فاعلية تقنيات الجيل الرابع للشبكة العالمية للمعلومات في ضوء استراتيجية التعلم التعاوني وأثرها على بعض مخرجات التعلم لطالبات كلية العلوم والدراسات الإنسانية

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كيفية اقتباس البحث

الجوهري ، هالة خيرى عبد الغنى، فاعلية تقنيات الجيل الرابع للشبكة العالمية للمعلومات في ضوء استراتيجية التعلم التعاوني وأثرها على بعض مخرجات التعلم لطالبات كلية العلوم والدراسات الإنسانية، مجلة مركز بابل للدراسات الانسانية،2021، المجلد:11 ،العدد: 2 .

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The effectiveness of the fourth-generation technologies of the global information network in light of the cooperative learning strategy and its effects on some learning outcomes among the students of the College of Sciences and Human Studies

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ملخص البحث

هدفت هذه الدراسة إلى قياس فاعلية تقنيات الجيل الرابع للشبكة العالمية للمعلومات في ضوء استراتيجية التعلم التعاوني وأثرها على بعض مخرجات التعلم لطالبات كلية العلوم والإنسانيات. استخدمت الباحثة المنهج الوصفي وشبه التجريبي، وتكونت عينة البحث من طالبات كلية العلوم والدراسات الإنسانية، حيث تم اختيار (10) طالبة عشوائياً للتجربة الاستكشافية. تم تقسيم (40) طالبًا بشكل عشوائي إلى مجموعتين تجريبية تدرس حسب متغيرات البحث والتصميم التجريبي لها.

قامت الباحثة بحساب الانحراف المعياري والمتوسط الحسابي وقيمته (T) لبيان دلالة الفروق بين متوسطي درجات طلاب المجموعتين الضابطة والتجريبية في التطبيق البعدي للاختبار التحصيلي، وحساب متوسط الدرجات لطلاب المجموعتين الضابطة والتجريبية. المتوسط الحسابي والانحراف المعياري وقيمته (T) لبيان دلالة الفروق بين متوسطي الدرجات لطلاب المجموعتين الضابطة والتجريبية في التطبيق البعدي. وخلص مقياس التعاون ونتائج البحث إلى أن بيئة التعلم الإلكتروني التعاوني من خلال منصة التعلم الإلكتروني (بلاك بورد) تتيح دراسة دروس مساق طرق التدريس الإسلامية (2) على مدار اليوم والأسبوع وهذا يمثل ميزة للطالبات، حيث يفضل بعض الطالبات التعلم في الصباح والبعض الآخر يفضل في المساء حسب الوقت المتاح لهن.

Research Summary

This study aimed to measure the effectiveness of the fourth generation technologies of the global network of information in light of the cooperative learning strategy and its effects on some learning outcomes of female students of the College of Sciences and Humanities. The researcher used the descriptive and quasi-experimental approach, and the research sample consisted of female students of the College of Science and Human Studies, where (10) students were randomly selected for the exploratory experiment. (40) students were randomly divided into two experimental groups that study according to the research variables and the experimental design for it.

The researcher calculated the standard deviation, the arithmetic mean and its value (T) to demonstrate the significance of the differences between the mean scores of the students of the control and experimental groups in the post application of the achievement test, and the calculation of the arithmetic mean and the standard deviation and its value (T) to demonstrate the significance of the differences between the mean scores of the students of the control and experimental groups in the post application. The cooperation scale, and the results of the research concluded that the environment of collaborative e-learning through the e-learning platform (blackboard) provides for studying the lessons of an Islamic teaching methods course (2) throughout the day and the week and this represents an advantage for female students, as some students prefer to learn in the morning and others prefer in the evening according to The time available to them.

Introduction

Education is the most important element of production and creativity in any nation, and education is not related only to the ideological or cultural aspect of any mother. The global community today is in contact, so that our planet appears to be diminishing day after day under our feet. Education today has become the backbone of economic and social life, as knowledge and information are the core of the modern economy in the era of information explosion, with no limitations of means of communication.

This is what prompted university education institutions to adopt the use of these technologies in general and web technologies in particular to achieve the targeted learning outcomes.

Educational institutions, on top of which are university education institutions, have to go towards employing the web and its applications and technologies in the educational process due to their ability to face many of the challenges facing traditional institutions. The web, through some of its tools, can provide adequate support and guidance to learners and allow an exchange of experiences between learners and experts. It provides a variety of educational designs to suit various educational situations, and e-learning was one of the most prominent educational images and services provided over the web.[1]

The cooperative learning strategy is one of the most important strategies used in providing electronic courses, as educators have paid increasing attention in recent years to the activities and activities that make the student the focus of the teaching and learning process, as students are arranged in groups and assigned to work or an activity that they do together with cooperation, and attention In this way, students benefit from speaking about different topics, and learning takes place in a comfortable environment free from tension and anxiety in which students' motivation increases dramatically([2])

Sense of the problem:

Through reviewing the results of previous studies and research and recommendations of specialized conferences and seminars, in addition to an exploratory study conducted by the researcher, the following is an explanation of these points:

1 -Accessing previous research and studies:

There are many studies that dealt with the fifth generation of the web and its technologies for educational purposes, including:

•The study of "Melissa" (Melissa, 2009) which aimed to use wiki in education on a sample consisting of (75) students in the BA in

Information Systems course, concluded that the use of wiki did not achieve a positive result in education due to poor design and use.

•Also, "Hend" (2008) conducted a study aimed at achieving classroom communication in electronic courses using blogs by distributing educational materials and tasks / questions for students (homework - exams) in the course, collecting students' opinions and feedback, sharing information, encouraging interactions Female students between each other and between them and the teacher. The results of the study confirmed that (84%) of the students confirmed that the blog course is more useful and effective compared to other electronic courses.

•The study of Hind Al-Khalifah (2007) also aimed to study and analyze electronic blogs and find out their role as a means of passing computer culture over a sample of (60) individuals. The study tools consisted in a questionnaire that included (25) questions, and the study emphasized the importance of the role of electronic blogs in passing on culture. Computer, where the number of visitors to the blog reached (50) daily visitors, and most of them were female students (intermediate - secondary – university)

•From the above, it is evident that the results of studies dealing with the use of global information network technologies differ in different learning environments.

