

THE EFFECT OF USING INQUIRY LEARNING SUPPORTED BY INTERACTIVE VIDEO IN MATHEMATICS AMONG HIGH-ACHIEVING SCHOOL STUDENTS AND THEIR STRATEGIC THINKING

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Abstract: *The purpose of the current study is to test the following hypotheses in order to determine the impact of interactive video-supported inquiry learning on the strategic thinking of second-year intermediate math students in high-achieving schools: The average scores of the students in the experimental group, who studied using an interactive video to support their inquiry-based learning, do not differ statistically significantly from those of the students in the second group, who studied the same material using the standard method, on the strategic thinking test at the significance level (0.05).*

A quasi-experimental design was chosen for both groups. The research sample consisted of 90 students, 45 students for both groups, and then two halls out of five halls were chosen randomly. Accordingly, the internal and external soundness of the experimental design was verified. The two groups were rewarded statistically on the variables (previous mathematics achievement, strategic thinking, chronological age in months, and previous knowledge test), and a set of teaching plans (42) were prepared for both groups. The interactive video was designed, built and directed according to the inquiry learning strategy in terms of scientific steps in order to keep pace with technological development and the extent of student response. During the experimental application period, a test for strategic thinking was constructed and consisted of 15 items. Following the administration of the test, the researcher examined the data, which revealed a statistically significant impact of inquiry learning bolstered by video and interactive learning on the experimental group's students' superior performance over the control group and their strategic thinking. The study produced recommendations.

Research Problem

Through the researcher's work and experience in one of the outstanding schools, which is considered one of the modern and modern schools in the Iraqi Ministry of Education, it is considered one of the good school environments in terms of construction, school equipment, and modern educational technologies such as television screens, smart boards, and data displays, but they are not used

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effectively and continuously. Because mathematics is one of the most difficult subjects to learn and teach, due to its abstraction in concepts and relationships. Mathematical things are abstract things far from concrete that need representations using modern technologies, especially with the presence of artificial intelligence, which has imposed itself in education strongly through its multiple applications. Due to the presence of weakness among students among outstanding students in some strategic thinking skills, it became clear to the researcher through analyzing the answers of a sample of mathematics teachers in schools for outstanding students to the questionnaire that she presented to them. where it was found that 80% stressed their need to use technology in teaching mathematics, and 70% diagnosed weakness in They studied critical thinking skills, future thinking, systems thinking, creative thinking, and analytical thinking, which are strategic thinking skills. Hence, the researcher confirmed that there was a problem among high-achieving school students and those they had weakness in some of the strategic thinking skills, and she decided to use inquiry learning supported by interactive video to study its impact on achievement and strategic thinking by answering the question. ((What is the impact of using inquiry learning supported by interactive video in strategic thinking for high-achieving school students?))

Research Importance

the researcher can conclude the importance of her research lies in the following points:

- 1- Using modern teaching methods, including inquiry learning supported by interactive video, which may contribute to addressing some of the teaching problems that the educational institution in Iraq suffers from.
- 2- The importance of the theoretical research stems from the importance of the dependent variable (strategic thinking), which is one of the prevailing types of thinking that needs to be developed with the emergence of the concepts of the era of the knowledge and digital economy.
- 3- This research provides theoretical and applied data on the effect of using inquiry-based learning supported by interactive video on the mathematics achievement of outstanding middle school students and their strategic thinking .

