

Lateral thinking and its role in the value of skill performance among students of the Institute of Fine Arts in the subject of Planning and colors

Assist teacher. Rawaa Masoud Ibrahim

Iraqi University - College of Education for Girls - Human Resources Division

Abstract.

1. The purpose of the current study is to determine how a multimedia program affected the planning or color of the Maha Ra Teros Institute of Fine Arts. To accomplish this purpose, the researchers used the following research assumptions:
2. The first hypothesis states that, in the post-cognitive test, there is no statistically significant difference between the average scores of the experimental group, which was taught using multimedia, and the control group, which was taught using the standard method in the planning and color (the patch) subject.
3. -The second hypothesis: The average scores of the experimental group, which was taught using multimedia, and the control group, which was taught using the standard approach in the planning, do not differ statistically significantly.

The research community was represented by students from institutes of fine arts/second stage. The Institute of Fine Arts in Holy Kadhimiya was chosen randomly to be a sample for the research. Section (A), numbering (20) students, was chosen to be an experimental group, and section (B), numbering (20).) was also requested to be a control group.

A program was applied to the students that employ multimedia in planning and colors. The two research tools adopted by the researchers are a cognitive achievement test and an evaluation form.

Performance in layout and colours, and their validity and consistency have been confirmed. After conducting the cognitive test with many students (the research sample) analyzing the results and treating them statistically, it became clear that the statistical results were statistically significant. The researchers reached the following conclusions:

- 1- The program contributed to the clear development of students' cognitive and skill skills.
- 2- The multimedia-based program outperformed the traditional method in developing students' cognitive and skill skills.
- 3- The students showed great interaction with the multimedia program because it added an element of excitement for them.

The research recommendations and proposals were:

Research Methodology:

- 1- Including the skills emphasized by the researchers in the planning and colors curriculum for the second grade in fine arts institutes.
- 2- Urging teachers to use multiple media when teaching planning and colors.
- 3- Training teachers to prepare educational programs along with the textbook.

Suggestions:

- 1- Conducting studies to include multimedia in other art education subjects.
- 2- Conduct a comparative study of the use of multimedia in theoretical and practical lessons.

ملخص.

١. تهدف الدراسة الحالية إلى تحديد كيفية تأثير برنامج الوسائط المتعددة على تخطيط أو لون معهد مها را تيروس للفنون الجميلة. ولتحقيق هذا الهدف، استخدم الباحثون فرضيات البحث التالية:

٢. تنص الفرضية الأولى على أنه لا يوجد فرق ذو دلالة إحصائية بين متوسط درجات المجموعة التجريبية التي درست باستخدام الوسائط المتعددة والمجموعة الضابطة التي درست بالطريقة المعيارية في اختبار ما بعد المعرفي في موضوع التخطيط واللون (الرقعة).

٣. الفرضية الثانية: لا يوجد فرق ذو دلالة إحصائية بين متوسط درجات المجموعة التجريبية التي درست باستخدام الوسائط المتعددة والمجموعة الضابطة التي درست بالطريقة المعيارية في التخطيط.

تمثل مجتمع البحث في طلاب معاهد الفنون الجميلة/المرحلة الثانية. تم اختيار معهد الفنون الجميلة في الكاظمية المقدسة عشوائياً كعينة للبحث. تم اختيار القسم (أ) والبالغ عددهم (٢٠) طالباً ليكون المجموعة التجريبية، والقسم (ب) والبالغ عددهم (٢٠) طالباً ليكون المجموعة التجريبية. طُلب أيضاً أن تكون مجموعة ضابطة.

تم تطبيق برنامج على الطلاب الذين يستخدمون الوسائط المتعددة في التخطيط والألوان. واعتمد الباحثان أداتين للبحث هما اختبار تحصيلي معرفي واستمارة تقييم.

تم التأكد من أداء الطلاب في التخطيط والألوان، وصلاحيتهما وثباتهما. وبعد إجراء الاختبار المعرفي على عدد من الطلاب (عينة البحث)، وتحليل النتائج ومعالجتها إحصائياً، اتضح أن النتائج الإحصائية ذات دلالة إحصائية. وتوصل الباحثان إلى الاستنتاجات التالية:

١- ساهم البرنامج في تنمية المهارات المعرفية والمهارية للطلاب بشكل واضح.

٢- تفوق البرنامج القائم على الوسائط المتعددة على الطريقة التقليدية في تنمية المهارات المعرفية والمهارية للطلاب.

٣- أبدى الطلاب تفاعلاً كبيراً مع برنامج الوسائط المتعددة لما أضافه من عنصر التشويق لهم.

تمثلت توصيات البحث ومقترحاته في:

١- تضمين المهارات التي أكد عليها الباحثان في منهج التخطيط والألوان للصف الثاني الثانوي بمعاهد الفنون الجميلة.

٢- حث المعلمين على استخدام الوسائط المتعددة عند تدريس التخطيط والألوان.

