The Effectiveness of Using the Application of Cloud Computing (DROPBOX) In Developing the Directions of Fifth-Grade Students in Physics towards E-Learning

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The aim of the current research is to identify the effectiveness of using the cloud computing application (DropBox) in developing the directions of fifth-grade students in physics towards e-learning, as well as to identify the most important obstacles facing them during the use of this application, as the researcher randomly chose (Al-Yamamah Preparation for Girls) Among the preparatory schools affiliated to the Maysan Governorate Center, the research was applied to a sample of fifth-grade students in the second semester of the academic year (2018-2019) and in the unit (vibratory, wave, and sound) of the scheduled physics book, as it was chosen Division (b) by simple random method, and the number of female students of the sample reached (34) students, where the experimental method was used using the questionnaire as a tool to collect data, and the researcher reached results indicating that female students' attitudes were neutral in the tribal measurement and became positive in post-measurement Also, the use of this application was effective in developing attitudes towards e-learning, and there was a statistically significant difference between the pre and post measurement averages and in favor of the post dimension measurement, and the results also indicated that Female students suffer from an average degree of some obstacles in using this application.

Key words: *Effectiveness of Using the Application, Developing the Directions of Fifth-Grade Students, E-Learning*

Research Methodology

First: The Research Problem

Iraqi educational institutions began to build an infrastructure to keep pace with developments in e-learning and to introduce them in various forms at all educational levels to keep pace with this development and progress, and in light of those endeavors, acceptance and appropriate use of these developments does not lead to positive results without previous studies that determine the extent of acceptance the target group, its directions and capabilities to absorb it and the ability to deal with it with ease and mastery to reach the desired goal in the educational process, and by informing the researcher of previous studies that dealt with cloud computing applications in its various forms did not find a study that dealt with investigating students 'attitudes in educational institutions Iraqi towards the use of cloud computing applications in the educational process, so the current research came to identify the effectiveness of using the cloud computing application (DropBox) in developing the directions of students of the fifth grade in scientific physics towards e-learning, by answering the following questions:

1. What is the effectiveness of using the cloud computing application (DropBox) in developing the directions of fifth-grade students in physics towards e-learning?
2. Is there a statistically significant difference at the significance level (0,05) between the mean trends of the experimental group students in the pre and post measurements attributable to the use of the cloud computing application (DropBox)?
3. What are the obstacles to using the application of cloud computing (DropBox) in e-learning among fifth-grade students in physics?

Second: Research Objectives

The Current Research Aims to Identify

1. The degree of growth of the trends of fifth-grade students in physics towards e-learning as a result of using the application of cloud computing (DropBox).
2. If there is a statistically significant difference between the mean trends of the experimental group students in the pre and post measurements attributed to the use of the cloud computing application (DropBox).
3. The most important obstacles to using the cloud computing application (DropBox) in e-learning for fifth-graders in science in physics.

Third: The Importance of Research

1. Keeping up with recent trends in the educational process and trying to activate and benefit from them.
2. Spreading the culture of using cloud computing applications in teaching to male and female teachers.
3. Highlighting the most important obstacles to using the cloud computing application (DropBox) in middle schools from the students' point of view.
4. It may help in developing the educational process by applying new and innovative teaching methods.

Fourth: Research Hypotheses

1. What is the effectiveness of using the cloud computing application (DropBox) in developing the directions of fifth-grade students in physics towards e-learning?
2. Is there a statistically significant difference at the significance level (0,05) between the mean trends of the experimental group students in the pre and post measurements attributable to the use of the cloud computing application (DropBox)?
3. What are the obstacles to using the application of cloud computing (DropBox) in e-learning among fifth-grade students in physics?

Fifth: Research Limits

1. The spatial boundaries were represented in Al-Yamamah Preparatory School for Girls, which is one of the preparatory schools in the center of Maysan Governorate.
2. The human boundaries were represented by the fifth scientific students.
3. The time limits were represented in the second semester of the academic year (2018-2019).
4. The objective boundaries were represented by the unit of study (vibrational motion, wave and sound) from the textbook of physics for the fifth year of science prescribed by the Iraqi Ministry of Education.

Sixth: Definition of Search Terms

1. Effectiveness
(Shehadeh et al., 2003) defines it as "the ability to achieve goals and inputs to achieve the desired results as possible", and the procedural definition is "the impact of the application of cloud computing (DropBox) on the development of fifth graders' attitudes in physics towards e-learning."