Research Goals

The current research aims to the following ((Identifying the impact of inquiry learning supported by interactive video on strategic thinking)) search parameters The scope of the current study will be restricted to the following:

1. For the academic year 2023–2024 AD, second-grade intermediate pupils in exceptional government secondary schools under the General Directorate of Education in Baghdad, Al-Karkh.
2. The academic year 2023/2024 AD's second semester
3. The second intermediate grade mathematics textbook, revised fifth edition for the year 2023 AD, specifically covers coordinate geometry in chapters six and statistics and probability in chapter seven.
4. Strategic thinking skills (futuristic thinking, systems thinking, critical thinking, analytical thinking, creative thinking)

Theoretical Framework

Inquiry Learning

The Importance of Inquiry Teaching

The direct presentation method in science classes is due to its simplicity and effectiveness in conveying information. While direct presentation methods focus on facts, laws, and theories, use the laboratory to verify, and focus on applying knowledge, we find that investigation focuses on understanding the structure of science and its processes. It integrates laboratories and class discussions, and focuses on mental skills. It also encourages thinking, questioning, discussion and dialogue, provides several levels and methods of investigation, increases interest in the student, avoids resorting to authority, resorting to authority, and focuses on “how do I know” instead of “what should I know”. [14]. It has been found that survey programs in middle schools in general accelerate student performance, and in particular; When linked to laboratory skills, graphing skills, and data interpretation. Evidence indicates that inquiry teaching increases scientific literacy, understanding of science processes, science vocabulary, understanding and critical thinking, positive attitudes toward science, higher achievement on procedural knowledge tests, and building mathematical-logical knowledge Make them confident in their abilities [14, 20]. Inquiry learning is considered an organized systematic method in the educational process. It has an important role for researchers in stimulating scientific thinking and developing the mental abilities of learners. Inquiry learning is concerned with the structure of science and its procedures. It harmonizes laboratories and classroom discussions. It gives many levels and methods of investigation. It cares about the student and does not resort to the educational institution as an authority. It enhances the student’s understanding of his connection to it. Laboratory skills, graphing, and data interpretation. It also enhances scientific culture, science vocabulary, understanding of its processes, and critical thinking. The researcher chose deductive inquiry as a method for her research. (The researcher adopted the definition of inquiry learning and its steps according to what Al-Khazraji stated in his book).

Steps For Inquiry Learning

Defining the Problem or Question

The first step of inquiry usually begins with a situation that involves posing a problem or questions or raising some contradictions that stimulate the learners’ thinking in a way that stimulates their motivation.

Assuming assumptions

Hypotheses are prior possibilities or proposed solutions to the problem that is the subject of the research.

Verifying the Validity of the Proposed Hypotheses Through Experimentation

Which requires several procedures called the process of analyzing information and evidence and among these procedures is familiarity with information, evidence, and

facts and their collection.

Application and Interpretation

This is the result of the scientific efforts exerted in tracking the problem and finding a solution to it, or in light of the results of testing the validity of the hypotheses. Learners reach conclusions or generalizations based mainly on the content of the hypotheses supported by evidence and data, and then work to apply them in new situations between them and the problem that was the subject of the investigation. There is sufficient similarity between them and the problem that was the subject of the investigation [8].

Inquiry Learning Objectives

1. Increasing learners' desire and curiosity
2. Providing learners with Inquiry skills, problem solving, and using the scientific method of thinking [13].
3. Encouraging learners to exchange ideas and interact with each other as a basis for group work [18].

Types of inquiry learning

The inquiry learning can be divided into four types

- A) Inductive investigation
- B) Deductive inquiry
- C) Discovery
- D) Problem solving [12]

Stages of inquiry learning

1. Observation: collecting information about a specific phenomenon or incident.
2. Classification: Classifying information into specific groups with relationships of some kind.
- 4- Analogy: reporting the essence of things by analogy with something known to him.
- 5- Prediction: The ability to predict the occurrence of similar phenomena in the future.
- 6- Description: describing the phenomenon, event, or substance in a way that distinguishes it from others.
- 7- Conclusion: The final stage of the discovery process, where the learner concludes with a comprehensive generalization It contains all the previous mental processes.

Interactive Video

Zaitoun [21] indicates that the term interactive is: active interaction in the lesson and control of the educational sequence of the study program, through the responses issued by the learner to the information given, and an interactive dialogue and reciprocal influence between the learner and the computerized instructional program that allows for the adaptation to the learner's needs and their response to those needs, while also granting the learner a suitable degree of autonomy over their education and their active participation in the creation of knowledge.