•There are also many studies that dealt with the cooperative learning strategy and emphasized the importance of using it within the e-learning environment, including:

Cahoon's study (2001), which concluded that the skills of distance education via the Internet can be developed by combining self-learning and cooperative learning in workshops or through short electronic courses.

This is also what Yasser Shaban's study (2007) found, which demonstrated the effectiveness of using the Internet in cooperative learning versus individual learning on both achievement and skills of using ready-made programs, and it emphasized the importance of cooperative, network-based learning in training students to use ready-made programs, design and produce programs. Educational.

From the above, it becomes clear that the results of studies dealing with both cooperative and individual learning, such as the study of Yasser Shaban (2007), the importance of cooperative learning versus individual, while the study (Cahoon) (Cahoon, 2001) emphasized the necessity of combining individual and cooperative learning situations as it helps In developing skills, this supports the importance of conducting this research.

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2 -Recommendations of conferences and seminars:

The current research comes in response to the recommendations of the following conferences and seminars:

Where the Fourth Saudi Technical Conference for Professional and Technical Training (2006) recommended the necessity of the initiative of both educational and training institutions in Arab countries to take advantage of services and sharp developments in web technologies and harness them for the benefit of the student and the trainee, and the necessity to hold periodic workshops to familiarize users with how to design and use networks The globalization of information, and the definition of new ones that appear with the rapid development of the Internet.

The annual scientific conference "The Fourth Arab, the First International" (2009) came out with a set of recommendations, including: The need to use educational technologies to improve the educational process in higher education institutions, and emphasized the importance of the university professor's role in achieving quality in university education outcomes.

It is clear from the foregoing that the current research came in line with what was recommended by previous conferences and seminars on the necessity of applying technologies and services of the global network of information in the educational process, especially in light of the quality and accreditation system, and it is also clear to what extent students of the College of Sciences and Humanities need to use these technologies, provided that this is According to their needs and in light of the most appropriate learning strategies that are consistent and compatible with them.

It also became clear that there are no Arab studies "within the limits of the researcher's knowledge" that have been interested in employing the use of fourth-generation technologies for the global information network in light of a collaborative e-learning strategy to support e-learning outcomes among students of the College of Sciences and Humanities.

Research problem:

Based on the above, the current research problem is identified in the weakness of learning outcomes (cognitive achievement and cooperation skills) among students of the College of Science and Human Studies, which prompted the researcher to design an e-learning environment based on the cooperative learning strategy using the fourth-generation technology of the global network of information, so the research problem the current is determined in answering the following main question:

What is the effectiveness of using the fourth-generation technologies of the global information network in light of the cooperative learning strategy on some learning outcomes of the female students of the College of Sciences and Human Studies؟

This main question is divided into the following sub-questions:

1 - What is the effectiveness of using the fourth-generation technologies of the global information network in light of the cooperative learning strategy on developing cooperation skills among students of the College of Sciences and Human Studies

2- What is the effectiveness of using the fourth-generation technologies of the global information network in light of the cooperative learning strategy on developing some aspects of knowledge among students of the College of Sciences and Human Studies.

Research hypotheses:

1-There is a statistically significant difference at the level of significance (0.01) in the cognitive achievement test between the mean scores of the experimental group students who studied using the collaborative e-learning environment using the fourth-generation technology and the control group who studied using the usual e-learning environment.

2-There is a statistically significant difference at the level of significance (0.01) in the scale of cooperation between the average students of the experimental group who studied using the collaborative e-learning environment using the fourth-generation technology and the control group that studied using the usual e-learning environment.

-There is effectiveness for the collaborative e-learning environment with fourth-generation technology at the level of (1.2) in developing the knowledge achievement of the students of the Department of Islamic Studies at the College of Science and Human Studies, according to the adjusted earning percentage of Blake.

- There is effectiveness for the collaborative e-learning environment with the fourth-generation technology at the level of (1.2) in developing the cooperation scale for the students of the Department of Islamic Studies at the College of Science and Human Studies, according to the adjusted earning percentage of Blake.

Research aims:

The current research aims to achieve the following objectives:

1 – To recognize the effectiveness of using the fourth-generation technologies of the global network in the cooperative use of information among female students of the college of Sciences and Human Studies.

2 – Knowing the effectiveness of the fourth-generation technologies of the global network in the light of cooperative learning on developing the

skills of the fourth generation among students of the College of Sciences and Human Studies.

Research importance:

The importance of the current research is due to:

First: For female students:

1 - Helping learners to develop targeted learning outcomes as the uses of fourth generation technologies of the global information network in light of the cooperative learning strategy

2 - It helps in the continuous development of learners, and encourages them to adapt to new specializations.

Second: For educational institutions:

1- Upgrading the scientific and technical level of learners in the field of educational technology, which is reflected in the educational system as a whole.

2 - Keeping pace with technological developments and recent trends in education.

Third: With regard to scientific research:

The current research may be the basis for studies and new developmental research for the fourth generation technologies of the Global Information Network, and different learning strategies for developing targeted learning outcomes.

Research limits :

The current research was limited to the following limits:

1- Female students of the Islamic Studies Department at the College of Sciences and Humanities, the second semester of the academic year 1440/1441 AH.

2- Some types of learning such as cooperative learning skills.

3- The blackboard electronic learning platform at Prince Sattam bin Abdul-Aziz University.

Search variables:

Independent variable:

An e-learning environment based on the use of some fourth-generation technologies for the global information network in light of the cooperative learning strategy.

Dependent variables:

Represented in some learning outcomes: (cognitive aspects - cooperation skills).

Research Methodology :

The current research is based on the following two approaches:

• Descriptive method: in the part of the theoretical study of literature, and previous studies and research related to the scientific axes included in the research.

Quasi-experimental approach: To learn about the effectiveness of using fourth-generation technologies for the global network of information in light of the cooperative learning strategy on some learning outcomes of students of the College of Sciences and Humanities.

The research sample :

The research sample was selected from the College of Science and Humanities students, where (10) students were randomly selected for the exploratory experiment. (40) students were randomly divided into two experimental groups that study according to the research variables and the experimental design for it.

