaining how to answer the test paragraphs, giving an illustrative example for each of the test capabilities, to facilitate the answer.

Validity of the test:

The test is considered honest if it measures what it was designed to measure, i.e. it measures the function that it claims to measure and does not measure anything else about it or in addition to it. (Melhem, 2002, 273), and in order to verify the validity of the test adopted by the researchers, and to achieve the goal that was set to measure it, it was verified:

❖ Virtual honesty:

In order to verify the validity of the test, and measure what it was designed for, and its relevance to the level of the fifth grade students in science, the test items were presented to a number of experts in the field of Islamic education and its teaching methods, as well as in educational and psychological sciences, to express their opinions and observations on the validity of the items for measuring What it was developed for, so the researchers looked at the opinions and observations of the arbitrators, and by using (chi-square) to compare the responses of those who agreed and those who disagreed with the experts on each of the test items, to find out the differences between the opinions of the experts at a confidence level (0.05) and a degree of freedom (1), where each field had two positions, and each position contained three paragraphs,

and all of them were statistically significant, and after they obtained their opinions and suggestions, they modified a number of paragraphs, and none of them were deleted, because they obtained the approval rate, which the researchers identified as (80%) and above. From the total number of experts, and thus the test remained the same.

2.The exploratory experience:

For the purpose of ensuring the clarity and validity of the test paragraphs, the time taken to answer it, and analyzing its paragraphs statistically and to ensure its stability, the test was applied to a pilot sample from the same research community, which consisted of (100) students at Jaq Secondary School for Boys and Al-Furat Preparatory School, within the schools of the Kirkuk Education Directorate. The students were asked to read the test instructions first with accuracy to know how to answer its paragraphs, and the researchers concluded through the exploratory application that they conducted that the paragraphs are appropriate, clear and there is no ambiguity in them, and after applying the critical thinking test to the exploratory sample, it was found that the average time for answering the test (35,42) minutes and after dividing the total time taken for all students by their number of (100) students, and informing the students of the test date, the researchers personally supervised it.

3.Statistical analysis of the test items:

The following statistical analyzes were carried out:

- Discrimination coefficient: When calculating the discrimination coefficient for each of the test items, it was found that it ranges between (0.22-0.70), and thus all items are considered acceptable, and the item whose discrimination coefficient is (0.20) and above is considered an acceptable item. (Al-Zahir et al., 1999, 130)
- The stability of the test: The internal consistency method (Cronbach's alpha) was chosen, which is one of the important methods in measuring stability, as the value of the reliability coefficient was (0.78), and this

indicates that it is a good and acceptable stability coefficient, as the tests are good when the coefficient of stability reaches Its stability is (0.65) and above (Abu Allam, 2000, 165).

Eighth: Application of the experience:

- 1) Execution of the experiment: After completing the experimental procedures of parity between the two groups, preparing the teaching plan, and preparing and preparing the research tool (the critical thinking test), the researchers began applying the experiment to the students of the two research groups on Monday (14/12/2020) by teaching two lessons per week to my groups. The search ended on Wednesday, February 24 (2021).
- 2) Application of the Critical Thinking Tribal Test: The tribal test was applied to the experimental and control groups at the beginning of the experiment's application on Sunday (12/13/2020).
- 3) The two research groups studied according to the teaching plans prepared by him, based on the method of educational technology in teaching the students of the experimental group, and the traditional method of teaching the students of the control group.
- 4) The post-critical thinking test was applied on Wednesday, 24/2/2021, on the students of the experimental and control groups at the same time.

Ninth: Statistical Means:

The following statistical means were used in the research procedures.

- 1) T-test for two independent samples: used to extract the discriminatory power of the items of the research test.
- 2) Square (chi2): Use it to find out the differences between the two research groups in the academic achievement of the parents.
- 3) Cronbach's alpha equation: It is used to find stability in the critical thinking test.
- 4) Discriminative power factor of the items: to extract the discriminatory power of the test items:

- 5) T-test for two correlated samples: to find out the differences between the pre and post tests for critical thinking

Chapter five

First, show the results:

History subject according to the usual method, in the post-critical thinking test), the average scores of the experimental group students were (167.96), with a standard deviation of (16.86), while the average scores of the control group

students were (156.17), with a deviation of 16.86. normative (10.48), as it is noted that there is a difference between the two averages in favor of the experimental group, and to measure the significance of the difference between the two means, the researchers used the t-test for two independent samples, as the calculated t-value amounted to (3,224), which is greater than the t-value The table amounting to (2,000), at the level of significance (0.05) and the degree of freedom (56), and Table (9) shows this.