Concept for an interactive video One of the developments of the modern world is

interactive video, which shows information in an audio-visual manner based on the responses of the students. A display screen, which is a component of an integrated unit that includes a computer, a means of inputting data, and another for storing, is used to display the image and sound. Video clips can be used in interactive videos to deliver information. Text, graphics, and audio in still frames; segmented video snippets displayed on distinct screens in interactive video [15].

The researcher summarized through the previous definitions and concepts that ((The interactive video is an educational method that relies on the use of educational videos in order to deliver the educational material to the class students, which can be watched and replayed by controlling the display of the video Through the using of technological techniques (computer) in order to provide interaction between the teacher and the students.

Benefits of Interactive Education

The benefits of interactive education are as follows:

- Achieving fun and enjoyment for students: Interactive education brings an element of fun and enjoyment to students, which makes them more interested in learning and makes it easier for them to memorize information.
- Saving time and cost: Interactive education saves time compared to traditional education, and is also less expensive in terms of resources, especially if e-learning is adopted alongside it.
- Developing critical thinking: This type of learning pushes students to expand their intellectual abilities, as it gives them the necessary tools to achieve deep learning based on participation and exchange of opinions, which enables students to be able to analyze topics and apply them.
- Increased focus: Cooperative learning has a positive effect in attracting students' attention and increasing their focus on educational content, due to the diversity of educational strategies and activities.

Components of Interactive Video Systems

Al-Aklabi [4] showed that interactive video systems consist of the following components:
First: Educational devices: Ware Interactive Video Hard

1. Computer: Computer
2. Input Tools: Tools Input
3. Audio devices: Sounds
4. Storage means: Devices Storage

Information Management: Management Information

Interactive Video Programs: Video Interactive Programs

1. Authoring systems
2. Language of writing

Interactive Video in the Field of the Educational Process (Uses and Applications)

Some researchers in the field of the educational process have been interested in identifying the effect of using interactive video on academic achievement or interactive video on acquiring skills and educational experiences. The following represent the use in the field of the educational process : [15].

1. Interactive video is a teaching tool for things to be shown, not just talked about.
2. It is effective for things that are difficult to explain and talk about well through printed materials.
3. If the learner needs to interact with the lessons given, the interactive video is essential and important in this regard.

The researcher believes that there are benefits in using interactive video in the field of education, the most important of which is improving the traditional methods currently used in teaching, where a student is encouraged to learn and conclude through the strategy of investigation and video at the same time. Therefore, through this thesis and the research presented, the researcher clarified the importance of Interactive video and urged the teaching staff and those in charge of the teaching process to adopt this method to raise the efficiency of the educational process.

Third: Strategic Thinking

The Concept of Strategic Thinking

Abu Bakr Mustafa defined strategic thinking as: "A specific intellectual path with its own itinerary that relieves the mind from the trouble of purifying tangled thoughts from impurities and perceptions that the mind does not need while thinking about a specific topic with specific goals." [1].

"This is the method through which officials are able to direct the organization, starting with the transition from administrative processes and activities, and ultimately making the best possible use of the organization's capabilities in a fundamental way focused on the future without neglecting the past." [1].

The Importance of Strategic Thinking

The significance of strategic thinking as demonstrated by the following:

1. Establishing and communicating priorities to staff members.
2. Gain the capacity to influence the future.
3. For humans, vision clarity is comparable to sight and insight.
4. Lowering the proportion of mistakes made when handling circumstances and coming to judgments.
5. Ongoing modernization and development, which necessitates performance improvement.
6. Handling facts and events skillfully by making use of time and equipping oneself with an adequate supply of human, material, and intellectual resources. [6]

Strategic Thinking Skills

The strategic thinking skill include a set of mental skills that express this type of thinking as a whole, as it is a set of many sub-skills for several types of thinking, including Systems thinking, critical thinking, creative thinking, future thinking and analytical thinking [17].