Experimental design:

The current research includes the following variables:

Table (1)

Research Experimental Design

Groups	The number	Pre-analogy	Independent variable	Telemetry
- **First pilot**	20	Cognitive achievement test	The collaborative e-learning environment using the fourth generation technologies of the global information network	- A cognitive achievement test - Cooperation scale
- **The second pilot**	20	Cognitive achievement test	The usual e-learning environment	- A cognitive achievement test - Cooperation scale

The current research is based on a design with two experimental groups with a two group pretest post. In this type of designs, the sample individuals are randomly selected, and divided into two experimental groups, and the measurement tools are applied before the two groups before the experiment, then the experimental group is studied (1 The second experimental group (2) is taught through a collaborative e-learning environment using the fourth-generation technologies of the global information network, and the second experimental group (2) is taught through the usual e-learning environment, and after the completion

of the experiment, telemetry tools were applied to the two groups. (40) were selected.

One of the female students in the Department of Human Studies at the College of Sciences and Humanities. The sample members were divided randomly into two experimental groups, each group comprising (20) students, and a table (1) illustrating this design.

search tools :

The current research uses the following research tools:

1. An achievement test that measures the cognitive profile (prepared by the researcher).
2. Cooperation scale to measure cooperation skills (prepared by the researcher).

Research terms:

The fourth generation technologies for the global information network (the fourth generation of the web web4.0)

The term fourth generation of the web or web 4.0 indicates that it is the fourth generation of services and technologies provided through the world wide web, which is one of the services provided by the internet[3].

It is defined by "Caitlin" (Caitlin.2009, pl) as a new generation of the Web and a new way for Internet users consisting of: a productive user, a controller, and a content organizer.

Ibrahim([4]) defines it and defines it as a set of technologies provided by the fourth generation of the web to help create, edit, edit, publish or share web content with others, such as wiki services, blogs, social networks, media sharing, social favorites, website feed, live chats and conferences ... ... and others.

The researcher will adopt the term (the fourth generation of web4.0) in the current research.

Procedural definition of the researcher :

It states that it is the fourth generation of global network technologies for information that can be used during the e-learning environment, which allows students of the College of Science and Human Studies to exchange information and cooperate through it, and then its effects on some learning outcomes are determined in light of the cooperative learning strategy.

Collaborative learning strategy:

Attia Khamis([5]) defines it as a learning strategy in which learners work together in small or large groups and share in accomplishing the task or achieving common educational goals, where knowledge and skills are acquired through joint teamwork.

Learning outcomes:

Learning outcomes were defined as expressions describing what the student or learner should know and be able to perform, and the student is expected to complete it at the end of his studies for a specific course or educational program[6]

Procedural definition of the researcher

It states that it is the knowledge, cognitive skills, cooperation and communication skills expected of the student to be achieved after her studies through the collaborative e-learning environment.

Active Learning Strategy Think-Pair-Share:

This method was created after the disadvantages of the traditional lecture method, which is usually used for large numbers in colleges. The teacher often asks an open question directed to all students in the class, especially in traditional methods (lecturing) and finds that very few students participate, and sometimes you do not find a student or volunteer who wants to participate.

Some studies have shown that about 4-5 students participate with 75% of the speech in classes of no more than forty students, while the rest do not speak and do not want to participate. And in more numerous seasons, the percentage drops to much more.

There is a method called Think-Pair- Share, developed by Frank Lehman. It may be called (think, pair, share) or (think, compare, share).[7]

Search procedures:

The research procedure includes the following steps:

1- Accessing Arab and foreign studies and literature related to the research topic.

2- Determine a list of educational goals to be achieved in preparation for building the learning environment on its light, then present it to a group of experts and specialists, and make the required adjustments.

3- Determine the scientific content in light of the objectives, then present it to a group of experts and specialists, and make the required adjustments.

4- Preparing the research tools (achievement test - cooperation measure), then presenting them to a group of specialized arbitrators, making the required amendments, then preparing them in their final form.

5- Selecting the exploratory sample students - other than the basic experience students - and conducting the exploratory experiment to measure the validity and reliability of the research tools and identify the problems that the researcher will face during the application.

6- Selecting the basic research sample from female students of the Department of Islamic Studies, College of Science and Human Studies in As Sulayyil - Prince Sattam University and randomly distributing them into two experimental groups according to the experimental design of the research.

7- Applying the research tools (achievement test) beforehand on group members according to the experimental design used for the research.

8- Conducting the basic experiment so that the experimental group (1) is studied through a collaborative e-learning environment using the fourth generation technologies of the global network of information, and the

experimental group (2) studies, through the usual e-learning environment, the application of remote research tools to the research sample.

9- Processing data from the pre and post applications by appropriate statistical methods to reach results.

10- Presenting, interpreting and discussing the results in light of the theoretical framework, the results of the related research and the research hypotheses.

11- Presenting a set of recommendations and proposals in light of the results reached.

Theoretical framework:

By acquainting the researcher with Arab and foreign studies and literature that are related to the research topic

As the researcher studied and analyzed some of these models, which the current research benefited from in identifying the most important stages and steps involved in designing electronic learning environments and guiding them in creating a collaborative e-learning environment based on the fourth generation technology of the global information network, through which students practice learning activities The most important of these models were the following: The Dick and Carrie model[8], the Passerini & Granger model[9], the Ibrahim Abdul Wakeel Al Far model[10] and the Muhammad Atiya Khamis model[11], the model of Mustafa Jawdat[12] The model of Abdullah Abdul Aziz al-Musa and Ahmed Abdel Aziz Al-Mubarak (2005), the model of Abd al-Latif Saffi al-Jazzar (2013)

The researcher has noticed, through studying the previous models, that they are very similar in their general framework, as they consist of the following stages: analysis, design, production, evaluation, and development. However, these models differ in the tasks of each stage, according to the goal that the model seeks to achieve. The researcher adopted the model of Abd al-Latif Safi al-Jazzar (2013) on the basis that it is a model specially prepared for the design and production of e-learning environments. It is also a comprehensive model for educational design that includes all educational design and development processes, and emphasizes the interaction between the student and the faculty member and educational content, It is also in line with the nature of the current research, and is characterized by flexibility and mutual influence between its elements and the learning environment. This model includes

Figure (1) in five stages:

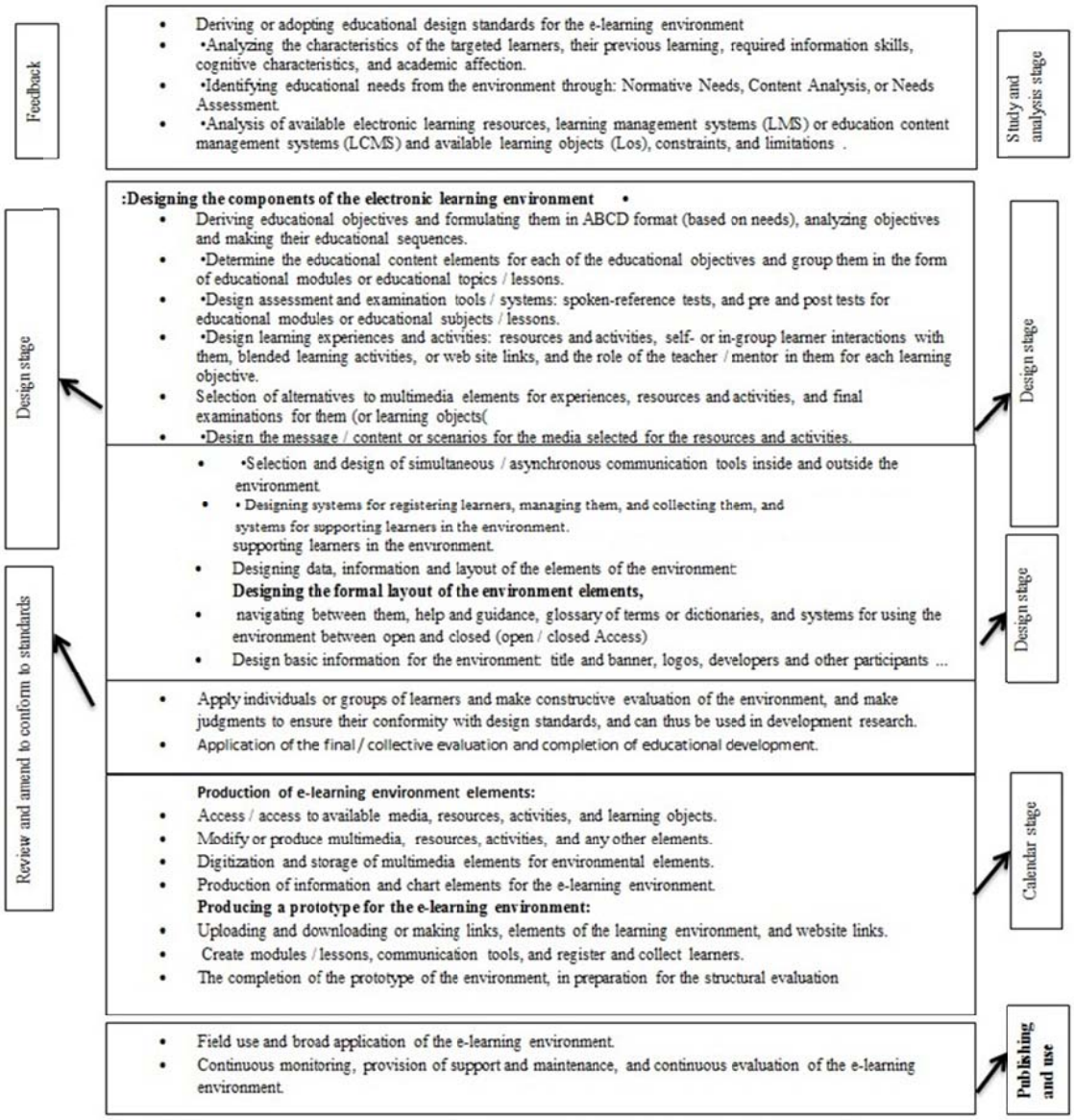

Figure (1) The Butcher Model for Instructional Design (2013) Electronic Learning Environments.

This model consists of five stages where it can be applied at the level of one lesson or at the level of a unit of study, and the specifications of the model have shown that it requires previous knowledge of the requirements of using computers and educational media, because the model is in line with the methodology of systems and the steps of scientific thinking, as the author of the model indicated to The educational procedures that take into account when applying the model include thirteen steps revolving around the educational reality The objectives, standards and tests that are used to judge the achievement of goals, teaching and teaching strategies, learning resources, the role of

learners and other human elements, as well as the structure of the first building and the processes of amendment to it as a result of exploratory experimentation and evaluation and nutrition processes that help in the processes of correlation and adjustment in all steps of the process of building the system. The current research has adopted the butcher's model (2013) because it is compatible with the nature of the research in terms of designing and developing a collaborative e-learning environment using digital technologies due to:

• The novelty of the model and its relevance to the purpose of the study.

• The model is simple, clear and comprehensive. It includes five phases. Each stage includes a statement of detailed procedural steps for the production and design of an e-learning environment.

•The model is flexible and scrutinizes all the inputs to the design process (stage) such as learning / learning models, design variables, learning theories, strategies and methods of cooperation / participation, structures and organization of content and activities and their management, any design innovations, as well as simultaneous / asynchronous communication tools inside and outside The environment, which is something that most of the models have not covered in detail and is totally in line with the variables and nature of the current study "The use of digital technologies in light of the cooperative learning strategy."

• Integrity of the model, and the relevance of the feedback to all stages of the model.

• The model for the learner to progress towards achieving justice according to his / her level of learning, as time is not fixed on learning for each learner, and it provides a set of educational options and the learner has to choose what suits him.

• The model proved effective in designing educational and training educational data.

(1/1) List of quality standards for designing and producing a collaborative e-learning environment using digital technologies

In deriving the list of standards, the researcher relied on analyzing Arab and foreign references, research and studies that focused on designing electronic learning environments in general, and collaborative e-learning environments using digital technologies in particular, in addition to research and studies related to e-learning standards based on the World Wide Web, as well as special standards The process of preparing a list of quality standards for designing a collaborative e-learning environment to use digital technologies has gone through the following steps:

1. Determine the general objective of building the list of standards:

The general objective of building the list is to reach quality standards for designing and producing a collaborative e-learning environment using digital technologies of the current research.