٣- تدريب المعلمين على إعداد البرامج التعليمية المصاحبة للكتاب المدرسي.

المقترحات:

١- إجراء دراسات لتضمين الوسائط المتعددة في مواد التربية الفنية الأخرى.

٢- إجراء دراسة مقارنة لاستخدام الوسائط المتعددة في الدروس النظرية والعملية.

Research problem:

All human societies revolve in the orbit of change and development, as a human nature towards achieving perfection, and this change and development is only a result imposed by the technical data of the era as an urgent need to use these technologies in daily life. We feel them in every field of life in general, and the field of education in general. Special as it is more affected and influenced by change and development resulting from technical progress. In the current era, the educational learning process faces great challenges as a result of the huge amount of information and the technology, facts, and knowledge that are accessed daily. As a result of this rapid scientific and technological development, many educational institutions in the world have begun to use modern technologies to keep pace with development and to achieve development plans.

Employing technologies does not mean importing industry methods and products, but is done by focusing on preparing and developing the available resources.

It was natural for the educational process to be developed through the development of curricula, teaching methods, and their accessories. This includes the trend towards modern technologies such as the computer and the World Wide Web, and their applications, which work to facilitate and develop the teaching and learning processes, including access to the growth of the technical, skillful, and innovative capabilities of the learners. Development has added Scientific and technological are many modern techniques and means through which the teacher can benefit in providing expertise in all fields to learners to build their skills with acceptable efficiency.

The use of media and techniques is not limited to the cognitive aspects only but rather extends to the emotional and skill aspects, and this calls for adopting these modern trends in teaching arts subjects at all levels of study, including fine arts institutes, to provide learners with knowledge and experiences, as art education is a part of it. Fine arts skills, especially the arts skills of planning and colors,

The subject of planning and colors is linked to the most honorable art, otherwise, generations have received it, generation after generation, and they have served this art by investigating, writing, and developing it. Therefore, the teacher of the subject of planning and colors seeks to master this art, to pass it on to his students so that he instills in their souls the aesthetics of this art and thus they accept to learn its skills. This cannot be achieved unless there is a competent teacher who can convey the skills to his students by understanding the needs and characteristics of their development and adopting every possible means to achieve this.

It has been proven through many studies that were conducted to reveal the effectiveness of the use of technology such as computers and its programs in the educational process and the extent of its superiority over the usual methods in raising the level of students' achievement in general and improving their skills in particular, such as the study of (Hatem, 2512) and the study of (Hamoud). , 2512), study (Katran, 2513), study (Mawazin, 2513), and study (Rashid, 2513), as all of these studies have confirmed that the computer and its educational programs are among the most effective educational means at present as one of the fields Which are used in the educational and educational fields. The computer creates an environment with greater motivation for the student than the regular education environment.

To the extent of the researcher's knowledge, no research or studies have been conducted that address the use of multimedia-based programs in developing present-day skills as one of the fields used in the educational and educational fields. The computer creates an environment with greater motivation for the student than the regular education environment. For students of the Institute of Fine Arts. This constitutes a basic motivation that motivated the researcher to move toward research to find out the extent of the effectiveness of the program, which it is hoped will provide a new solution or be the beginning of other studies in this field. The problem of the current research can be crystallized by asking the following question:

Does teaching the subject of planning and colors using a multimedia-based program lead to developing the cognitive and skill achievement of students at the Institute of Fine Arts?

Research importance:

The importance of the research for planning and color teachers and students becomes clear as follows:

- ١) The results of the current research may reveal the existence of the impact of multimedia in developing the skills of second-year students in fine arts institutes in the subject of planning and colors (coloring the shadows).
- ٢) The results of the current research may motivate teachers to use multimedia and practice methods for preparing it under the supervision of experts specialized in this field.
- ٣) The process of designing and implementing multimedia-based programs may address the problem of the shortage in the number of academically, pedagogically and skillfully qualified teachers.
- ٤) Multimedia may help students compensate for the lessons they miss in educational situations.

Search goal:

The research aims to identify the effect of teaching the subject of planning and colors using a multimedia-based program in developing the skills of students of the Institute of Fine Arts in this subject.

Hypothetically search:

To verify the goal of the current research, the researcher developed the following two null hypotheses:

Null hypothesis:(٠)

There are no statistically significant differences at the significance level (5050) between the average scores of students in the experimental and control groups regarding their answers in the post-application on the items of the cognitive achievement test.

Null hypothesis:(٤) There are no statistically significant differences at the significance level (5050) between the average scores of students in the experimental and control groups regarding their performance in the skills post-application. search limits: Spatial boundaries: Institute of Fine Arts / Baghdad Governorate Human limits: Second-year students/morning study (male category) Temporal limits: The academic year 2022/2023 Objective limits:

1-Adopting a program based on multimedia in teaching the subject of planning and colors (prepared by the researchers).

2- Basic skills for coloring the delusion.