Systems Thinking

Systems thinking is a simple way of thinking that aims to give the learner a comprehensive view of complex situations and problems.

Systems Thinking Skills

1. Analyzing the main systems into subsystems, that is, the ability to divide the learned material and understand the relationships between these parts.
2. Understanding the relationships within the system.
3. Reassembling systems from their components, which means the ability to assemble parts with different types of content into a unified structure that brings these parts together.

Critical Thinking

Aicha [3] defined critical thinking as a cognitive mental process characterized by emotional skills that, when consuming information, are linked to the abilities and skills of classification, comparison, interpretation, remembering, and observation of ideas, which overlap with the skills of mental contemplation, logical reasoning, extrapolation, inclination, and orientation such as the tendency to question, investigate evidence, knowledge, and predict assumptions. Which includes the ability to ask questions, generate solutions, flexibility, and evaluate arguments to make a decision regarding topics based on specific criteria and criteria that came under the cognitive mental skills dimension and the emotional skills dimension.

Critical Thinking Skills

Afana [2] states that critical thinking includes a number of skills, which we summarize as follows:

1. The skill of predicting assumptions
2. Deduction skill
3. Conclusion skill

Creative Thinking

Creativity is one of the secrets of excellence in the fields of life, and it enables its owner to discover creative approaches to alter the environment around us and eliminate monotony and repetition, creativity has emerged as a necessary component of transformation and growth processes [7]. Rogers defines creativity as the emergence of a new production resulting from an interaction between the individual and the material of experience. From this, we conclude that creative thinking is the ability to think about something in a new, different way, as a solution to a problem. Everyone wants a solution to their daily problems and the challenges that arise for them, and that creative thinking is not limited to artistic or other types. It is a skill that anyone can nurture and develop [7].

Creative thinking skills

Al-Rabghi [10] pointed out the most important creative thinking skills that researchers tried to measure, which are as follows:

1. Fluency
2. Flexibility
3. Originality

Future Thinking

Defined by Al-Naim and Al-Shalhoub [9] (as a system of sequential and integrated mental processes that rely on data, information and experiences available from the past and present and exploiting them, to develop intuitive or based future solutions and perceptions Scientific.

Future thinking skills

There are many classifications of future thinking skills:

1. Expectation Skill
2. Predicting Skill
3. Future Speculation Skill

Analytical Thinking

Analytical thinking is one of the most important thinking skills that an individual acquires through training and practice. It includes the individual's ability to imagine, express, and analyze problems and topics, in addition to developing solutions to those problems and identifying the causes through available information and the ability to make decisions. It is a latent mental activity that cannot be observed. Directly, but it is inferred from the effects that appear in his skills [16].

Analytical Thinking Skills

Sn	Thinking Types	Strategic thinking skills
1	Systems thinking	1. Analysis of the main systems into subsystems 2. Understanding the relationships within the system 3. Reassembling the systems from their components
2	critical thinking	1. The skill of forecasting assumptions 2. Deduction skill 3. Conclusion skill
3	creative thinking	1. Fluency 2. Flexibility 3. Authenticity
4	future thinking	1. Anticipation skill 2. Forecasting skill 3. Future visualization skill
5	Analytical thinking	1. Determine the relationships between processes 2. Identify the causes and results 3. Relay

1. Defining relationships between processes and objects
2. Identifying Causes and Effects The ability to identify the major and most powerful causes or consequences of past actions and events.

Sequence: Arranging incidents, paragraphs, objects, or contents in an organized and precise manner, that is, placing things in a specific organization that is chosen with great care.