2. Preparing and building a list of standards:

The list of standards was built through previous studies and research, and the list included in its initial form (11) standards, and they are:

The First Standard: The objectives of the educational environment are specific and measurable, to support the educational content provided, and to help develop cooperative learning skills.

The second Standard: The educational content available in the learning environment is consistent with the desired objectives, and the division, organization and formulation of it to achieve the intended learning outcomes.

The third Standard: Environment activities and assignments are designed to help verify individual and collaborative performance in building knowledge.

The fourth Standard: The learning environment provides students with feedback and evaluation commensurate with the nature of the environment and its learning outcomes.

The Fifth Standard: The multimedia elements "text, images (static / animated), graphics (illustrations - video clips and animations), music and sound effects" are of high quality as they are employed to serve the collaborative e-learning environment and achieve the targeted learning outcomes.

The Sixth Standard: Navigating the environment is based on a set of tools and links that support access to enrich the learning process and achieve its outcomes.

The Seventh Standard: The environment interface and pages are characterized by simplicity, clarity and ease of use in accessing information.

The Eighth Standard: The cooperative learning strategy achieves the learning outcomes of the target environment using the fourth-generation technologies of the global information network.

The Ninth Standard: Electronic support and assistance in the learning environment are provided in the form of instructions and directives that help the student achieve educational goals, tasks and activities.

The Tenth Standard: Educational interaction and control are commensurate with the educational objectives, tasks, and activities of the learning environment and the collaborative learning strategy.

The Eleventh Standard: Digital technologies are used to support the cooperative learning strategy and to achieve targeted learning outcomes.

Each standard included a set of performance indicators distributed as follows:

Table (2)

Distribute performance indicators to standards

N	Standard	Number of indicators
1	The First Standard	6
2	The Second Standard	14
3	The Third Standard	8
4	The Fourth Standard	7
5	The Fifth Standard	18
6	The Sixth Standard	9
7	The Seventh Standard	8
8	The Eighth Standard	10
9	The Ninth Standard	7
10	The Tenth Standard	12
11	The Eleventh Standard	15
Total	11	114

3. Check the authenticity of the list:

To ensure the validity of the standards, they were presented to a group of arbitrators specialized in the field of educational technology to ensure the correctness of the linguistic wording, the scientific accuracy of each standard and its indicators, and to determine the degree of relevance of each standard to its indicators, and to add, delete or amend what they deem appropriate.

After studying the opinions of the arbitrators 'warp, the researcher finds the arbitrators' agreement on:

- The importance of all standards and indicators for the collaborative e-learning environment using digital technologies for the global information network. The researcher calculated the relative weights of the referees ’responses to each of the criteria and indicators as follows.

Monitoring the judges ’responses about the importance of each criterion and its indicators, by making a frequency table where the response" not important "was given one score.

- Extracting the percentage of the agreement of the masters of the arbitrators for each standard and its indicators, and by calculating the percentage of agreement it was found that it ranged from 80% to 100%, and accordingly, the criteria and indicators that increase the agreement of

the masters of the arbitrators exceeding that percentage, and accordingly the necessary amendments were made to the list of standards.

4. Reaching the final picture from the list:

After finalizing the list and verifying its validity, the researcher reached a final list of criteria, which included 11 criteria, (114) performance indicators (Table 2)

5. Standards E-Learning Environment Match Card:

The researcher derived a list for judging the treatment / e-learning environment proposed from the list of final criteria through.

• Determine the goal of the card
• Drafting the initial image of the cards
• Set a card that matches the learning environment to standards

(1/2) Analysis of the characteristics of the target learners:

The students are the beneficiaries of providing an e-learning environment using digital technologies based on the cooperative learning strategy, and then the characteristics of the learners (sample members in this research) were determined in the following points:

• Female students of the Islamic Studies Department, College of Sciences and Human Studies.
• They have a desire and willingness to acquire cooperative learning skills through the e-learning environment.
• They have a positive trend towards using the global network of information represented by the blackboard e-learning platform.
• They have the ability to self-control and provide emotional and emotional balance.
• They have the ability to think innovatively, solve problems, and have the ability to understand and formulate theory.

(1/3) Identifying the educational needs of a collaborative e-learning environment using digital technologies in light of the list of skills through:

1- Determine the general goal of building a list of cooperative learning skills
2- Building and organizing a list of cooperative learning skills through the blackboard e-learning platform.

(1/4) Analysis of available electronic learning resources, available learning objects (Los), obstacles, and determinants, and this was done as follows:

(1/4/1) Analysis of available electronic learning resources:

Since the current research used the electronic learning environment based on the global network of information, so it does not need classrooms as in traditional learning, and therefore the learning environment will be varied

according to the choice of each student, as students can through the collaborative electronic learning environment and the specifications specified by the researcher for the appropriate devices To operate the environment, without being restricted by a specific place or time.

The researcher made use of many different multimedia elements, such as: pictures, static drawings, video clips, and some digital technologies, in addition to many of the sites related to the operation and use of the collaborative electronic learning environment, which was shared with the students through social favorites.

2 - 1 Using the components of the collaborative electronic learning environment through:

(1/1) Determining and formulating appropriate educational goals

In its initial form, and presented it to a group of referees specialized in the field of educational technology, curricula and teaching methods, with the aim of seeking their opinion on the following:

How important are the goals:

The extent to which these goals can be achieved

- The extent to which the goals are appropriate for the e-collaborative learning skills.
- The extent of the linguistic integrity of the items of the target list.
- Adding, modifying, or deleting other educational goals.

After studying the opinions of the arbitrators, the researcher found that the arbitrators agreed on:

- Amending some formulation of procedural objectives.
- Removing some repeated words in the formulation of some goals. The initial list contained many repeated words, such as repeating the name of the program after each goal.

After modifications made by the referees to the list of objectives, the list became in its final form (3) general objectives, and (15) procedural cognitive objectives distributed on the levels (remembering - understanding - application and above), and accordingly the content of the collaborative e-learning environment has been divided Using digital technologies to three educational topics, where the first topic achieves the first goal, the second topic achieves the third goal, and the third topic achieves the third goal.

