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The Effectiveness of Blended Learning between E-Learning and Traditional Education in Developing Critical Thinking Skills among Fine Arts Institute Students

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Abstract:

This study aims to examine the effectiveness of blended learning, which integrates e-learning with traditional education, in developing critical thinking skills among students of fine arts institutes. The research problem stems from frequent observations of students' deficiencies in critical thinking skills due to the reliance on traditional teaching methods that may not provide an interactive environment sufficient for skill development. The significance of the study lies in the urgent need to enhance the quality of education in fine arts institutes by employing modern educational methods that foster critical thinking, a fundamental skill in artistic fields. The study hypothesizes that implementing blended learning can effectively and positively enhance students' critical thinking skills compared to traditional teaching methods alone.

The researcher arrived at the following conclusions and recommendations:

1. Effectiveness of Blended Learning: Results indicate that blended learning can be more effective in enhancing students' drawing skills compared to traditional teaching methods.
2. Importance of Interaction and Active Participation: Active interaction and participation with the learning material through blended learning to enhance students' artistic and innovative skills.
3. Impact of Blended Learning on Student Motivation and Engagement: Further studies could measure the impact of blended learning on student motivation and engagement in art classes and compare these results to those from traditional teaching methods.
4. Blended Learning as a Motivator: Blended learning can motivate students and enhance their interaction with the material. Rather than passively following traditional teaching techniques, students actively participate in the learning process through blended methods.

Keywords: Blended learning, e-learning, traditional education, critical thinking, fine arts institutes.

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Chapter One: Introduction to the Research

Research problem

The research problem on "The effectiveness of blended learning between e-learning and traditional education in developing critical thinking skills among students of fine arts institutes" is of great importance in the current educational context, as critical thinking skills represent an essential element in developing students' ability to analyze, evaluate and make informed decisions, especially in the fields of arts that require creativity and the ability to reflect and think deeply.

Through this research, we seek to study the effectiveness of blended learning that combines e-learning and traditional education in improving these skills. In fact, e-learning differs from traditional education in terms of the means and technologies it uses, as e-learning provides a flexible environment that allows students to access educational content independently, and provides them with opportunities to develop research and critical thinking skills by interacting with digital materials. While traditional education relies on direct interaction between the teacher and the student, which contributes to developing the ability to think critically through group discussions and immediate feedback.

One of the questions of this research is how to integrate these two approaches in an integrated manner to achieve the best results in promoting critical thinking. Blended learning may provide an ideal combination of the flexibility of e-learning and the direct interaction of traditional education. Therefore, the research seeks to answer the main question: Can this integration contribute to developing students' critical thinking skills more effectively than using either approach separately?

Furthermore, factors influencing the application of blended learning in this context need to be considered, such as the readiness of students and teachers to adopt new methods, the compatibility of educational content with e-learning technologies, as well as how to organize the interaction between the two methods in an integrated learning environment. By analyzing these factors, the research will provide recommendations on the best ways to implement blended learning in fine arts institutes in order to effectively promote critical thinking.

Importance of research

The importance of the research on "The Effectiveness of Blended Learning between E-Learning and Traditional Education in Developing Critical Thinking Skills among Fine Arts Institutes Students" lies in several aspects, as it addresses one of the vital topics in the field of contemporary education and reflects modern trends in higher education, especially in art specializations that require a great deal of critical and creative thinking.

First, critical thinking is one of the essential skills that fine arts students should possess, as it helps them analyze artworks in a systematic and in-depth way, and enables them to evaluate artistic ideas and trends. In light of rapid technological developments, it has become necessary to adapt traditional teaching methods to modern technologies such as e-learning, in order to expand learning horizons and enhance students' critical thinking abilities.

Second, the research contributes to bridging the knowledge gap on how to integrate different teaching methods to achieve the best results in developing critical thinking skills. Blended learning is a promising educational model that can provide important advantages, such as providing a flexible learning environment, enhancing interaction between students and teachers, and developing critical thinking skills through students' interaction with multiple sources of information.

Third, the role of the research lies in enriching the academic literature on blended learning applications in fine arts institutes, by providing new insights on how to improve the educational process in this context. It enhances the understanding of the relationship between modern educational technologies and the ability to develop critical thinking skills, which is of great importance in the context of art education that relies on continuous criticism and analysis.

Research objective

The current research aims to identify The effectiveness of blended learning between e-learning and traditional education in developing critical thinking skills among students of fine arts institutes.

Research limits

Objective limits: The effectiveness of blended learning between e-learning and traditional education in developing critical thinking skills among students of fine arts institutes

Time limits: The research was conducted and applied in the academic year 2024 AD.

Spatial boundaries: Iraq-Baghdad.

Define terms

1. **Blended learning:**

- It is an educational model that combines traditional (face-to-face) and e-learning methods, where students benefit from both methods in an integrated manner to develop their academic skills.(Al-Faqih, 2011, p. 229)
- It is an educational strategy that relies on integrating traditional classroom lectures with e-learning technologies, allowing students to learn in a flexible environment that combines direct interaction with the teacher and digital content.(Al-Faqih, 2011, p. 230)
- It is the use of multiple learning methods that include traditional education and online learning to provide an integrated educational experience that aims to improve learning effectiveness and increase student engagement.(John & Pagels, 2012)p.143)

2. **E-learning:**

- It is an educational system that relies on the use of electronic means and digital technologies to deliver educational content, allowing students to access educational materials online at any time and from anywhere.(Mr., 2012, p. 117)
- Using electronic tools and applications, such as educational platforms, educational videos, and interactive applications, to provide a virtual learning environment that contributes to improving interaction and providing distance education.(Mr., 2012, p. 123)