3- Definition of terms:

4- Program: Program

Good (1973) defined it as: “a group of organized or planned activities that aim to develop the knowledge, experiences, and attitudes of the trainees and help them update their information, raise their productive efficiency, solve their problems, and improve their performance in their work (Good, 1973, P644).

Administrative definition

A set of experiences, procedures, and activities planned and organized according to multimedia-based programming and aims to develop the cognitive and skill aspects of second-year students at the Institute of Fine Arts in Ruq'ah script.

3 -Multimedia is defined by (Al-Mousa 2552):

A program that combines several media, such as sound, image, movement, text, drawing, and video, all of which operate under computer control.” (Al-Moussa, 2022: 2).

Practical definition:

An educational system that provides programmed educational content for several situations and activities embodied in sounds, images, written text, and videos via computers, to develop the skills of students of the Institute of Fine Arts in the subject of planning and colors.

1- Development: Al-Salem and Marai 2021 defined it as:

2- - “It means development, change, and growth.” (Al-Salem and Al-Mar’i, 1985: 81).

3- Practical definition:

4- The development in skills is reflected in the results of the tests that are applied to students of the Institute of Fine Arts in the subject of Arabic calligraphy (Al-Ruq’a) after they studied the requirements of the multimedia educational program designed in the current research.

5- Skills:

6- Skeel 1970 defined it as:

7- “An individual’s ability and competencies to perform a specific job.” 9(: (Skeel, 1970, P). Accordingly, the operational definition of skill is:

8- Students of the Institute of Fine Arts can develop their skills in the subject of planning and colors after learning these skills according to a program based on multiple media according to the tests (cognitive achievement - skills) prepared in the current research.

9- The term multimedia refers to the use of more than one type of means, whether audio or visual, with the integration of all elements of excitement, such as sound, images, movement, and texts, in addition to video and colors, in a precise fusion of these elements to improve the learning process. The previous elements indeed represent all the basic elements at the core of multimedia programs that can be used to address all of the learner’s senses, but this does not mean using them all at the same time to avoid crowding the display with elements, which may distract students’ attention, in addition to the necessity of their connection to the content and achieving the goal for which they are used.

10-Interest in using multimedia in the educational process has become one of the urgent necessities of our time, due to its excitement and diversity of information, which in the past was limited to television. (Moses, 2005: 46).

Justifications and benefits of using multimedia in education:

11- Its use supports and enhances the learning process by practicing educational processes and multiple activities to learn concepts, facts, and skills.

12- It is interesting and attractive and leads to exploring a lot of information and accessing many diverse topics.

13- The use of multimedia creates opportunities for students to acquire the technological thinking skills they need to face the future, coexist with it, and survive in it.

14- Clarifying the principle of integration of knowledge between different branches of science, and linking science to life to provide individual happiness and well-being. Planning and color material.

It includes an introduction to the subject of planning, in addition to the types of lines and their shapes, in addition to the most important tools involved in drafting shapes. This course aims to: learn drawing, design, and formal formulations derived from the imagination in various forms and methods. Duties and projects: In the case of submitting duties and work at the specified times.

Color planning went through several stages that led to the maturity and sophistication it has reached today, which was achieved in multiple stages. The Baroque era, in which color planning transformed from its dry form to its soft form, and as for the eighteenth century, is truly considered a golden era of color planning, which... It reached its peak, and what is taught today are the rules of color planning.

The color scheme adopted by great artists can be classified until it reaches the degree of perfection

Color planning is relatively new

Study of Al-Ani: Mustafa Abdel Latif Abdel Hamid 4102

Name of the study: The effect of the computer presentation method on developing artistic expression among bachelor's level students.

The study aimed to identify the effect of the computer presentation method in developing artistic expression among bachelor's degree students. The number of individuals in the sample reached (65) male and female students, distributed equally between two halls, one of which was chosen randomly: Hall (1) for the experimental group, and Hall (2) for the control group. , College of Fine Arts in Baghdad. Computer, in designing an educational material on the elements and foundations of artistic work. As for the study tools, it was a test of cognitive performance (pre and post), measured by an achievement test, and a test of skill performance (pre and post), measured by a skill performance evaluation form. The researcher used a set of statistical methods. It consisted of:

- 1- T-test for two independent samples.
- 2- Difficulty and discrimination coefficient equation.
- 3- Equation (Kuder Richardson N-25) to find the stability coefficient.

1- Holsti's equation for virtual validity. The study showed the superiority of the students of the experimental group to whom the computer presentation method was applied in the achievement test over the students of the control group who studied the traditional method.

)Evaluating the performance of students in the Art Education Branch at the College of Fine Arts - University of Baghdad.