(2/1/1) Defining the educational content elements for each of the educational objectives and grouping them in the form of educational lessons with an emphasis that the learning environment gives students the opportunity to choose and organize the succession of content according to

their abilities and preferences through the lists, and the following is a presentation of the content elements:

Elements of educational content, lesson one (extracurricular religious activities):

1) Defines the concept of religious activity
2) Mentions the importance of religious activity
3) Defines the foundations of religious activity.
4) Mention the goals of religious activity.
5) It compares areas of religious activity.

Elements of educational content, lesson two (teaching discipline and ethics)

1) Enumerate the foundations of teaching discipline
2) Know the goals of teaching discipline
3) Defines the concept of edification
4) Mention the importance of discipline
5) Apply the steps of teaching discipline

Elements of educational content, lesson three (Teaching the Prophet's biography):

1) Mentions the concept of the Prophet's biography.
2) Determines the importance of the Prophet's biography.
3) Mention the goals of the Prophet's biography.
4) Determines the foundations of teaching the Prophet's biography.
5) Mention the steps of teaching the Prophet's biography.

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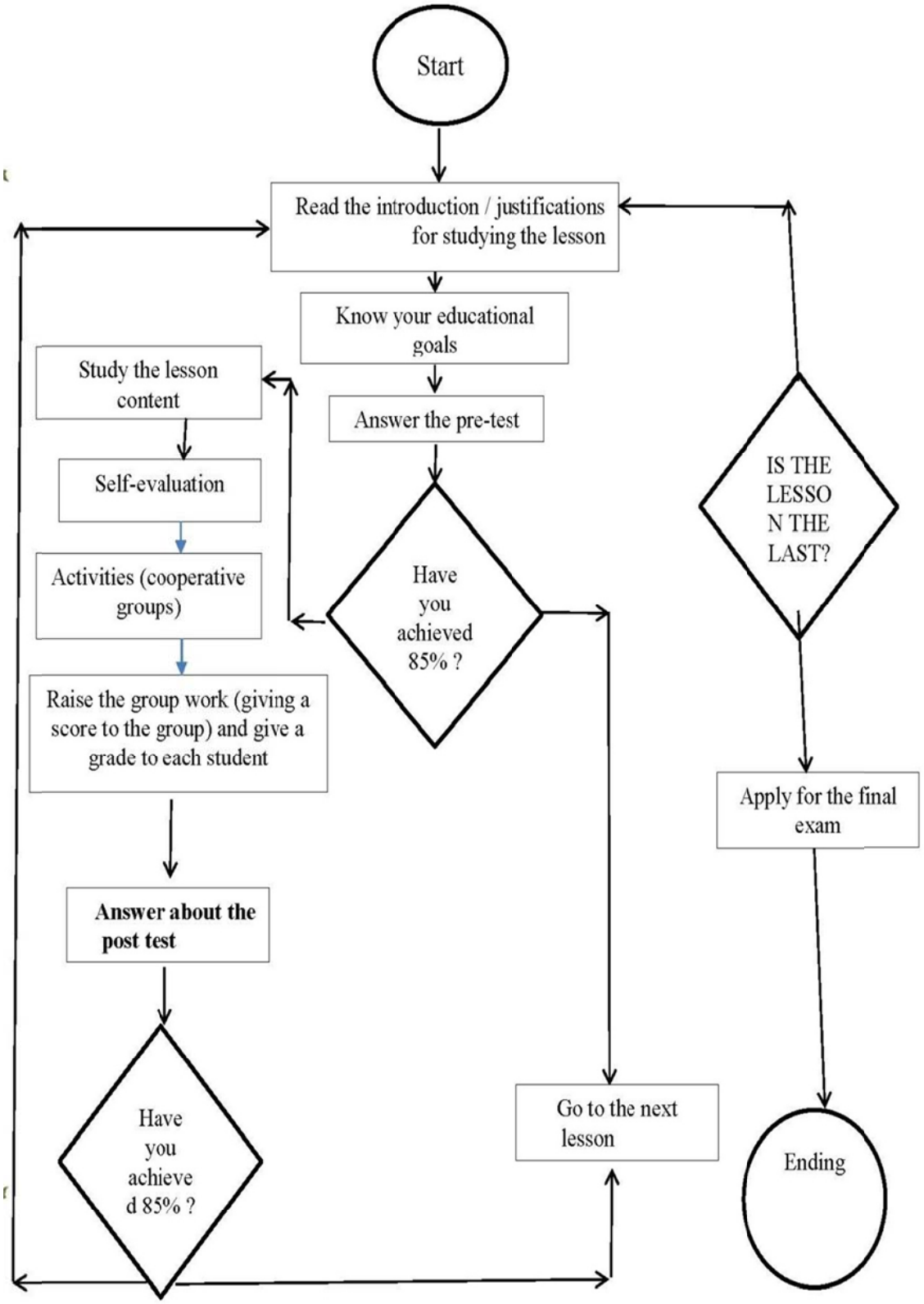
Start
Read the introduction / justifications for studying the lesson
Know your educational goals
Answer the pre-test
Have you achieved 85% ?
Study the lesson content
Self-evaluation
Activities (cooperative groups)
Raise the group work (giving a score to the group) and give a grade to each student
Answer about the post test
Have you achieve d 85% ?
IS THE LESSO N THE LAST?
Apply for the final exam
Go to the next lesson
Ending

Figure (2) a walking map for the lessons of the collaborative e-learning environment using the fourth-generation technologies of the global information network.

Procedures for applying the search experience through:

First: Identifying the strategy used in teaching:

As this strategy was distinguished by that it can apply to any number of students and is characterized by its ease, as it directs a question to all students and then tells them to think (10 seconds - 5 minutes) about the answer silently and individually and the time depends on the teacher's estimates and the degree of complexity of the question. Then she asks them to be peers so that the two students share and discuss together in answering the question. Then randomly ask some students to answer the question.

The random question is important to ensure that the student is known to have thought individually and with his or her colleague. After you are satisfied that the students have understood the concept, you move on to the lecture style again, meaning that the method here is initially a traditional lecture style, but it is developed throughout this activity. And when the teacher wants to implement this method, it is recommended that he show them the three steps so that they can practice them automatically.

Strategy steps:

1-Ask a question to everyone so that each student thinks individually for a period of 5-10 seconds. The time may increase or decrease according to the teacher's estimates, so thinking may need minutes.