3. **Traditional education:**

- It is an educational system that relies on direct interaction between the teacher and students inside the classrooms, where knowledge is conveyed through lectures, discussions, and classroom activities.(Nabila, 2004, p.236)
- It is the traditional form of education that takes place in a traditional classroom environment using traditional teaching aids such as the blackboard and textbooks, and is often limited to the student's interaction with the teacher and his classmates inside the classroom.(Makarem, 2000, p. 345)
- It is an educational model based on the face-to-face teaching method between the teacher and the students, where the lessons are implemented within a school or

university environment using traditional teaching methods such as direct explanation.(Bahi, 1999, p. 98)

4. critical thinking:

- It is the ability to analyze and evaluate ideas and information logically and independently, with the ability to draw conclusions based on evidence and facts.(Mowaffaq, 1989, p. 98)
- It is the thinking process that focuses on examining beliefs, ideas, and attitudes in a deep and objective manner, using analytical and reasoning skills to draw conclusions supported by evidence.(Muhammad, 2004, p. 49)
- It is careful and conscious thinking that aims to critically evaluate ideas and situations, using logic and constructive skepticism to reach thoughtful solutions based on accurate information.(Wajih Mahjoub, 2000, p.135)

Chapter Two: Theoretical Framework and Previous Studies

The first axis: theoretical framework

1. Blended learning

Blended learning is a modern educational model that relies on integrating traditional education methods with e-learning technologies. This combination seeks to benefit from the advantages of each type of education, and provide a more comprehensive and flexible educational environment. This model also contributes to motivating students to actively interact with educational content, whether inside classrooms or via e-learning platforms.(Al-Shahri, 2008, p. 67)

Blended learning refers to the use of different educational models (traditional education and e-learning) in an interactive way, combining live lectures, classroom discussions, and self-paced online learning.(Shatrat, 2010, p. 9)

Theories explaining blended learning:

Constructivist learning theory(Constructivism):

It suggests that students construct their own knowledge through interaction with their learning environment. In the context of blended learning, the combination of traditional learning and e-learning allows students to acquire knowledge through interactive experiences, which enhances the constructivist learning process.(Al-Gharib, 2009, p. 100)

Social learning theory(Social Learning Theory):

Focuses on how individuals learn by observing and interacting with others. Combining traditional education with e-learning enhances this type of learning through online group discussions and interaction with content.(Abu Khatwa, 2009, p. 4)

E-learning

E-learning is a type of education that relies primarily on Internet technologies to provide knowledge and educational materials. It includes a set of tools such as online lectures, digital workshops, and electronic tests, which allow students to access academic content anytime and anywhere.(Al-Shomali, 2007, p. 6)

E-learning relies on digital platforms such as learning management systems.(LMS), which provides access to courses, tests, and interactive forums. So Students can participate in online discussions, watch educational videos, and engage in interactive activities that support the development of critical thinking skills.(Zaytoun, 2005, p. 54)

Theories explaining e-learning:

Self-learning theory(Self-directed Learning):

This theory emphasizes that students are responsible for their own learning. E-learning is a powerful tool that helps promote self-learning, as students can organize their time and track their progress themselves. (Byrne, 2004, p.12).

Cognitive learning theory(Cognitive Learning Theory):

Focuses on how information is processed. Through e-learning, students are able to process digital information in a variety of ways, which enhances their comprehension and analysis of content. (Aleks, 2004, p.9).

2. Traditional education

Traditional education is a system that relies on direct interaction between the teacher and students inside the classroom. Lessons are usually delivered through live lectures, group workshops, and the use of traditional tools such as blackboards and textbooks. soIt relies on direct communication between the teacher and the students, where information is presented and concepts are explained interactively, and includes activities that allow students to interact with each other.(Khamis, 2003, p. 255)

Theories explaining traditional education:

interactive learning theory(Interactive Learning Theory):

This theory emphasizes that learning occurs most effectively when students interact with each other and with the teacher. In traditional education, direct interaction with the teacher and classmates is essential to enhancing understanding of the material.(Al-Faqih, 2011, pp. 36-37)

behavior theory(Behaviorism):

This theory holds that learning occurs through response to stimuli. In traditional education, stimuli such as tests and assignments are used to reinforce learning behaviors in students.(Al-Ghamdi, 2007, p. 35)

3. critical thinking

Critical thinking is the ability to objectively analyze and evaluate ideas and information, determine their value, and make decisions based on sound reasoning and arguments. Critical thinking is a fundamental skill in modern education, especially in fields such as the arts and social sciences. Critical thinking includes skills such as analysis, comparison, evaluation, and inference. It helps students deal with information critically, enhancing their ability to make informed decisions.(Al-Ghamdi, 2007, p. 15).

Theories Explaining Critical Thinking:

Critical thinking theory(Critical Thinking Theory):

This theory suggests that critical thinking relies on a set of cognitive processes that include analysis, interpretation, and evaluation. In this context, blended and traditional education enhance critical thinking skills by encouraging active discussions and interactive activities.(Salem, 2004, p. 91)

Cognitive development theory(Cognitive Development Theory):

Focuses on how critical thinking develops over time. Through blended learning, critical thinking can be enhanced by interacting with diverse content and providing a stimulating learning environment.(Abu Musa, 2010, pp. 1-14).

4. Factors affecting the integration of blended learning:

- **Technology Readiness** The implementation of blended learning requires the availability of an appropriate technological environment and continuous technical support from educational institutions.
- **Student and teacher readiness** Blended learning requires students and teachers to adapt to new methods and change the way they interact with academic content.
- **Curriculum integration** The curriculum should be flexible enough to support the integration of different teaching methods in an integrated manner.