Schools of Outstanding Students

Schools of Excellence are schools established in the Iraqi Ministry of Education in

2019 to relieve pressure on schools of distinguished students and Baghdad college schools. General education curricula are adopted in them, and the study of the French language is optional. They receive students graduating from primary school who obtained an average of 90% or above, and instructions for admission to schools are issued. Outstanding students are appointed every year by the Office of the Ministry of Education to organize admission and set regulations for performing the ministerial achievement test according to the capacity of each school. Where it is represented, Leadership in education to prepare a generation that loves learning (lifelong learners). To develop the knowledge and skills of outstanding students and to invest their minds in serving society to prepare educated, productive men who contribute to serving and developing their country socially, economically and scientifically, and for education to be participatory between the family and the school in a sound educational environment [19].

Previous Studies

First: Research and Studies Dealing with Inquiry Learning

A study [11] conducted in Iraq, entitled the effectiveness of educational-learning design according to the progressive inquiry model in middle school students' achievement and mathematical excellence skills.

University/college	Country	Academic year	Name of researcher
University of Baghdad, College of Education, Ibn al-Haytham	Iraq	2022	Nour Muhammad Jassim Al-Obaidi
Determining the impact of the progressive inquiry approach on middle school students' achievement and proficiency in mathematics when it comes to teaching-learning design			Purpose of the study
63students			
• There were thirty-two pupils in the experimental group.			Sample volume
• There were 31 pupils in the control group.			
Instructional design according to the progressive inquiry model			Independent variable
• Collection			Dependent variable
• Mathematical excellence skills			
• Achievement test			Study tool
• Mathematical excellence test			
1. Pearson correlation coefficient			The most important statistical methods
2. Cronbach's alpha equation			
3. Keuder-Richardson equation			
4. 4- T-test			
The results showed that, there was a statistically significant difference in favor of the students of the experimental group who studied the subject according to the instructional-learning design and among the students of the control group who studied the subject according to the usual method.			The most important results of the study

Second: Research and Studies Dealing with Strategic Thinking

Study Al-Janabi [5] conducted in Iraq and its title The Impact of an Instructional-Learning Design According to the Caffarella R.S. Model on Achievement among Fourth Practical Grade Students in Mathematics and Strategic Thinking Skills.

University/college	Country	Academic year	Name of researcher
University of Baghdad	Iraq	2022	Haider Saleh Al-Janabi
To build an educational-learning design according to the Caffarella R.S. model and then determine the effect of this educational-learning design on the achievement of fourth-grade practical students in mathematics and strategic thinking skills.			Purpose of the study
60 students			
•The experimental group consisted of 30 students			Sample volume
•The control group was 30 students			
Instructional-learning design according to the Caffarella R.S. model			Independent variable
Achievement and strategic thinking skills			Dependent variable
• Achievement test			Study tool
• Mathematical excellence test			
• SMA			
• standard deviation			
• variance			
• Levene's test			The most important statistical methods
• Binary value			
It is evident that the educational design, which employed the Caffarella R.S. model for content organization and analysis, encouraged students to engage in critical thinking, act in real-world scenarios, and communicate with one another as well as with their teachers. It also improved student achievement.			The most important results of the study

Research methodology and procedures

Research Methodology and Design

The experimental design is a strategy and work plan that outlines how the experiment will be conducted as well as the conditions and variables around the phenomenon being examined and the observations made about it. Therefore, the researcher adopted a quasi-experimental design with two equal groups for a control group and an experimental group with a post-test to measure achievement and a post-test for strategic thinking skills. The design can be express in the following diagram.

Table 1: Experimental Design.

Measure the Dependent Variable	Dependent Variable	Independent Variable	Equivalence Variables	Groups
• Achievement test in mathematics • Strategic thinking test	• Achievement • Strategic thinking	Inquiry learning supported by interactive ideo	- Age in months - Previous achievement in mathematics	Experimental
		The usual method	- Intelligence - Strategic thinking	Control group

The Research Community

The research community includes the students who constitute the subject of the research problem, as the research community includes all second-grade intermediate students in the outstanding schools of the First Karkh Education Directorate in Baghdad Governorate for the academic year 2023-2024, who number 633 students according to the statistics of the First Karkh Education Directorate.