2. Cloud Computing

Get to know it (Wang, 2010, 137) where "the range of services available in the presence of the network can be upgraded with guaranteed quality, and can be adjusted according to everyone who has inexpensive infrastructure available on demand and can be obtained in easy and acceptable ways", while the procedural definition is "technology based on providing servers that can be accessed via the Internet, which allows the user to obtain storage capacity in these servers with different capacities so that the user can access his account from any place where the Internet service is available without the need to download it to his computer, and allows him to store his files And share it with others. "

3. Thor DropB

Get to know it (Lung, 2013, 213) as a 'personal cloud storage service' sometimes referred to as an online backup service usually used for file sharing, help, and collaboration, and this app is available for Windows, Macintosh and Linux desktop operating systems, and there is also hardware compatibility And smartphones, "the procedural definition is" a personal cloud application that enables the student to open a box to store different amounts of files and the ability to share the content of this box in particular with individuals or groups by creating folders. "

4. Direction

(Abu Ward, 26.2006) is defined as "a willingness and inclination towards a specific subject and a response to this subject in relation to an airport that can be accepted or rejected." The definition of procedural guidance is "the position of students from the fifth grade in science in physics towards e-learning and is measured through the responses of female students For this purpose measuring tool before and after using the DropBox cloud computing application.

4. E-learning

(Al-Mousa, 56,2005) defines it as "a method of learning using modern communication mechanisms from computers, networks, and multimedia such as images, sound, graphics, research mechanisms, and electronic libraries, as well as Internet portals, whether it is remotely or within the classroom", as for procedural definition, "It is a method of learning based on the use of an interactive learning environment and modern means of communication, including hardware and software that will provide learning to students everywhere and at all times."

Theoretical Framework and Previous Studies
First: The Theoretical Framework

1. E-learning

The computer has been used in learning and training since the sixties of the last century and its increasing use during the nineties, where huge amounts of money were spent on it to develop computer technologies (Al-Juhani, 32,2013), and there are multiple names for this computer-based learning and its technologies and applications. He highlighted the concept of e-learning, which he mentioned (Salama, 142, 2006) as a way to learn using modern communication technologies from computers, networks, media, and online and interactive research mechanisms between the learner. The teacher communicates information in the shortest time and with the least effort possible with the greatest benefit.

A. E-Learning Features

Among the advantages of e-learning, according to what he mentioned (Salem, 359,2010) are:

- Exceeding the boundaries of time and place in the educational process, and thus easy access to the teacher outside the official working hours.
- Provide an opportunity for learners to interact immediately with each other and to pay attention to teacher feedback.
- Breaking their fear barrier and enabling them to express their thoughts.
- The scientific content in e-learning is more exciting and motivating for the learner, as it is presented in the form of (pictures, stories, drawings).
- This type of learning leads to the activity of the learner and its effectiveness in learning the scientific subject and thus helps to spread the culture of training and self-learning for the learner.

B. E-Learning Recruitment Models in Education

E-learning is used in education according to three models according to the amount of employment in the educational process as I mentioned (Hashem, 34,2002) as follows:

The mixed model is the use of some e-learning tools as part of education inside the classroom, such as cooperative programs and electronic courses based on the speed of the learner and learning management systems.

The pure model here is using e-learning alone to accomplish the education process, where the Internet works as a medium to present the process, which is a form of distance learning and

one of its examples is a unilateral decision through self-study, and this learning is done through software or on the Internet.

- The auxiliary or complementary form, which is an electronic education that complements the traditional education, where the Internet serves this education with what it needs from programs and offers to facilitate education and raise the learner's efficiency, and it has several images including (the teacher assigns students research using the Internet, guides students after The lesson is by logging onto a website and solving questions on the site).

2. Cloud Computing

The cloud symbol was used in network diagrams to indicate the existence of the Internet as it is used to transfer data over the network, and the idea of cloud computing dates back to John Mc Carthy in 1960, who expressed his idea by saying (cloud computing may be organized to become a service In general), then the word cloud began to take a concept related to information technology (IT) in (1970) and it is a concept related to providing storage space on cloud locations in servers on the Internet (Rittinghouse, 2010,54).