(Abu Khatwa, 2009, pp. 9-13)

Axis II: Previous Studies

Abdul Razzaq Clinic Mohammed Al-Lahabi2017

The effect of blended learning on the achievement of second-year middle school students in physics and the development of their science process skills and their tendency towards physics

The use of traditional teaching methods, strategies and techniques has become unable to keep pace with the changes that the world is going through today because they are dominated by superficiality, indoctrination and rote memorization. Through the researcher's long experience in education and the questionnaire distributed to physics teachers, there appeared a weakness in their achievement and scientific process skills and a slight inclination towards the subject of physics for the second intermediate grade. Therefore, the researcher adopted a modern strategy in teaching away from indoctrination, which is the integration of modern technologies that can be available in schools such as computers, data shows and disks.CD) and video clips and the Internet and between the traditional method and what is called blended learning may be a solution to this problem. The aim of the research is to identify the effect of blended learning on the achievement of second-year middle school students in physics and the development of their science process skills and their tendency towards physics. Three null hypotheses were formulated for the research, and the number of individuals in the research sample was (60) students, with (30) students for each of the experimental and control groups, who were selected randomly. The researcher prepared an achievement test of the objective test type and the multiple-choice type with four alternatives and a science process skills test and a scale of tendency towards physics. The data were processed statistically, and the results indicated the existence of a statistically significant difference between the two research groups in achievement and the development of science process skills and the tendency towards physics in favor of the experimental group. The researcher came out with a number of conclusions, recommendations and suggestions

Kamal Ismail Ghafour2019

The effect of blended learning on the achievement of fifth grade primary school students in mathematics and their reflective thinking

This study was conducted in Iraq and aimed to know the effect of blended learning on the achievement of fifth grade primary school students in mathematics and their reflective thinking. The researcher used the experimental method in his study, and chose a sample of (33) students from the fifth grade of primary school in Al-Amani Primary School in Diyala Governorate, Al-Muqdadiyah District. Section (A) was randomly selected as an experimental group of (19) students who were taught according to blended learning, and Section (B) was a control group of (14) students who were taught according to the traditional method. The researcher prepared two tests, the first an achievement test

consisting of (20) paragraphs, and the second in reflective thinking skills consisting of (20) paragraphs. Validity, reliability, difficulty coefficient, and discrimination coefficient were found using appropriate statistical methods. After applying the test to the research sample and analyzing the data, the researcher concluded that there were statistically significant differences at the significance level (0.05) between the average scores of the experimental group that studied the scientific material according to blended learning and the average scores of the control group that studied the scientific material in the traditional way in the achievement test, and there were no statistically significant differences at the significance level (0.05) between the average scores of the experimental group and the control group in the reflective thinking skills test.

Fatima Abdel Maleh2023

The role of technological preparation for female students in interacting with e-learning

E-learning has become a new method of learning and has imposed itself strongly on information centers, educational and academic institutions as a new form that is compatible with the developments of information technology. E-learning has become an important part of the entity of academic universities, and plans have been developed for rapid response across all universities and their formations to achieve the sustainable development goals that the United Nations is working on in Iraq, including alternative learning programs to achieve the fourth goal of the sustainable development goals (quality education). Therefore, the researcher sought to pay attention to technological numbers through the extent of qualifying female students and their interaction with e-learning with high efficiency and achieving the goals of the educational process. The study aimed to: 1- Prepare the scales of technological numbers and the scale of interaction with e-learning among female students of the College of Physical Education and Sports Sciences for Girls, University of Baghdad. 2- Identify the degree of technological numbers and the degree of interaction with e-learning and then find the correlation relationship and the percentage of contribution and the impact of technological numbers on interaction with e-learning among female students of the College of Physical Education and Sports Sciences for Girls, University of Baghdad. The descriptive approach was used using the correlational method after the research community was determined as female students of the College of Physical Education and Sports Sciences for Girls, University of Baghdad, numbering (350) students for the academic year (2022-2023), distributed over four academic stages. The sample was selected randomly, with (50) female students from each stage, i.e. the sample number was (200) female students, and they were randomly divided into (the exploratory experiment sample, which numbered (10) female students - the sample of the technological preparation and interaction scales with e-learning, which numbered (100) female students, with a percentage of (50%) - the main experiment sample, which numbered (90) female students who were randomly selected. The researcher prepared the technological preparation and interaction scales with e-learning, and both scales include 20 statements, the highest score for each scale is 100 degrees and the lowest score is 20, and the hypothetical mean is 60. After distributing the two scales, collecting the results, and processing them, she concluded: 1- There is a significant direct correlation between the technological preparation of female students and their interaction with e-learning. 2- Technological preparation has a high contribution rate and an impact on change, i.e. the better the female students are prepared from the technological aspect, the more their interaction with e-learning increases.

Yasmine Mahdi Shahid2023

The effect of student-led classroom discussions on historical understanding and the development of critical thinking skills among first-year middle school female students in history

The research aims to measure the effect of applying classroom discussions in enhancing their historical understanding and critical thinking. The research was applied to a sample of middle school students for the history lesson for the 2021-2022 semester. The research relied on the experimental method and a scale test that was prepared to identify the level of improvement in historical understanding and critical thinking among students after dividing them into two groups, the first of which is taught in the traditional way, which is the control group, and the second group is taught through the application of the discussion method, which is the experimental group. The research used appropriate statistical tools such as the equivalence test, homogeneity of variance, normal distribution, and analysis of variance. One of the most important conclusions was that applying classroom discussions to students contributes to improving their participation and influence in classroom discussions and developing their educational abilities, which enhances historical understanding and develops critical thinking skills.