The Research Sample

In light of the experimental design, the researcher chose (a purposive sample) the First Outstanding Secondary School for Boys affiliated with the First Karkh Education Directorate in Baghdad Governorate, due to the small number of outstanding schools in Baghdad. The researcher found that the school (sample) contains five halls for the second intermediate grade, after obtaining the approval of the Directorate. Al-Karkh First Education School in Baghdad Governorate, and in coordination with the school administration, the researcher collected information related to second-grade intermediate students for the purpose of conducting statistical parity. The researcher randomly chose Hall No. (3) to represent the experimental group that was studying according to inquiry learning supported by interactive video, their number was (45) students, and she also randomly chose Hall No. (4) to represent the control group, which was studying according to the usual method, as their number was (45). Student too.

Table 2: Distribution Of Students in the Research Sample into the Experimental and Control Groups.

No of Student	Hall No	Group
45	3	Experimental
45	4	Control
90		Total

Control Procedures

Before starting the experiment, the researcher controlled what would affect the validity of the research results, as follows:

1. Internal validity of the experimental design

The researcher conducted the statistical equivalence process between both groups (experimental and control) in order to ensure that the results were honest and to the extent that the difference between the two groups was attributed to the independent variable only.

The researcher included the following variables in the statistical equivalence process:

- Chronological age in months
- T. Previous knowledge in mathematics
- T. Previous achievement in mathematics
- IQ test
- T. strategic thinking skills

2. External validity of the experimental design

External factors can influence the designs of experimental research, so the following measures and protocols will be taken to guarantee the variables that could influence the design of the experimental research:

1. The circumstances of the experiment and the incidents accompanying it
2. Measuring tools for the experiment
3. The effect of experimental conditions
 - Confidentiality of the experiment
 - Subject teacher
 - Distribution of shares
 - Duration of the experiment
 - The location of the experiment
 - Experimental extinction

Preparing Research Requirements

It includes research requirements such as preparing teaching plans, determining teaching methods, and preparing various educational activities

1- Determine the material

The researcher selected the study material from the mathematics book for the second intermediate grade for the sixth and seventh semesters (coordinate plane, statistics).

2- Content analysis

Analyzing educational content into concepts, generalizations, skills, and types of issues

3- Formulating behavioral objectives

Based on Bloom's levels—which consist of six levels—the researcher developed behavioral and content-related goals for the academic subject for the second semester (knowledge, comprehension, application, analysis, synthesis, and evaluation).

4- Preparing interactive videos

The researcher used interactive videos because of their great importance, as the researcher mentioned in the second chapter. The researcher contracted with a specialized company to produce videos using the computer animation method (Motion Graphics) and prepared the educational scenario to produce an interactive video dedicated to mathematics for the second intermediate grade, as prescribed by the Iraqi Ministry of Education. The researcher employed a number of educational videos that suit the scientific material specified within the educational curriculum, which were carefully selected from the YouTube application, and which are compatible with the research methodology in order to enrich and diversify the material. The researcher also worked on producing a number of videos, despite their simplicity, in order to cover the scientific material allocated during the experiment period, due to the high cost of producing videos and preparing scenarios and audio material. The interactive video is presented in a sequential manner according to the steps of inquiry learning, which are (identifying the problem, assumptions, and methods of collecting information, application and interpretation).

5- Preparing teaching plans

Teaching plans, which numbered (42) were prepared

6- Determine educational methods

The researcher relied on educational means appropriate to the content of the subject, represented by the television screen, the interactive whiteboard, and the data show device for the purpose of displaying the interactive video dedicated to the content of the subject, in addition to the blackboard, colored pens, and engineering tools.