A. History of Cloud Computing Development

Cloud computing services are not modern services in the world of the Internet, since the emergence of services (Web 2.0) that support user interaction in receiving and sending, the services of the cloud have been utilized without feeling that of lifting and sending files and referring to them at anytime and anywhere via e-mail without Attention to the mail infrastructure, and interest in cloud computing has also increased as it is presented separately in applications that allow large storage spaces that own many tools, including group or individual sharing services.

Amazon launched its first cloud in 2002 under the name (Amazon Web Services), after that it launched its second commercial cloud in (2006) (Elastic Compute Cloud (EC2)), and then Google went towards launching its cloud services in (2009), and was followed by the spread of many clouds, and at the present time (Buyya) presented a future vision of cloud computing that it will one day be the fifth necessity of life after (water, electricity, gas, and communications), due to its importance in facilitating Life matters It meets the daily needs to store a huge amount of knowledge and the ability to store and retrieve it from anywhere in the world with the presence of the Internet where this technology enabled users to access services without paying attention to the infrastructure of these servers (Buyya, 2009,541), and perhaps libraries and Information centers were among the first to benefit from cloud computing technology, so many institutions went to participate in cloud computing projects that allocate services for libraries such as the (Dura Cloud) project (Khafaga, 67,2010).

B. Advantages of Cloud Computing in Education

Cloud computing was distinguished by other internet services with a set of features, as agreed (Chunwijitra, 2013,95; Ercan, 2010,87; Rittinghouse, 2010,89) which are as follows:

- Supporting learner-centered learning, where he can search for resources and self-learning has been done.
- It provides an expandable storage space that helps you save files without worrying about running out of storage space.
- Access to the cloud anytime, anywhere, provided the internet is available.

Reducing the cost of building the infrastructure, providing devices and applications, not caring about their maintenance, how they work, and the ease of managing cloud content, so that we do not need programs and systems to manage them.

Back up all data stored in the cloud, unlike any bugs or viruses that harm your computer.

- Overcoming the problem of differences in software, smart phone devices and mobile devices.
- The ability to participate and collaborate between individuals and groups, because the use of cloud computing in education provides an opportunity for cooperative learning between learners and teachers through the services provided by some programs designed to open cloud accounts such as creating a separate folder for each learner and using shared folders between an educated group.

C. Cloud Computing Components

Cloud computing components are divided into three sections (layers) stacked on top of each other, as follows, according to what he said (Shaltout, 88,2015):

The infrastructure as a service in this layer provides the company's devices as a service to the user so that the company's resources can be rented from storage devices remotely without the need for purchase, maintenance, and management, which is often very expensive, meaning that it deals with these things without the need for customer intervention.

Work platform as a service This layer provides a business platform for user applications including hardware required in the development of programs in addition to basic applications such as virtual servers and operating systems, and this layer provides the user with the cost of creation and purchase, for example (Google App), and can be worked on all of them, In addition to a full operating system.

Application as a service: This layer uses an application as a store on the cloud and device only as a communication tool and the user cannot control the operating system in the cloud or with the device or network connection.

Dr. Types of Cloud Computing

(Shetty, 28,2013) Types of cloud computing are defined as follows:

- Cloud computing and private cloud in terms of technical concept, but it is not open to the public but closed, and a specified number of clients such as the cloud computing bank, university, or government institution.
- Public cloud computing, a cloud available to everyone and anyone who wants to serve.

Shared cloud computing is a limited cloud for companies or organizations that have the same goal of service and sharing of expenses and expenses in exchange for great cloud security.

Hybrid Cloud Computing is a cloud of its services from service providers that combine the characteristics of the public and private cloud so that the customer benefits from the private cloud services inside the public cloud such as huge electronic shopping sites.

Second: Previous Studies

1. Study (Sanda, 2011)
This study aimed to determine the requirements of integrating cloud computing applications in engineering education, and the researcher followed the descriptive approach, where the study sample consisted of students of the engineering department with different specializations, and the study reached to determine the requirements that must be taken into account the integration of cloud computing applications in engineering educational courses, And the researcher divided it into requirements related to basic infrastructure and requirements for accessing the laboratory using e-learning technology remotely and employing cloud computing applications in that and how it is applied in dealing with individual research and joint research.