(Chapter Three: Research Methodology and Procedures)

First: Research methodology: Research methodology

The current research, due to its nature and objectives, requires the adoption of an experimental research method. This method is characterized by its high accuracy compared to other methods such as the descriptive method and the historical method. In the experimental method, the role of the researcher is not limited to merely describing phenomena or recording past incidents, but rather goes beyond that to intervening and influencing some factors in a controlled manner under controlled conditions, with the aim of achieving a specific condition or the occurrence of a specific incident and determining the reasons for its occurrence.(Dawidar, 2010: 20).

Second: Experimental design: **Experimental design**

Researcher And I depend TA partially controlled experimental design of two groups, one experimental and the other control, in response to the requirements and objective of the research. Figure (1) illustrates this design.

Post-test	Dependent variable	independent variable	Pre-test	The group
Critical thinking skills	E-learning and traditional education	Effectiveness of blended learning	Critical thinking skills	empiricism
				The officer

Third: The research community and its sample:

A- Research community: Research population

The researcher must accurately define the research community, which refers to the individuals or persons who constitute the subject of the research problem and to whom the research results can be generalized. The research results should be limited to the community from which the research sample was selected.(Abbas et al., 2009: 217).

The current research community consists of: Fine Arts Institutes In the center of the governorate Baghdad, the second Rusafa For the academic year (2024 - 2025). The General Directorate of Education in the Governorate was visited. Baghdad For the purpose of identifying the number Institutes.

B- Research sample: Research sample

The researcher divided the research sample into two sections:

A- Sample schools:-

To do this in a simple random way, the numbers are numbered. Institutes In the center of the governorate Baghdad With sequential numbers, a random number table or similar method is then used to select a random number. For example, if the method is to generate random numbers,.

ب- Student sample:-

Based on the method adopted by the researcher, it was chosen Fine Arts Institutes in Baghdad appointed in the governorate center Baghdad, the second Rusafa It was found that it contains six sections for the first intermediate grade for the academic year (2024-2025), namely (A - B - C - D - E - F). Using the random drawing method, sections (B) and (D) were selected to represent the research group. Section (D) was also selected as a control group, with 34 students, and its students will be studied in the traditional way without being exposed to any intervention. While Section (B) was selected as an experimental group, with 34 students as well, and its students' critical thinking skills will be studied using the effectiveness of blended learning.

Fourth: Equivalence of the two research groups: **Equivalent of the research groups**

The equivalence process begins with avoiding any disparities between the two research groups on the variables mentioned. To achieve this, necessary information is collected about the students from each group, including chronological age in months, critical thinking skills (pre-test), parents' academic achievement, Raven's IQ test, and other important variables.

An information request form was prepared and distributed to students in collaboration with the school administration. Students were asked to write their information about their parents' education and the birth date of each student (day, month and year) using their ID cards. The researcher then compared this data with the information on the school card to ensure accuracy.

After collecting the information, statistical procedures are used to ensure equivalence between the two groups. Statistical tests such as thet to compare means, use standard deviation to assess data dispersion, and also use regression analysis to check for statistically significant differences between the two groups on important variables.

1- The chronological age of students calculated in months:

Table (1) Age parity of the students of the two research groups

Significance level 0.05	T-value		degree of freedom	Standard deviation	Contrast	Average Arithmetic	number Sample	The group
	Tabular	calculated						
Not significant	2,000	0.892	66	6,267	39.27	152,876	34	empiricism
				4,459	19.88	151,321	34	The officer

2- Students' scores in the drawing skill test (pre-test).

Table (2) Equivalence of the two research groups in critical thinking skills

Significance level 0.05	T-value		degree of freedom	Standard deviation	Contrast	Average Arithmetic	number Sample	The group
	Tabular	calculated						
Not significant	2,000	0.652	66	7,788	60.65	62.01	34	empiricism
				4,629	21.42	61.65	34	The officer

3- Parents' educational attainment:

The researcher obtained information about the students' fathers' and mothers' achievement through the aforementioned form. After obtaining the information, the researcher used the chi-square as a statistical method to process the data as follows:

A- Parents' educational attainment:

The calculated Chi-square value (1.602) appears to be less than the tabular Chi-square value (7.82) at a significance level of (0.05), with a degree of freedom equal to 3. This indicates that there are no statistically significant differences between the levels of

parents' achievement in the two groups. In other words, it can be said that the two groups are equivalent in terms of the level of parents' achievement, and therefore, the results related to the effect of the level of parents' achievement on students' performance can be relied upon without affecting the research results, and Table (3) shows this.

Table (3) Equivalence of the two research groups (experimental and control) in the variable of parents' academic achievement

Significance level (0.05)	Values (Ka2)		degree of freedom	University and above	institute	Preparatory	Read and write, primary and secondary	number	The group
	Tabular	calculated							
Not significant	7.82	1,0228	3	6	8	16	4	34	empiricism
				8	7	13	6	34	The officer

B- Mothers' educational attainment:

The calculated Chi-square value (0.672) is less than the tabular Chi-square value (7.82) at a significance level of (0.05), with a degree of freedom equal to 3. This indicates that there are no statistically significant differences between the levels of mothers' achievement in the two groups. In other words, it can be said that the two groups are equivalent in terms of the level of mothers' achievement, which means that the results related to the effect of the level of parents' achievement on students' performance can be relied upon without affecting the research results, and Table (4) shows this.