7- Building the research tool

The researcher collected the data she needed for the requirements of her research, the most important of which was preparing a tool to measure the research variables, which is the strategic thinking test. The steps for building the current research tool can be explained as follows:

(A) Determine the test objective

Establishing the test's goal is a crucial initial step in its development, since it will reveal how the independent variable—interactive video-supported inquiry learning—affects the research sample's capacity for strategic thought.

(B) Identify testing skills

It was previously mentioned that strategic thinking, which includes a set of complex mental skills, and the researcher detailed the theoretical framework for research into the types of thinking and sub-skills adopted for each type.

(C) Formulating test items

There were fifteen multiple-choice questions in the test, which was created by the researcher.

(D) Prepare test instructions

The test's overall concept is intended to be explained in the instructions that the researcher created for the strategic thinking skills assessment.

(E) Presenting the test to a group of arbitrators

The test's paragraphs for strategic thinking abilities and the methods for responding to them were decided. Some of them were changed in light of the arbitrators' views and conclusions. After the majority of the arbitrators approved the paragraphs, the exam was prepared for exploratory use.

(F) Exploratory application of the test

The exploratory application of the test included two stages:

(1) The first reconnaissance application (information sample):

The exploratory sample consisted of (30) second-year intermediate students at Al-Khwarizmi High School for Boys, affiliated with the First Karkh Education Directorate, and the test took (45) minutes.

(2) The second exploratory application (statistical analysis sample)

The exploratory sample consisted of (80) second-year intermediate students at Al-Khwarizmi High School for Boys, affiliated with the First Karkh Education Directorate, and the test was applied in order to find the effectiveness of the incorrect alternatives, the difficulty and ease coefficient, and the strength of paragraph discrimination for each item of the test.

(G) Statistical analysis of test items

The two extreme samples, the highest and the lowest, with a percentage of (27%) were selected. Then the researcher conducted a statistical analysis of the items in the strategic thinking skills test. The test was done as follows: Calculating the effectiveness of the wrong alternatives, the difficulty and ease coefficient, and the discrimination coefficient for all items.

(H) Psychometric qualities: The test's validity and reliability serve as indicators of the psychometric properties.

(1) Validity of the test

(2) Reliability of the test

(I) The final copy of the test

The test consists of (15) objective items.

Procedures for Implementing the Experiment

The researcher applied her research experiment in the second semester of the academic year 2023/2024 after completing the basic requirements for conducting the experiment after selecting the experimental and control groups, achieving parity between them, and determining the scientific subject if she applied the experiment (teaching the two research groups) on Sunday 2/18/2024. It ended on 4/28/2024 if the experiment ended after applying the two research tools, the achievement test in mathematics and the strategic thinking test. In order to apply the experiment procedures correctly, the researcher took the following steps:

1. The researcher agreed with the administration of the First Outstanding Secondary School for Boys to organize the weekly lesson schedule for teaching mathematics to the second intermediate grade since the beginning of the second course for the academic year 2023-2024.
2. The researcher studied the two research groups herself, relying on the teaching plans that she prepared and prepared, relying on the usual method of teaching

the control group students and using video-supported and interactive inquiry learning in teaching the experimental group students.

3. The researcher gave the same educational content for mathematics to the research group in order to ensure equality for both groups in the experiences and information presented to them, but in a different way. The educational content was presented to the experimental group through an interactive video designed specifically for this experiment in terms of the presentation steps, which were strategic steps. Al-Khazraji Inquiry learning 2011. As for the control group, it was taught according to the usual method
4. The researcher set a date for applying the achievement test in mathematics, a week before the test date for the students of the experimental and control groups, in coordination with the school administration, in order to prepare for it. The achievement test was applied in order to measure achievement, which is the variable. Follow the first on Thursday 4/25/2024.
5. After applying the test, the researcher corrected the answers, especially one mark for the correct answer and zero for the wrong answer. The paragraph that was left out or that had more than one answer was treated as the wrong paragraph. This was for the objective questions. As for the essay questions, the mark was for each step in the solution in order to treat it statistically and then analyze the results. And its interpretation
6. The researcher set a date for applying the strategic thinking skills test, which is the second dependent variable in the research experience for the students of the experimental and control groups, on Sunday 4/28/2024. The test was applied in order to measure the strategic thinking skills of the students in the research sample.
7. After applying the strategic thinking skills test, the researcher corrected the students' answers and assigned one point to the correct answer and zero to the wrong answer. The paragraph that was left out or had more than one answer was treated as the wrong paragraph in order to treat it statistically and analyze and interpret the results.