Table (9) The results of the T-test for students of the two research groups in the post-test critical thinking

Statistical significance	T value		Freedom degree	Standard deviation	ASM	Number	Group
	Tabular	Calculated					
Functional of 0,05	2,000	3,224	56	16,86	167,96	28	Experimental
				10,48	156,17	30	Adjuster

Which indicates that there is a statistically significant difference between the average scores of the students of the two research groups and in favor of the experimental group, and accordingly the first null hypothesis was rejected, which states that there is no statistically significant difference at the level (0.05) between the average scores of the experimental group that is studying History subject according to the effectiveness of educational technology and the control group that studies history subject according to the usual method in the post-critical thinking test.

B. The result of the second null hypothesis:

For the purpose of verifying the second null hypothesis, which states that (there is no statistically significant difference at the level (0.05) between the average differences between the scores of the experimental group students

studying history according to the effectiveness of educational technology in the pre and post test of critical thinking), as The arithmetic mean of the experimental group's scores for tribal critical thinking was (160.75), with a standard deviation of (7.25), and the arithmetic mean of the experimental group's scores for dimensional critical thinking was (167,96), with a standard deviation of (16.86), and the researchers noted that There is a difference in the two tests and in favor of the post test, and to measure the significance of the difference between the two averages, the researchers used the t-test for two related samples, where the calculated t-value amounted to (2,278), which is greater than the tabular t-value of (1,99) with a degree of freedom (27).), and at the level of significance (0.05), that is, the result is statistically significant and in the interest of the dimensional critical thinking test, and table (10) illustrates this.

Table (12) test results for the pre and post application of critical thinking for the experimental group

Function	T value		Freedom degree	Contrast	Standard deviation	ASM	Application	Group
	Tabular	Calculated						
Functional level 0,05	1,99	2,278	27	52,56	7,25	160,75	Previous	Experimental
				284,26	16,86	167,96	After	

Thus, it rejects the second null hypothesis, which states that, there is no statistically significant difference at the level (0.05) between the average differences between the scores of the experimental group students studying history according to the effectiveness of educational technology in the pre and post test of critical thinking.

Discussion of the results:

In light of the presented research results, the following becomes clear

- 1) Interpretation of the result related to critical thinking: After analyzing the results, it appeared that the students of the experimental group outperformed the students of the control group in the post-critical thinking test, and the reasons for this are due to:
- 2) The use of educational technology develops critical thinking in Islamic education for the students of the experimental group by presenting the concepts and focusing on them.
- 3) The current study focused on providing students with freedom to ask their questions and satisfy their needs.
- 4) The effectiveness of educational technology develops higher levels of thinking, which develops the ability to acquire various knowledge, and develops their critical thinking skills.

Third: Conclusions:

The following can be concluded:

- ❖ The possibility of applying the effectiveness of educational technology as an effective means in improving the skills of fifth-grade students in the subject of Islamic education.

- ❖ The feeling of students in cooperative groups that they perform their duties collectively and cooperatively as a work team.
- ❖ Educational technology provides the opportunity for students to search for facts and information, so they are faced with situations that require multiple roles that lead to understanding and application, or what the students have discovered on their own.
- ❖ The use of educational technology in teaching this subject requires an extra effort from the teacher.

Fourth: Recommendations:

In light of the research results, the researchers recommend the following:

- 1) Encouraging Islamic education teachers to use modern educational technology (such as the educational platform and the zoom program).
- 2) The necessity of holding training courses for teachers in general, and for teachers of Islamic education, is crucial to how to use the above-mentioned modern means in education.
- 3) Paying attention to diversity in the strategies and methods of teaching this subject, and moving away from the common learning methods in our schools in general, and paying attention to students' building of knowledge themselves, and not presenting it to them in its final form; So that their learning is meaningful learning.

Fifth: Suggestions:

To complement this research, we suggest conducting subsequent studies, including:

- Conducting a study to identify the effectiveness of educational technology in the achievement of fourth and sixth literary grade students in Arabic language and developing their critical thinking and other materials and vocabulary.
- Conducting a study to identify the impact of the effectiveness of educational technology in correcting the misunderstanding of Islamic concepts among students of the literary fifth grade and developing their attitude towards it.

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