Table (4) Equivalence of the two research groups (experimental and control) in the variable of mothers' educational attainment

Significance level (0.05)	Values (Ka2)		degree of freedom	University and above	institute	Preparatory	Read and write primary and intermediate	number	The group
	Tabular	calculated							
Not significant	7.82	0.672	3	9	8	10	7	34	empiricism
				10	7	9	8	34	The officer

4- Intelligence Test (Raven):

Table (5) T-test results for intelligence scores of students in the two research groups (experimental and control)

Significance level	T-value		degree of freedom	Standard deviation	Contrast	Average Arithmetic	number Sample	The group
	Tabular	calculated						
0.05	2,000	0.921	66	4.27	18.23	17.65	34	empiricism
				3.66	13.39	17.89	34	The officer

It is clear from Table (5) that the two research groups (experimental and control) are equivalent in the intelligence test variable (Raven), as the calculated t-value reached (0.921), which is smaller than the tabular value of (2000), which means that it is not statistically significant.

Fifth: Controlling extraneous variables: Control of extraneous variables

Control is the process of keeping all variables constant except the one whose effect is being studied. This helps researchers control the conditions and factors that may affect the results of the study. This helps increase the reliability of the results and the confidence of researchers in the study. It also ensures that the results are valuable.

Based on the data presented, it appears that the researcher held all variables, such as parental education and student age, constant to ensure that differences in students' critical thinking skills performance were not due to these factors. This procedure ensures that any changes in student performance are due only to the independent factors studied, and not to other factors that were held constant.(Raouf, 2001: 158-159).

1- Sample selection:

Choosing a research sample that is representative of the study community is vital in the

research process. If a sample that is well representative of the original community is chosen, this facilitates the research process and saves a lot of effort and time. Also, the results obtained from the representative sample are usually close to the results that would have been obtained if the study had been conducted on all members of the original community.

A representative sample should have diversity and proportionality that reflects the characteristics and composition of individuals in the original population from which the sample was drawn. This helps in achieving confidence in the results and their correct generalization to the original population.(Abbas et al., 2009: 218).

2- Processes related to growth (maturity):

The temporal change of students in terms of their physical and mental development is an important factor to consider in the research. Students' performance, skills and behaviour can change over time as a result of physical and mental growth and development, as well as the impact of experiences and experiments they undergo during their study period.(Atwi, 2009: 199).

Changes that occur over time may not have a significant impact on the results of the study. In addition, if the duration of the experiment is uniform and similar between the two groups, any effects resulting from time changes may be equivalent between the two groups, reducing their impact on the results.

Therefore, the results of the research can be relied upon well even in the presence of possible time changes, provided that the duration of the experiment is uniform and short enough that time changes do not have a significant effect on the results.

3- Experimental extinction:

Avoiding the negative impact of random exclusion of sample members is vital to ensuring the accuracy of results in research studies. Although the absence of some individuals may negatively affect the results, the current study did not witness any excesses in this regard, except for some individual absences that were minor and almost balanced. Thanks to this balance, any negative impact that this factor could have on the research results was avoided.

4- Accompanying incidents:

This type of factor refers to natural and human conditions that may affect the course of the experiment or student participation in it, such as natural disasters or unexpected political or social events.

Since none of these conditions occurred during the implementation of the experiment, the results were not subject to any negative effects resulting from these external events. This increases the validity of the results and contributes to the strength of the study, as one can be confident that the results correctly reflect the effect of the studied independent variable without the influence of any unwanted external factors.

5- Measuring tool:

Using a standardized measurement tool is an important step in controlling factors in research. By using a critical thinking skills measure that the researcher has developed himself, it is possible to ensure that the measurement process is standardized and that the method is consistent across groups. This increases the accuracy of the results and reduces any potential effects resulting from differences in the way skills are assessed.

Effect of experimental procedures:

In order to reduce the negative impact of some experimental procedures on the dependent variable, the researcher took several teaching procedures, which were as follows:

A- The study material The study material was used uniformly throughout the experiment for both research groups, and this material was based on the drawing curriculum approved by the Iraqi Ministry of Education for the academic year (2024-2025).

B- Teaching the subject The researcher taught the students of both the experimental group and the control group himself, with the aim of avoiding any variation in the quality of education between the two groups. This was to ensure the accuracy and objectivity of the results by avoiding any influence that might result from the difference in teachers involved in teaching the subject.

C- Distribution of shares:

Table (6) Distribution of the research group's shares per week

the hour	The share	The Division	The group	today
8:50	Third	for	empiricism	Monday
9:30	Fourth	D	The officer	
1:15	Third	D	The officer	Thursday
2:00	Fourth	for	empiricism	

D- Probation period:

The duration of the experiment was standardized for both research groups, starting on Thursday, November 9, 2024, and ending on Monday, January 8, 2025. This equal timing of the experiment in both groups aims to achieve a balance in the experimental conditions and ensure the objectivity of the results.

h- Educational means:

These tools help to explain concepts and skills in an intuitive and engaging way, which contributes to deepening students' understanding and motivating them to acquire knowledge and skills effectively. When experiences are presented in this way, they have a greater impact on students and remain fixed and persistent in their minds for a long time.(Ghanem, 2006: 177).

Therefore, the researcher relied on unified educational methods when teaching critical thinking skills to the students of the two research groups, according to what is required to teach each concept, such as the blackboard, colored pens, pictures, drawings, and shapes, according to the effectiveness of blended learning.