Presentation and Interpretation of Results

The Results

After applying the strategic thinking test and correcting the answers, the SPSS statistical package was used to obtain data results for the experimental and control groups in strategic thinking in the following Table 1: The t-test indicates the significance of the difference between them, with a degree of freedom (88) and a t-value of (8.535) at a significance level of (0.000370), which is obviously smaller than the permitted significance level of (0.05). This demonstrates that testing strategic thinking abilities results in a statistically meaningful difference. As shown in the accompanying Table 2, these findings support the acceptance of the alternative hypothesis, which favors the experimental group, and the rejection of the null hypothesis.

Table 1: Values of (t) (f) for the Experimental and Control Groups in the Variable (Strategic Thinking).

Statistical Indicators for Testing Strategic Thinking Skills.							
Stat. Sig. at the 0.05 level	Degree of freedom	T. Test T Sig.Level	Levene Test F Sig.Level	Variance	Standard deviation	Mean NO	Group
0.05	88	8.535 0.00037	0.568 0.452	2.471 1.844	1.572 1.358	8.066 45 10.711 45	Control experimental

Table 2: Values of (d) and (η^2) for the experimental and control groups in the variable (strategic thinking)

The amount of effect size	d value	η^2 value	df	T value	Dependent variable	Independent variable
Big	1.800	0.452	88	8.535	Strategic thinking	Inquiry learning supported by interactive video

Interpretation of results

1. A competent researcher arranges for his pupils to reflect on the material for an extended length of time by posing suitable challenges to them; this, in turn, promotes improved comprehension and critical thinking about the material.
2. Inquiry learning, supported by interactive video, provides an opportunity for students to discuss, express opinions, interact in class, and exchange mathematical ideas among themselves, and this in turn develops their strategic thinking skills.
3. The research findings and the experimental group's superiority over the control group demonstrate that the strategic thinking process is a powerful indicator of a person's personality development. The inquiry learning strategy, which is bolstered by interactive video, helped students perform better in developing their strategic thinking process skills.

Conclusions

In light of the results reached by the researcher, the following can be concluded:

1. Compared to the students of the control group, inquiry learning supported by interactive video has a positive impact on the strategic thinking ability of the students of the experimental group in the second grade of the School of Excellence.
2. Deviating from the prevailing model in the teaching process enables students to become active members of the classroom, enhances student participation in generating and critiquing ideas, helps understand mathematics, and reflects on their grades and ability to think strategically.
3. By relying on inquiry learning supported by interactive video, the students of the experimental group were able to link cognitive information and previous experiences with new information and experiences, which enabled them to develop the ability to extract information that was useful in the educational process and the situations they faced, in a test of strategic thinking ability.

Recommendations

Based on the findings, the researcher recommends a set of recommendations:

1. An invitation to the preparation and training directorates affiliated with the education directorates in Baghdad and the governorates to prepare teaching cadres in the field of modern teaching methods supported by educational technology, similar to the countries of the world and with standards of quality education.
2. Benefiting from the test of strategic thinking skills in mathematics as it is modern at the local and Arab levels for the age group that was targeted in order to conduct subsequent studies and research.
3. Encouraging teachers to pay attention to strategic thinking skills and urging them to do so because of its tangible impact on developing the thinking process

of their students and building the individual's personality.

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