The study aimed to evaluate the performance of students in the Art Education Branch at Teachers College - University of Baghdad in coloring by evaluating the subject's vocabulary in light of its objectives, and proposing an educational unit to train students on gradations of one color, and knowing their effect and the sample, distributed into two divisions, i.e. (20) in each division. For the academic year 2022-2023, the study tools were the interview, a test of cognitive performance (pre and post), measured by an achievement test, and a test of skill performance (pre and post), measured by a skill performance evaluation form. The statistical means of the study were the Pearson equation to find the stability of the tool and the test. To find out the differences between the pre-test and the post-test and to know the differences in the pre-and post-test according to the gender variable. The results showed the superiority of the experimental group that studied the proposed educational unit according to the Kanye model in the pre-and post-tests. There were significant differences in favor of the post-test, and there were no statistically significant differences. Between males and females when they study the educational unit.

Research methodology and procedures:

Research Methodology:

The researchers used the experimental method to accomplish this research.

Experimental design:

Choosing an experimental design is one of the tasks that falls on the researcher when he undertakes any scientific experiment, as the integrity of the design and its accuracy are the basic guarantee for arriving at

Reliable results.

In this research, the researchers adopted a randomized group design (experimental and control), which was equivalent in some variables and had a pre/post-test. As in Table (١)

Table) 1.(

Measure the dependent variable	Dependent variable	Independent variable	Parity	group	T
Achievement test	1.Cognitive achievement 2.Skillful achievement	A multimedia program		Experimental	1
Skill test		Teaching according to the usual method		Female officer	2

Experimental design(٠)

Four: Research community:

Defining the research community is important in educational and psychological research because it helps to select the research sample according to the solid scientific method.

The current research community consists of (280) students from the Fine Arts Institutes in Baghdad. The two researchers obtained the necessary data for the components of the current research community from the Special Registration Division for the Fine Arts Institutes in Baghdad Governorate.

Fifth: Research sample:

He chose the Institute of Fine Arts in Holy Kadhimiya to be the field to conduct the research experiment. After the researchers identified this institute, they randomly selected from the second-grade Division (A) to be the experimental group and Division (B) to be the control group. The number of students in each of these divisions was two sections (20) students.

Sixth: Statistical equivalence between the experimental and control groups:

- Chronological age calculated (in months):

After the researchers obtained the chronological age of the members of the experimental and control groups from the Registration Department, it became clear that the average age of the students in the experimental group was 2400624 months (and the average age of the control group was 20-2). 5 years.(

To know the significance of the difference between these two means by using the t-test for two independent samples, it became clear that the difference was not statistically significant at the level (50.5), as the t-value was

The calculated value (50214) is smaller than the tabular t-value of (2051) and with a degree of freedom (62). Table (2) shows this and this result confirms that the experimental and control groups are equivalent in terms of the chronological age variable.

Table (4) Equivalence of the research sample in the chronological age variable

Significance level(٠,٠٠)	The T layer		degree Freedom	variance	the middle Arithmetic	size the sample	group
	Tabulation	Calculated					
Non-functional	2,51	1008	62	5020	21204	20	Experimental
				5022	21403	20	Female officer

4- Previous experience variable:

To identify the previous experiences that the students of the experimental and control groups had regarding the scientific subject of the experiment, the researchers used a cognitive achievement test for the subject consisting of (20) items for the students of the two groups (experimental and control). The researchers also prepared a skills test that dealt with the basic skills of studying geometry models. Planning. These skills consisted of (15) skills that

were corrected using a note card with a rating of four. The experts agreed on the validity of these skills and the rating form in revealing previous experience in the field of skills at a rate of 25%. After applying the test and the note card, it appeared that the two research groups were statistically equivalent. In the variable of previous experience in the cognitive and skills test, Table (3) shows this.

Table(٣)

Equivalence of the research sample according to the variable of previous cognitive experience

Significance level (1015)	T value		degree Freedom	variance	SMA	Number of students	the group
	Tabulation	Calculated					
Non-functional Statistically	2051	1022	62	1023	8004	20	Experiment
				1020	803	20	Female offi

It also appeared that the two research groups were statistically equivalent in the previous experience variable, and Table (6) shows this.

Table (2) Equivalence of the research sample according to the variable of previous skill experience

Significance level (١٠١٥)	T value		degree Freedom	variance	SMA	Number of students	the group
	Tabulation	Calculated					
Non-functional Statistically	2051	1023	62	1033	1403	20	Experimental
				5082	1402	20	Female officer

Seventh: Internal validity of the experimental design :

- 2- The internal validity of the procedures of the current research experiment is achieved by controlling a group of extraneous variables. These variables are:
- 3- A- Accompanying accidents:
- 4- No occurrence of any incident would obstruct the conduct of the experiment and thus might lead to an impact on the dependent variable in addition to the independent variable.
- 5- B- Confidentiality of experiment procedures:
- 6- The researchers, in agreement with the institute's administration, were keen on the necessity of confidentiality of the experiment, so that it would take place naturally and not affect its safety and results.
- 7- C- Article:

8- The researchers taught the experimental group according to the multimedia program, while the control group was taught according to the usual method.

9-

10- D- Teacher variable:

11- The researchers were keen to teach the two research groups (experimental and control). Distribution of lessons:

12- The distribution of classes between the two research groups was equal, as each section had two consecutive classes each week.