And- the school building:

The researcher applied the experiment in a school with similar classes in terms of area, lighting, windows, number of seats and their type, which is:Al Fikr Intermediate School for Boys.

E- Research confidentiality:

This step seems deliberate and important to ensure uniformity of conditions to which students are exposed during the experiment, and thus to achieve reliability of the results. By having the researcher teach the students himself, any effects that may arise from variation in teaching methods or interaction with students between different teachers can be avoided.

In addition, the researcher can be better able to control the course of the experiment and deal with any unexpected situations during its implementation, due to his deep knowledge of the objectives of the research and the experiment. Thus, the results are more accurate and reliable, and can be concluded with greater confidence.

Sixth: Research requirements: Research requirements

1- Formulating behavioral objectives:

The researcher has worked hard to design behavioral objectives for teaching critical thinking skills in the first intermediate grade, which is an important step in determining performance expectations and achieving educational goals. By formulating three behavioral objectives for each concept, the researcher allows himself and the students to define clear criteria for evaluating performance and achieving success.

He also points out that the researcher sought the opinions of experts in various fields to ensure the validity and suitability of the behavioral objectives he formulated. They were approved after making some amendments, which shows the interest in making the objectives compatible with the requirements of the art education subject and modern educational standards.

These steps reflect the effort made by the researcher to ensure the quality of the educational design and the effective achievement of the specified objectives.

2- Preparing teaching plans:

Lesson plans represent the detailed steps and procedures that a teacher intends to follow to achieve the educational objectives in the class. These plans include a detailed explanation of the concepts and skills that students will learn, as well as the support tools and educational materials that will be used to achieve these objectives. Lesson plans aim to guide the learning process and provide an appropriate learning environment to achieve maximum benefit for students from the course material.(Atiya, 2008: 271).

The teaching plans for implementing the experiment were prepared based on the following steps::

A- Preparing model plans for the control group.: (10) teaching plans were prepared for the control group according to the traditional method. These plans were presented to a group of experts in art education and teaching methods, and based on their suggestions and opinions, some modifications were made to them, and in light of that, the other plans were prepared in the same way.

b- Preparing model plans for the experimental group: (10) teaching plans were prepared for the experimental group. These plans were designed based on the topics of the four units designated for the experiment, which were designed in accordance with the concepts found in the prescribed book. The researcher used the strategy of Blended learning To design these units, with the aim of covering all required study units.

Seventh: Search tools: Tools of the research

A- Preparing critical thinking skills

Tests are an effective means of measuring the abilities of examinees in a variety of subjects and areas. It is important that tests have some basic characteristics in order to be a good measure of abilities (Van Dalen, 1993: 446-447).

An organized and systematic process in which a set of questions, tasks, or actual tests are presented to a group of individuals, students, or examinees. This procedure aims to measure and evaluate a particular characteristic, whether it is knowledge, skill, thinking, or behavior, through a sample of behavior.(Malham, 2010: 318).

To confirm the validity of the prepared test, the researcher followed specific steps in the process of constructing it.:

1- Formulating test paragraphs The researcher relied on the type of objective tests such as multiple-choice tests in formulating the test paragraphs, due to their flexibility and ability

to evaluate different levels of learning. For this purpose, the researcher prepared 30 test paragraphs of this type, where each paragraph included four alternatives, one of which was correct and the other was incorrect, which enables the evaluation of the specific learning processes for each concept (definition, discrimination, application).

2-Formulating the test instructions: The researcher formulated the test instructions in a way that included two aspects: - Answer instructions: They included a description of the test objective, the number of paragraphs, how to answer with a clear explanatory explanation, the number of available alternatives, and the time allocated for answering. - Instructions for correcting the test: One point was assigned for the correct answer, and zero for the wrong answer, in addition to treating the unanswered paragraph or the paragraph that includes multiple answers with the same treatment allocated for the wrong answer.

3- Test validity: After preparing the test, the researcher evaluated its validity, as validity is a basic specification to ensure the quality of the test. A test is considered valid if it accurately measures what it is supposed to measure.(The Guarantor, 2009: 113).

Since the validity of the test is an indicator of the possibility of inferring its scores and making decisions accurately, the researcher has verified the availability of this characteristic in critical thinking skills as follows:

A- Apparent honesty: Face validity

The researcher followed important procedures to ensure the validity of the test he designed. By presenting the test paragraphs to a group of experts in the fields of art education, educational and psychological sciences, the researcher benefited from their opinions and comments to improve the wording of the paragraphs and modify the alternatives to make them clearer and more appropriate for students.

After modifications were made based on expert feedback and were approved by them with a high agreement rate, the test can be considered valid, meaning that it accurately and clearly reflects the concept it is intended to measure and students can easily and accurately understand the instructions. This enhances confidence in the validity of the test results and its effectiveness as a tool for measuring abilities and knowledge.

B- Content validity: Content validity

Content validity focuses on the extent to which the test items accurately and correctly represent the behavior, skill, or knowledge that the test is intended to measure. Content validity is important because it ensures that the test actually measures what it is expected to measure.

Content validity is typically achieved by presenting the test content and behavioral objectives that represent the subject matter to a group of experts in the field. If the experts agree that the test accurately measures the concepts or skills that represent the subject matter, then the test can be considered content valid.

This type of validity helps ensure that the test accurately reflects the concepts and skills required in the curriculum, which contributes to the reliability of the test as a tool for assessing students.

The test was approved by experts with an agreement rate of more than (80%), so the test was considered valid in terms of content.