2-After the individual thinking process for each student, every two students share together and exchange their contributions in the first step and agree on an answer

3-Choose randomly a number of students to summarize their discussion or present their solutions.

Note the following important points:

In the initial thinking stage, the student must ask himself these questions, and the teacher can help him with that if necessary as a start, so that he can train in the way of thinking, for example: (What information do I need to solve this problem? . What information do I know about this issue and learned it previously? What steps and tools do I need to solve this issue? ... What questions do I need to ask my colleague in the next step ?)

Its most important uses:

When reviewing notes, vocabulary review, solving exercises, reading examination, concept review, lecture review, outline, discussion

questions, peer reading review, agree / disagree activities, brainstorming, simulation, summarizing, and opinion development

Second: counter research tools: through the following:

A- A cognitive achievement test

B- A measure of cooperation for the e-learning program with the fourth-generation technology

Building search tools:

Where the researcher prepared the measuring, tools used in the current research tools, namely

A- The cognitive achievement test (before - after) to measure the change in the cognitive achievement level of female students in the Department of Islamic Studies in the Islamic Teaching Methods course 2.

B - To measure cooperation (pre-post) to measure the effectiveness of developing some cooperation skills among students of the Islamic Studies Department in the Islamic Teaching Methods course 2.

The following is an explanation of how to prepare the tools used in the research:

A- The cognitive achievement test (steps to build the test):

- Determine the goal of the achievement test.
- Drafting the initial image for the achievement test

Preparing a table of specifications and determining the types of test items and drafting them, after reviewing the references and studies that dealt with evaluation methods and tools in general and the objective tests in particular, the researcher found that the tests that depend on multiple choice and questions of right and wrong are the most appropriate types of achievement tests for their flexibility. The multiplicity of their formulation methods and the ease of their collection, the current rates of stability and reliability, as well as the speed and ease of answering them, in addition to their suitability for measuring learning and also characterized by clarity of questions, ease of access to the correct answer and speed of correction, in addition to providing an opportunity to cover a large part of the field of measurement, and is objective in correction Accuracy in measurement, and these questions are usually more stable.

Table (4) shows the specifications of the cognitive achievement test related to the cognitive aspect related to the collaborative e-learning environment, and after formulating the test vocabulary in its initial form, and setting the necessary instructions for it, it was necessary to verify the validity of the test for application as shown in Table (3)

Certification of the arbitrators:

This was done by presenting the initial picture of the cognitive achievement test vocabulary to a group of arbitrators (education

technology - curriculum professors) in order to ensure the suitability of the questions to the educational objectives, the validity of the linguistic and scientific formulation of the test vocabulary, then measuring the test's reliability by measuring the reliability and validity factor. (Alpha-a) on the results of the pre-application of the research sample using the statistical software package.

Table (3)

Specifications of the achievement test for the cognitive aspect related to the e-collaborative learning environment.

Procedural objectives of the subjects of the lessons	Levels of targets			The number of test items		Total vocabulary for each goal	The ratio
	remember	Understanding	Application	Multiple choice	Right and wrong		
First Lesson	10	5	4	10	9	19	19%
Second Lesson	12	3	4	9	10	19	19%
Third Lesson	8	5	5	10	8	18	18%
total summation	30	13	13	29	27	56	100%

After the researcher completed the steps of preparing the achievement test and making sure of its validity and reliability, the test became composed of (56) items, of which (27) were true and false, and (29) were of the multiple choice type, then the test was produced electronically and uploaded to the learning platform. The electronic (blackboard) that is included in the electronic systems for students of Sattam University.

Second: scale of cooperation:

Objective of the Cooperation Scale:

The researcher built the Collaboration Scale, which aims to measure the cooperative learning skills that have been developed through collaborative e-learning.

Building the scale in its initial form:

Examining the educational, Arab and foreign literature and previous studies and research that focused on e-learning skills, which included measures of cooperation or similar, and then determining the scale items.

Components of cooperation scale:

The scale consists of (25) items that express the cooperation skills that an individual acquires through his work in a collaborative e-learning environment with a cooperative work group. This scale was designed in a

way that allows the student to place a sign () in front of the situation that describes his behavior.

Scale Instructions:

The scale instructions were written with these instructions on its first page, and this includes the following:

Defining the student the purpose of the scale.

Emphasizing the necessity of reading the scale items carefully before answering them.

• Place a sign () at the bottom of the degree that the student's behavior conforms to the statement.

• Emphasis on leaving any item of the scale without expressing an opinion on it.

Set the cooperation scale:

The researcher adjusted the cooperative learning skills scale to ensure its validity for application, through:

Calculation of validity of cooperation scale:

The researcher relied on the validity of the referees. After preparing the initial image of the scale, it was presented to a group of specialized referees in the field of educational technology to benefit from their views on the validity of the procedural formulation of the scale's vocabulary and its clarity and the suitability of the scale design method to achieve its objectives.

The results of the arbitration resulted in reformulating some of the scale phrases, and in light of the above, modifications were made to reach the final picture of the cooperative learning skills scale.

Calculation of the consistency of the cooperation scale:

The researcher adjusted the scale to ensure its suitability for application, and this was done by calculating the reliability of the internal consistency parameter (alpha-a) of Kronbach.

The researcher verified the stability and internal coherence of the scale by measuring the consistency coefficient (alpha-a) of Kronbach on the research sample using the statistical software package (SPSS). Table (4) shows the results of the statistical stability measurement.

Table (4)

Results of calculating the stability factor (a) for the cooperation scale.

Stability coefficient	Sample number	Vocabulary	the value
Kronbach alpha coefficient	14	25	0.817

The previous table shows the reliability coefficient of the scale, where a = 0.817, which indicates the accuracy of the scale, its consistency and consistency in what it provides us with information about individuals' vision of cooperation skills through their vision of themselves from the work groups and what they do in creating learning for the rest of the group members.

Third: Choose the research sample:

His research eye included about (40) female students from the Department of Islamic Studies at the College of Sciences and Human Studies in the Governorate of As Sulayyil.

Fourth: Conducting the search experiment:

The search experiment went through the following steps:

- The pre-application of the cognitive achievement test as the research sample.
- Active learning strategy in teaching using collaborative e-learning with the fourth generation technology of the global information network.
- Post application of the cognitive achievement test, as the research sample.
- The pre-application of the cooperation scale on the research sample.
- Post application of the cooperation scale on the research sample.