13- F- Experimental leakage (waste):

14- The researchers may lose some sample members during the experiment through dropout, death, or transfer, as no dropout occurred among members of the experimental and control groups.

15- Eighth: Research requirements:

16- To achieve the research objectives and hypotheses, it was necessary to prepare the research requirements as follows:

Evaluating the scientific subject: To ascertain the exterior line, the researchers examined certain notebooks and the second grade curriculum from the Institutes of Fine Arts' second semester. Following the analysis, fifteen fundamental calligraphy skills were identified for the board.

١٩- -Formulating easy objectives: The researchers derived behavioral objectives for the material taught during the experiment according to the first five levels of Bloom's classification (remember, understand, apply, analyze, synthesis), and they reached (60) objectives after the presentation This is for the experts and specialists.

-٢٠- Preparing teaching plans: The researchers prepared (2) plans for the experimental group based on the multimedia program and (2) plans for the control group according to the traditional method, at a rate of (85) minutes for each plan (two consecutive sessions) distributed over the two school weeks Make one plan for each A group in one week. The researchers presented it to a group of experts specialized in methods of teaching art education and the arts of planning and colors.

Ninth: Search tools:

To determine the effect of the independent variable on the dependent variable in the current research, the researchers prepared and designed the following tools:

First: The cognitive achievement test:

The researchers prepared the cognitive achievement test because it is one of the most common and used assessment tools in measuring students' achievement and because it is an organized procedure to determine how much students have learned. The test consisted

of (20) multiple-choice items and gained the confidence of experts after presenting it to them and making modifications to some of its items.

The test preparation process went through many steps and procedures:

-Determine the purpose of the test:

The cognitive achievement test is not the achievement of the students of the experimental and control groups in the cognitive aspects of acquiring calligraphy skills and their role in the process of forming artistic calligraphy.

-Determine the levels of test paragraphs:

The cognitive achievement test was built to address the first five levels of Bloom's classification of the cognitive domain, which are (remembering, understanding, applying, analyzing, and synthesis).

-Preparing the test map:

The researchers prepared a test map that included the cognitive material of the board line that was specified for the current research experiment and the behavioral objectives from Bloom's taxonomy (remembering, understanding). The levels of (application, analysis, synthesis) were excluded from the cognitive test because the test is of a multiple-choice type and relative importance has been determined. For each level, in light of the number of objectives (remembering, understanding) for each skill.

-Formulating the test items:

The researchers relied on objective testing because of its comprehensiveness, objectivity, and high quality of validity and reliability.

After consulting experts, the researchers chose a type of objective test, namely (multiple choice), because this type of test is characterized by some positive advantages, such as avoiding subjectivity, ease of correction, and covering large parts of the curriculum.

-Logical analysis of the test items (apparent validity of the items):

The researchers presented the paragraphs with the intended content (behavioral objectives) as an appendix

(٠)The study material was presented to a group of experts (arbitrators) who specialize in teaching methods, design, evaluation, and Arabic calligraphy, and they were asked to examine the paragraphs logically and estimate the extent of their suitability to the content they contain.

In light of their opinions and observations about each paragraph, the wording of some paragraphs was modified and no paragraph was excluded because all paragraphs received the approval of 25% or more of the experts. After all, the researchers relied on this percentage of their agreement as evidence of their validity.

-٢ Clarity of instructions and understanding of phrases:

The test was applied to (25) students who were randomly selected from the students of the Institute of Fine Arts in Al-Mansour/second grade. The researchers asked them to answer the test in front of them so that they could mark

Aspects of ambiguity or lack of understanding, and it became clear through this application that the instructions are clear the paragraphs are understood and the approximate average time for answering is approximately (65) minutes through the following equation.

-٢ Statistical analysis of the test items:

To calculate the psychometric properties of the items, the test was applied to a sample consisting of

(١٥٥) students were randomly selected from the students of the Institute of Fine Arts/second year in Al-Mansour. This test was administered on Tuesday.

After applying the test to this sample, correcting the answers, and calculating the scores for each item and each individual, the scores of the sample members were arranged in a descending manner from the highest overall score to the lowest overall score. Then the researcher calculated the psychometric properties of the items as follows:

-٠ Paragraph difficulty factor:

What is meant is the level of complexity that the student faces in correctly answering the test paragraph and whether it is high or medium. The degree of difficulty is determined in light of the percentage of those who gave an incorrect answer to that paragraph or question (Al-Azami et al., 2558: 382). When calculating the difficulty factor for each paragraph of the test, it was found that it ranged between (5034 - 5045) and was

The difficulty coefficients are acceptable because the difficulty coefficient of the paragraph is considered acceptable if it ranges between (25.5 -25.5) (Bloom, 1823: 156).

-The power of distinguishing vertebrae:

The item's discrimination coefficient indicates its ability to reveal the individual differences on which psychological and educational despair is based (Mansi, 1822: 126).