4- Applying the test to the survey sample:

A - Knowing the time it takes for the test: This is important for planning the session in which the test will be administered. Knowing the time it will take helps in planning to ensure that there is enough time to complete the test completely without rushing or delaying.

b- Identifying unclear paragraphs for the purpose of rephrasing them Correcting unclear passages is essential to ensure that students understand and provide correct answers. Unclear passages can lead to a higher rate of incorrect answers and reduce the accuracy of the test overall.

C- Finding the discrimination and difficulty coefficients for the test items.: This can help improve the quality of the test and estimate its difficulty. Knowing the discrimination and difficulty coefficients helps identify items that may need to be modified or rephrased to improve the quality of the test.

D - Calculate the test reliability coefficient Knowing how stable a test is over time is important for determining its reliability and use in repeated measurement.

E - Knowing the effectiveness of wrong alternatives: Assessing the effectiveness of incorrect alternatives can help improve test quality and understand students' level of understanding.

Take Tresearcher And A survey sample of 30 students from Fine Arts Institutes This was on Tuesday, November 7, 2024. After ensuring their participation in studying the scientific material that was studied with the students of the two research groups, the researcher applied the test to them.

As for the approximate time allocated to answer the test items, it was extracted in the following manner::

1- Low difficulty paragraphs: The answer time was estimated at an average of 30 seconds per paragraph.

2- Paragraphs of medium difficulty: The answer time was estimated at an average of 60 seconds per paragraph.

3- High difficulty paragraphs: The answer time was estimated at an average of 90 seconds per paragraph.

These steps helped the researcher allocate enough time for the students to successfully answer the test without tiring them out or distracting them.

$$\text{Approximate time to answer} = \frac{\text{Time of the first student to finish the test + time of the second student ... the last student (30)}}{\text{Number of students}}$$

After conducting the test on the survey sample, the researcher analyzed the test paragraphs using the following statistical operations::

A- Paragraph difficulty factor:

This factor measures the difficulty of each paragraph in the test, and is important to ensure that the paragraphs are suitable for all students without over-challenging or over-facilitating. The researcher found that the difficulty factor of the paragraphs ranged between (0.35 - 0.76), which means that the paragraphs are suitable and valid for use in the test.

b- The power of distinguishing the paragraph:

The discriminant power of the item measures the ability to discriminate between students with different levels in the measured trait. The researcher found that the discriminant power of the item ranged between (0.33 - 0.67), which indicates that all test items have a good ability to discriminate between students regardless of their levels.

Based on these results, the researcher decided to retain all test items without making any modifications, as they appear valid and appropriate for use in the assessment.

C- The effectiveness of wrong alternatives In building critical thinking skills, the researcher relied on multiple-choice paragraphs, where each paragraph contains a number of alternatives that are supposed to attract the attention of some students. Incorrect alternatives are considered effective when they attract a number of students in the lower group assuming that they are the correct alternative at a higher rate than students who choose them in the upper group. A negative value for the incorrect alternative indicates that it is a good alternative.

Concept Acquisition Test Reliability

To calculate the test reliability, the researcher used the split-half method, where he divided the test items into two halves and calculated the Pearson correlation coefficient between them. The reliability coefficient between the two halves was 0.74, and after correcting it using the Spearman-Brown equation, it reached 0.86, which is a good reliability coefficient and indicates the quality of the test as a means of measuring the acquisition of concepts, according to Hedge's criteria.(Hedges) suggests that a test is considered good when the reliability coefficient is between 0.60 and 0.85.

Eighth: Procedures for implementing the experiment:

2Actual application of the experiment: The following actions were taken by the researcher to ensure the integrity of the experimental design and the achievement of the research objectives:

A- The researcher taught the two research groups himself to avoid differences resulting from differences in the teacher and the extent of his influence on the students and their understanding of the nature of the experiment.

B- Equal amounts of scientific material were distributed to the two research groups, with equal information provided to them.

C- Not allowing students to move between the two groups during the experiment.

D- The researcher did not disclose to the students the nature of the research and its objectives, but rather taught as a faculty member and stressed the importance of learning the subject matter and cooperation. E- The experiment period for both research groups lasted for 13 weeks of the first semester of the academic year (2024-2025), starting from Thursday, November 9, 2024 until Monday, January 8, 2025.

The experimental group was taught according to the effectiveness of blended learning, while the control group was taught in the traditional way. Y- The critical thinking skills answer sheets have been corrected.

Applying critical thinking skills in its final form After completing the statistical treatments and confirming the validity and reliability of the test, and presenting it to critical thinking skills experts, the final test consisting of 30 test paragraphs was prepared. The paragraphs were distributed equally between the three processes: definition, discrimination, and application. The test was applied to the research sample on Thursday, November 9, 2025.

Ninth: Statistical methods: Statistical methods

The researcher used the following statistical methods in his research procedures and analysis of his results, and he made use of the program (SPSS) for statistical data processing:

1- T-test(T. Test) for two independent samples:

This method was used to determine the significance of statistical differences between the two research groups when statistically equivalent and in analyzing the results.

2- Pearson's correlation coefficient (Person Correlation Coefficient).

For the purpose of calculating the test reliability coefficient using the split-half method

3- Spearman-Brown equation (Spear man- Brown).

The researcher used the equation to correct the correlation coefficient between the two parts of the test (odd and even paragraph scores) after extracting the Pearson correlation coefficient.

4- Chi-square test Chi-Square).

5- Difficulty factor equation (Item Difficulty).

6- Paragraph discrimination coefficient equation (Item Discrimination).

7- Equating the effectiveness of wrong alternatives (Effectiveness of Distracters).

Used to find the effectiveness of incorrect alternatives to test items.