The experiment was applied to the research sample during the period between 3/15/2020 AD to 4/15/2020 AD.

Fifth: Research Results and Data Processing:

A- Test the validity of research hypotheses:

To test the validity of the research hypotheses to measure the effectiveness of using the fourth generation technology of the global network of information through the cooperative learning strategy in developing and developing some learning outcomes and acquiring the skills of electronic collaborative learning among the students of the Islamic Studies Department in the Islamic Studies Methods course 2 and after obtaining the results of the cognitive achievement test and applying the cooperation scale before And after the application of the e-learning platform program (blackboard), where the data was processed statistically by using the Statistical Software Package for Social Sciences program to conduct statistical analysis of the data through the following statistical methods:

T.Test to calculate the difference between the mean scores of the experimental and control group students in the post application of the academic achievement test and to calculate the effectiveness of the earnings ratio using the Blake equation as follows:(13)

whereas:
Adjusted gain ratio (leverage) for Black =

$$\frac{M2 \_ p1}{E} + \frac{M2 - p1}{M1 - E}$$

whereas:
M2 = average post-test score.
P1 = average pretest score.
E = Great end of the hard dis
The adjusted gain percentage ranges from 0 to 1.2, and Black believes that if this percentage is greater than or equal to (1.2), the validity and effectiveness of the program used can be judged
Where the results of the cognitive achievement test and the cooperation measure were discussed in the light of previous studies as follows:
First: To verify the validity of the first hypothesis:
Where the assignment states:
1- There is a statistically significant difference at the level of significance (0.01) in the cognitive achievement test between the mean scores of the experimental group students who studied using the collaborative e-learning environment using the fourth-generation technology and the control group that studied using the usual e-learning environment. Where the validity of the first hypothesis was verified by calculating the value of (T) for comparison between the mean scores of the experimental group and the control group in the post application of the academic achievement test. For the cognitive achievement test, and Table (5) shows the standard deviations, the arithmetic means, and the "T" value for the students 'scores in the post application of the achievement test.

Table (5)

The arithmetic means, standard deviations, and "t" value of the scores of the students of the control and experimental groups in the post application of the achievement test.

Statement	Post application		Value "T"	Statistical significance	The degree of potency
	Average	deviation			
Control group	16.8	5.2	6.3	A function at the 0.01 level	1.44
Experimental group	19.5	3.9			

Through Table (5), it becomes clear that there are statistically significant differences at the level (0.01) between the mean scores of the students of the control and experimental groups in the post application of the achievement test in favor of the experimental group students, as the computerized value of (t) amounted to (3.6), and from During the calculation of the value of the modified gain for Black, it became clear that the degree of effectiveness is (1.44), which is statistically significant because the percentage specified by Black is greater than (1.2) and less than (2). This indicates that using the fourth generation technology for the global network of information through a learning strategy The cooperative has contributed to the improvement and development of some learning outcomes of the students of the experimental group.

The researcher attributes that the use of the cooperative learning strategy through the global network of information (blackboard) provides students with the opportunity to repeat, practice, read and read several times according to their abilities and thus provide an opportunity for students to practice and repeat in addition to the forms and fees provided by the program that lead to the development and improvement of learning outcomes.

Second: To verify the validity of the second hypothesis:

1- Where the hypothesis states: There is a statistically significant difference at the level of significance (0.01) in the cooperation scale in the Islamic Teaching Methods course 2 between the average grades of the experimental group students who studied using electronic cooperative learning using the fourth generation technology of the global information network (blackboard) and the group Control who studied using standard e-learning.

Where the validity of the second hypothesis was verified by calculating the value of (T) for a comparison between the mean scores of the experimental group in the pre and post application of the cooperation scale. For the cooperation scale, and the following table (6) shows the arithmetic averages, standard deviations, and the value of "T" for the students' scores in the post application of the cooperation scale.

Through the following table (6), it becomes clear that there are statistically significant differences at the level (0.01) between the mean scores of the students of the control and experimental groups in the post application of the cooperation scale in favor of the students of the experimental group as the value of computerized "t" amounted to (15.29) and from During the calculation of the value of the adjusted gain for Black, it became clear that the degree of effectiveness is (1.55), which is statistically significant because the percentage specified by Black is

greater than (1.2) and less than (2). This indicates that: The use of collaborative electronic learning with the fourth generation technology of the global network (Blackboard) has contributed to the development of some cooperation skills among the students of the experimental group.

Table (6)

Arithmetic means, standard deviations, and "t" values for students' scores in the control and experimental groups in the post application of the visual reasoning scale

Statement	Post application		Value "T"	Statistical significance	The degree of potency
	Average	deviation			
Control group	3.26	3.7	15.29	A function at the 0.01 level	1.55
Experimental group	51.5	3.8			

Interpretation of the results:

The results of the pre and post application of the cognitive achievement test confirmed the superiority of the students of the experimental group in the post application after studying them with electronic cooperative learning as well as the results of the application.

The effectiveness of using the fourth generation technologies of the global information network in light of the cooperative learning strategy and its effects on some learning outcomes of the students of the College of Science and Human Studies.

The researcher attributes this to the following reasons:

- Collaborative e-learning may help in increasing modification and change in some learning outcomes by choosing methods that may suit students during the learning process, some of them suit the visual method, some of them fit the audible or readable method, some of them fit the practical method and others fit the notes during the learning process Electronic cooperative.
- Collaborative electronic learning may help students to review lessons more than once, in different ways and forms, at any time.
- The collaborative e-learning environment provides through the e-learning platform (blackboard) studying the lessons of the Islamic teaching method 2 course throughout the day and the week, and this represents an advantage for female students as some students prefer to learn in the morning and others prefer in the evening according to the time available to them.

Research recommendations:

In light of the search results, the following recommendations can be presented.

- The necessity to expand the use of e-learning programs with various active learning strategies through the e-learning platform (blackboard) in teaching various academic courses and for all scientific and literary departments within universities.

Suggested research:

In light of the research results, the researcher proposes to carry out the following research:

- The competencies program "a proposed program to develop the competencies of faculty members in using e-learning with various active learning strategies through the e-learning platform (blackboard) within universities.

Margins

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