Therefore, the researchers arranged the grades of the members of the sample of (155) students who analyzed the items from the highest grade to the lowest grade, identified the highest and lowest groups at a rate of 22% in each group, and used the equation to distinguish items with a binary answer (true, false, Crocker and Algina). , 2558: 612 (All item discrimination coefficients were acceptable. The discriminatory power of each test item

was calculated, and the results ranged between (5035 and 5023), as it is preferable for the item discrimination coefficient to be (35.5) or more.

3- The effectiveness of false alternatives (camouflage):

The wrong alternative is effective when it attracts a greater number of students in the lower group than students in the upper group (Al-Baghdadi, 1882: 128).

“A good and effective camouflage is the alternative that has a negative and large attractiveness coefficient, as an alternative that is not chosen by any of the examinees or whose attractiveness is zero should be reviewed, developed or replaced” (Al-Nabhan, 2556, p. 253).

When using the discrimination equation with the wrong alternatives for each paragraph, it became clear that all of them were attractive to the students of the lower group, as they chose them more than the students of the upper group. Ninth - Psychometric properties of the test:

Specialists in Yasah stress the importance of the psychometric properties of the test, which are an indicator of its accuracy in Yasah, which was prepared with as few errors as possible.

(Rabi', 1886:

٣٨) .

Validity and reliability are among the most important psychometric properties of the test confirmed by the Elias theory, which must be present to a good degree. (Abdul Rahman, 1882: 108) The following is an explanation to verify these two properties of the achievement test prepared in this research: 0- Test Validity:

Validity is considered one of the most important psychometric properties of a test because it indicates its ability to overcome what it was prepared to despair (Ebel, 1972, p. 435) The two researchers sought to verify the validity of the test with two indicators:

Content Validity: A- The veracity of the content and depends on the logical analysis of the paragraphs by experts in

. (Allen & Yen, 1979, p. 38) Highlighting the components of the content to be measured and their proportions: Construct Validity B- Construct Validity

It is sometimes called the validity of the concept or the validity of the hypothesis formation because it indicates the extent to which the test is good for forming a particular hypothesis or concept through experimental verification of the assumptions on which the researchers relied in constructing the test. (Salman, 2552: 38)

Tests Reliability -4

The researchers verified the reliability of the test using "Cronbach's alpha" equation, which is commonly used in calculating reliability because it indicates internal consistency, which is closest to the concept of reliability, but it divides the test into parts with some items. (Allam, 2555: 140).

The reliability coefficient was (26.5), which is a good reliability coefficient, as Foran indicates that the reliability coefficient is considered good if the joint interpretation factor is greater than 50%. (Foran,

١٩٦١) p. 389

Second: Skills test:

Catalog of abilities The Arabic calligraphy curriculum for the second grade in fine arts institutes was used for the list of talents.

some Arabic calligraphy textbooks on Ruq'ah calligraphy for the most important calligraphers, as well as

Based on the results of previous studies that studied the subject of Arabic calligraphy. The skills were (10) amended to (15) after being presented to experts and specialists. As in Table 5-

Table- shows the skills of Arabic calligraphy (Riqaa)

Suitability		Skill performance (skill)	ت
Invalid	Valid		
		Writing the controls for drawing the line and its unit	1
		Writing the eight basic letters in color	2
		Derivation of other letters from the eight basic letters	3
		Distinguish between letters written above the line and those written below the line	6
		Consider dark and light colors	0
		Distinguishing between colors that change shape to change their place in the word	4
		Connect the shades of colors properly	2
		Teething care between colors	2
		The presence of appropriate gradations between color	8
		Writing the controls for drawing the line and its unit	15

-^oPrepare the note card:

The observation card is a measure through which the researcher can know the levels of color skills possessed by students at the Institute of Fine Arts. This card aims to determine the extent of the availability of these skills (parchment calligraphy) among students of the Institute of Fine Arts, second grade, and to find a unified standard that is adhered to when correcting the skills. The purpose is to try to limit the teacher's subjectivity when correcting, to achieve the objectivity that he must have.

A- Notecard vocabulary:

The vocabulary of the note card was determined through the list of skills, which consists of (15) skills and includes the presentation of their quadrants, i.e. (6) columns, each of which expresses the amount of skill level the student possesses.

B- Setting the note card:

The researcher presented the observation card to a group of arbitrators to verify ease of use, estimation of grades, accuracy of identifying its elements, and objective estimation of the weights of its grades.

- Skills List Application:

The researchers applied the skills list to (25) students from the Institute of Fine Arts, second grade, Al-Mansour Branch, in order to reveal the time it takes the student to complete the test requirements in preparation for the applied research experience, as well as to verify its stability.

It became clear through this application that the approximate average time to complete the performance skills of Ruq'ah calligraphy is about (65) minutes.

D- The validity of the note card:

The subjective validity of the observation card is measured by calculating the square root of the reliability coefficient (Al-Gharib, 1825: 422).