(Chapter Four Show results And its interpretation)

This chapter includes a presentation and interpretation of the research results, in order to identify the effectiveness of blended learning between e-learning and traditional education in developing critical thinking skills among students of fine arts institutes, as follows:

First: Display results:

1- The result of the research objective (the effectiveness of blended learning between e-learning and traditional education in developing critical thinking skills among students of fine arts institutes).

In order to verify the validity of the first null hypothesis, which states that (there are no statistically significant differences between the students of the experimental group who studied according to the effectiveness of blended learning and the students of the control group who studied using the traditional method in the post-test (critical thinking skills)

After applying the post-test critical thinking skills to the students of the two research groups, and correcting the answers, the arithmetic mean, standard deviation and variance were extracted. For the grades of the students of the two groups, and using the t-test (T-test) for two independent samples, then finding the calculated T-value. It became clear that the difference was statistically significant in favor of the experimental group at the level (0.05) and with a degree of freedom (66), as the calculated T-value was (7.893), greater than the tabular T-value of (2.000), as shown in Table (7).

Table (7) T-test for the two research groups in post-critical thinking skills

Significance level	T-value		degree of freedom	Standard deviation	Contrast	Average Arithmetic	number Sample	The group
	Tabular	calculated						
statistical function	2,000	7,893	66	7,876	62.03	57.34	34	empiricism
				5,220	27,24	39.89	34	The officer

This indicates the superiority of the students of the experimental group that studied using the blended learning effectiveness over the students of the control group that studied using the traditional method, and thus the null hypothesis is rejected.

Second: Interpretation of results:

After statistically analyzing the data, it was found that the students in the experimental

group had superior critical thinking skills compared to the students in the control group. This superiority is attributed to several reasons, including:

1. Using the effectiveness of blended learning: Able to motivate students and enhance their engagement with the subject matter. Instead of just doing traditional teaching techniques, they can feel actively involved in the learning process when using Blended learning.

2. Stimulate creativity and innovative thinking The effectiveness of blended learning can help motivate students to explore new and different ideas during the drawing process. This process can help develop their artistic skills in unconventional ways and enhance their creativity.

3. Increase focus and attention: may lead to Blended learning To increase students' focus and interest in the drawing task, which enhances their interaction with the subject and increases the quality of performance.

4. Boost self-confidence Students may feel more confident in themselves and their ability to innovate and express themselves through drawing when using the effectiveness of blended learning, which is positively reflected in their performance.

5. Personal interaction: may allow Blended learning With more personal interaction with students, the teacher or supervisor can individually guide students towards achieving their drawing goals, increasing the effectiveness of the learning process.

(Chapter Five: Conclusions, Recommendations and Proposals)

First/ Conclusions:

In light of the results I have reached Current research The following can be concluded:

1. Effectiveness of blended learning effectiveness The results indicate that the use of blended learning can be more effective in enhancing students' drawing skills than traditional teaching methods.

2. The importance of interaction and active participation: Effective interaction and active engagement of students with the course material through the use of blended learning enhances their ability to develop their artistic and innovative skills.

3. The impact of personal support The conclusion suggests that guiding students individually and providing them with personal support through the effectiveness of blended learning may have a positive impact on their performance and motivation.

4. The necessity of renewal in teaching and learning The results indicate the importance of renewing educational methods and adopting creative methods such as the effectiveness of blended learning to motivate and enhance student learning in innovative ways.

5. Support for further research and development The results indicate the importance of conducting further research and experiments to better understand the mechanisms of blended learning effectiveness and develop it in line with modern teaching and learning needs.

Second: Recommendations:

In light of the research results, the researcher recommends the following:

1. Building the effectiveness of blended learning in teaching: It is recommended that blended learning be adopted as an effective tool in enhancing students' drawing skills. Teachers and trainers should look for suitable opportunities to include this strategy in art lessons and workshops.

2. Develop teaching and learning resources Educational resources should be developed to support the effective use of blended learning, including teaching aids that encourage creative thinking and guide students towards achieving their artistic goals.

3. Providing training for teachers and trainers Training and workshops should be provided to teachers and trainers to learn how to effectively implement blended learning in the learning environment.

4. **Promote individual interaction** Teachers should be encouraged to guide students individually and provide personal support to them to increase the effectiveness of the learning process and raise the level of self-confidence in students.

5. **Support continuous research and development** Continuous research and development in technical teaching techniques and learning strategies should be supported to modernize educational practices and improve the quality of education.

Third: Proposals:

In continuation of this A search The researcher proposes conducting the following studies:

1. The impact of blended learning on students' motivation and engagement in art lessons A study can be conducted to measure the impact of using blended learning on students' motivation and engagement in art lessons, and compare it to traditional teaching methods.

2. The impact of blended learning on developing students' creativity A study can be conducted to evaluate the impact of blended learning on developing students' creative ability and generating new and innovative ideas in the drawing process.

3. The effect of guiding students individually in using the effectiveness of blended learning on students' performance in drawing skills An analytical study can be conducted to measure the impact of guiding students individually and providing them with personal support in using the effectiveness of blended learning on their performance and development of their drawing skills.

4. Comparison between the effectiveness of blended learning and traditional teaching methods in enhancing drawing skills among students with special needs An experimental study can be conducted to compare the effectiveness of blended learning and traditional teaching methods in enhancing drawing skills among students with special needs.

5. Applying the effectiveness of blended learning in specific artistic fields such as digital painting or 3D drawing A study could be conducted to explore the impact of blended learning on developing drawing skills in specific artistic fields such as digital drawing or 3D drawing and compare it with traditional techniques.

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