To calculate the self-validity of the note card in Yas Ruq'ah Calligraphy Skills, the following equation was used:

The self-honesty coefficient = the square root of the reliability coefficient = 8012. This indicates that the note card has a high degree of honesty in the patch line.

C- The final copy of the note card:

In light of the results obtained by the researcher to test the validity and reliability of the card and make amendments to it according to the opinions of experts, in its final form it has become valid for application and consists of (15) skills as in Table.(١٦)

Tenth: Procedures for implementing the experiment:

The researchers began applying the experiment to the students of the research sample, starting from 1/3/2512 until ٢/٠/٢٠١٢

The researchers did the following:

-١ Before applying the experiment.

A- Conducting equivalence operations between the two research groups in variables including age and previous experience.

B- Preparing teaching plans for both groups (experimental and control), and presenting them to a group of experts and arbitrators.

-٢The actual application of the experiment.

In order to preserve the integrity of the experimental design and achieve the research objectives and reach its results, the researchers took the following measures:

A - The two researchers themselves studied the two research groups in order to avoid differences that might result from differences in the teacher's ability and the extent of his knowledge of the nature of the experimental variables.

B - The same amount of scientific material was given to the two research groups, so long as the two groups were equal in terms of the information they were exposed to.

C- Students were not allowed to move between the two groups during the experiment.

D- The duration of the experiment was the same for the two research groups, as the experiment began on Monday, 3/1/2512, and ended on Wednesday, 02/2512.

E- The post-achievement test was administered on Wednesday, 02/02/2512, and the skills test was administered on Thursday, 03/03/2512.

Eleventh: Statistical methods:

The statistical methods that were used in this research, whether in conducting its procedures or in analyzing its results, are:

-١The t-test for two independent samples. This test was used for equality in the research variables, which are (chronological age - previous experience) between the members of the experimental and control groups.

-٢Item Difficulty Equation: This equation was used to determine the degree of difficulty of the achievement test items.

-٣Item marking equation: This equation was used to find the marking of the achievement test items

-Effectiveness of alternative: The achievement of the test items' incorrect (wrong) alternatives' effectiveness was determined using this method.

.٤The achievement test's reliability coefficient is estimated using Cronbach's alpha equation.

- Pearson correlation coefficient: The skill performance questionnaire's reliability was calculated using this formula. Outcome presentation and interpretation:

First, the findings follow: After the current research's results were analyzed, the following conclusions were drawn:

The first null hypothesis states that, at the significance level of (50.5), there is no statistically significant difference in the average scores of the Arabic calligraphy test between the experimental group, which was taught using multimedia, and the control group, which was taught using the standard method (the patch).

The two testing groups—the arithmetic mean (2104) and the variance (5082) and the control group, which consisted of the arithmetic mean (1002) and the variance (1012)—were subjected to the cognitive test to test the null hypothesis. The researchers employed to determine the statistical significance of the difference between the two prior arithmetic means The t-test was performed for two independent samples, and the results showed that the computed t-value (3034) is higher than the tabular value (2051) for the t-test with a degree of freedom (62) and a significance level of (50.5). As such, it is turned down. The alternative hypothesis is accepted, and the null hypothesis

2. The second alternative theory There is no discernible statistical variation between the mean scores of the in the post-test.

To test the null hypothesis, the skills test was applied to the two experimental research groups, the arithmetic mean was (3102) and the variance (2063), and the control group was the arithmetic mean (2003) and the variance was (1022). To determine the statistical significance of the difference between the previous two arithmetic means, the researchers used the t-test. (t-test) for two independent samples, and it turns out that the calculated value of (t) is equal to (6004), which is greater than the tabulated value of (2051) for the test (t) with a significance level of (50.5) and a degree of freedom (62). Accordingly, the null hypothesis is rejected. We accept the alternative hypothesis.

Second: Interpretation of the results:

Through the results reached by the researchers, which showed the superiority of the experimental group over the control group, the researchers believe that the reason for this superiority is due to the following reasons:

- Presenting the educational material according to a multimedia program is interesting and enjoyable for students.

٢- The interaction process provided by the multimedia program increased students' understanding and their ability to learn correctly and quickly.

٣- The ability to control the scientific material or skill presented, with the possibility of re-explaining the material in an easy way.

٤- The presence of colours, images, still and moving images, and video, accompanied by sound, increased students' attention to the lesson.

Third: Conclusions

While the researchers were teaching Arabic calligraphy, they concluded that the multimedia program effectively contributed to the following matters:

١- The multimedia program contributed to creating a spirit of teamwork among second-year Arabic calligraphy students.

٢- Raising students' attention and interaction with the lesson, as well as their desire to actively participate in the subject

٣- Conveying the skill practically. It is possible to include images, audio, and video, which adds an important kinetic element to the lesson.

٤- Facilitating the professor's role in following up on students' exercises and evaluating the level of skill reached by the students

٥- The researchers also noted that education using the multimedia program is more interesting for learners.

4. It is also noteworthy by the researchers that these educational programs are very compatible with most arts subjects, especially Arabic calligraphy.

Four: Recommendations:

Based on the above positive results regarding the multimedia program, we find that the most important recommendations are:

It is very necessary to adopt multiple media in art institutes, and in most study halls, because of the enrichment they provide for practical and theoretical materials.

Suggestions:

Based on the results of the current study, the researcher presents several suggestions whose application could lead to a better level of the educational process, which are:

١. A comparative study of the multimedia teaching method between Iraq and Saudi Arabia.
٢. Employing multimedia techniques to develop the performance of middle school students in art education.
٣. Adding multimedia techniques to the educational technology curriculum for all departments of institutes and colleges

(The Effect of a multimedia-based program The multimedia-based program is superior to the traditional way of developing students' skills in a cognitive and skillful manner.

- 3 - Students showed a great interaction with the multimedia program for what it represents .
The recommendations and Suggestions for research were:

Recommendations:

- 1 - Include the skills of calligraphy reached by the study in the curriculum of the line of the second grade in the institutes of fine arts.
- 2 - Urge teachers to use multimedia to teach Arabic calligraphy.
- 3 - Training teachers in the preparation of educational software along with the textbook.

Suggestions :

- 1 - Studies involving the inclusion of multimedia in other art education materials.
- 2 - Conduct a comparative study of the use of multimedia between Iraq and Saudi Arabia.

Reference.

١. Al-Baalbaki, Munir (1821): Al-Mawrid - English-Arabic Dictionary, Thirty-Third Edition, Beirut, Lebanon.
٢. Al-Jubouri, Suhaila Yassin (1826): The Arabic script was simplified and purified until the end of the Umayyad era, 2nd edition, Al-Adib Al-Baghdadi Press, Baghdad.
٣. Hatem, Yas Lazem (2512): The effect of a multimedia educational unit in teaching the subject of planning and writing.
,Al-Mustansiriya University, Master's Thesis, College of Basic Education.
٤. Hamoud, Zaki Rahim (2512): The impact of technological openness on the artistic expression of students, Al-Mustansiriya University, Master's thesis, College of Basic Education.
٥. Rashid, Rawaa Hamdi (2513): The most effective teaching method using educational concepts is the cognitive and skillful achievement of perspective subject among students of the Department of Art Education, Al-Mustansiriya University, Master's thesis, College of Basic Education.
٦. Al-Salem, Faisal, and Marai Tawfiq, 0221, Dictionary of Psychoanalysis, Kuwait.
٧. Salman, Khamail Mahdi Saleh (2552): "Comparison between patterns and paragraphs of verbal situations in light of

Psychometric properties of psychological scales”, unpublished doctoral thesis, University of Baghdad, College of Education, Ibn Rushd.

.١٢ Samara, Aziz and others, 1828 AD, “Measurement and Evaluation in Education”, 1st edition, Dar Al-Fikr for Publishing and Distribution, Amman - Jordan.

8. Abdul Rahman, Saad (1882): Psychological Measurement, Al-Falah Library, Kuwait.

.١٥ Al-Azwi, Rahim Yunus (2552): Al-Qihaas and Al-Taqhawim are the teaching process, Jordan, Amman, Dar Degla.

.١١ Allam, Salah al-Din Mahmoud (2558): Educational measurement and evaluation is the educational process, Dar Al-Masirah Publishing House, Amman, Jordan.

.١٢ Katarn, Ammar Abdel Hamid (2513): The effectiveness of teaching using the interactive whiteboard is the cognitive and skill development of the Basics of Design course, guided by students of the Technical Education Department, Al-Mustansiriya University, Master’s thesis, College of Basic Education.

.١٣ Moazin, Ali Hussein (2513): Building a training program based on digital technology to develop students’ skills

Department of Art Education in Planning and Painting, Al-Mustansiriya University, Master’s Thesis, College of Basic Education.

.١٦ Al-Mousa, Abdullah (2552): “The use of information technology and computers is the basic education at the primary stage in the Arab Gulf states,” Riyadh: Arab Education Bureau for the Gulf States.

.١٠ Melhem, Sami Muhammad (2555): Elias and evaluation in education and psychology, 6th edition, Dar Al-Masirah, Amman, Jordan.

.١٤ Mansi, Mahmoud Abdel Halim (1822): Qur’an writers, for they are the souls, Modern University Library, Alexandria.

.١٢ Musa (1882): “Skills in Teaching and Training”, Baghdad, Ministry of Education, Institute of Educational Training and Development, Vocational Training Department.

.81 Skeel. D.J (1970) : "The challenge of teaching social studies in the Elementary schools" Ca, Good Year, publishing, Co. Inc.,

.91 Good, carter Y. (1973): dictionary of education, 3rd ed, McGraw – Hill, New York.

.02 Eble , Robert , L.1972 , Essential of Educational Measure Men " 2nd ed , Engle Wood Cliffs : prentice Hall

.12 Allen, D.(1998):" The effects of computer use in teaching history for university students. "D.A.I vol, 59, No.3.