2. Study (Lou, 2013)
This study aimed to examine the impact of the use of resources based on cloud computing applications as a model for online learning on academic achievement. In this study, the experimental approach was used. The study sample consisted of (132) from the National Taiwan University and they were randomly divided into two experimental groups. As for the second control, the results showed that there were statistically significant differences between the two groups in the post-achievement test and in favor of the experimental group.

3. Study (Al-Dayel, 2015)

This study aimed to verify the effectiveness of using cloud computing technology through the website (Google Sites) in developing academic achievement among students of the learning skills course at Imam Muhammad bin Saud Islamic University, the semi-experimental approach was used in this study, and the study sample consisted of (63) As a student, the results showed that there was a statistically significant difference between the experimental and control groups in the post-achievement test and in favor of the experimental group at the levels (analysis, composition, evaluation).

4. Study (Al-Mutawa, 2016)

The study aimed to identify the attitudes of computer teachers towards cloud computing applications, and the researcher used the descriptive survey method. The study sample included (77) teachers in Al-Quway'iyah governorate, and the results showed that the computer trends. The teachers showed positive results toward cloud computing applications, where the results showed that there were statistically significant differences in the attitudes of computer teachers towards cloud computing applications according to the variable (academic qualification) and in favor of (undergraduate), the results also showed that there were no statistically significant differences in the attitudes of teachers Computer towards cloud computing applications and their training needs to use them according to variables (number of years of experience and number of training courses).

Search Procedures
First: Research Methodology

The researcher followed the experimental approach with its semi-experimental design to suit this type of research, where the experimental approach is known as (the way in which all variables affecting a particular phenomenon are controlled except for one variable, where the researcher adapts or changes with the aim of identifying and measuring its impact on the phenomenon that is Search for It (Atefa, 2012, 43).

Second: The Research Community and Specific

The research community was represented by fifth-grade students in the middle schools in the Maysan Governorate center, while the sample was randomly chosen and consisted of (34) students, the (B) group represents (Al-Yamamah Preparatory School for Girls).), Where physics was taught using the cloud computing application (DropBox), to learn about the effectiveness of this application in developing the attitudes of fifth graders in physics towards e-learning, where the experiment was applied in the second semester of the General Academy (2018-2019) in the study unit (Vibration and wave and acoustic motion) for the book of physics for the fifth grade scheduled by the Iraqi Ministry of Education.

Third: The Research Tool

The researcher used the questionnaire to collect data as the most appropriate tool in this field, as it was designed after reviewing the literature and previous studies, where the questionnaire consists of two parts, the first part of (40) paragraphs distributed between positive paragraphs and negative paragraphs to measure student attitudes towards e-mail learning before and after The application (DropBox), and the second part consists of (10) paragraphs to identify the most important obstacles in measuring the dimensions of the tool, and it was confirmed by presenting it to a group of arbitrators in the field of psychology, curricula and methods of teaching physics, and based on the observations of the arbitrators some of the paragraphs were modified The questionnaire, to confirm the consistency of the questionnaire, was the alpha Kronbach equation used, and the stability ratio was (0.93), where it was considered a good percentage, which confirms the appropriateness of the tool and its suitability for application in its final form.

Fourth: Procedures for Applying the Experiment

After selecting the school (Al-Yamamah Preparatory School for Girls) and Section B randomly to conduct the experiment and implement it, it was agreed with all students of Section B to download the fifth grade scientific cloud computing application (DropBox (On) their mobile devices, and the researcher trained them on how to use this application in physics in Education, which will be studied through the application of cloud computing (DropBox), as well as communication and interaction with students of Section B and in solving electronic assignments.

P View the Results of Research and Discussion
First: Presenting and Discussing the Research Results

1. To answer the first question (What is the effectiveness of using the cloud computing application)? DropBox(In developing the attitudes of fifth-grade female students in physics towards e-learning?) , Mathematical averages and standard deviations for each paragraph were calculated before and after the application of cloud computing (DropBox), Where the arithmetic mean of female students' trends before application was (1.55) with a standard deviation (0.69), and after application, the mean (2, 67) became with a standard deviation (0.51), and based on the hypothetical mean (2) (Considering the scale is triple, it is clear that female students' attitudes toward e-learning before using the cloud computing application)DropBox(It was neutral, and it became positive and high in dimensional application by noting the increase in the value of the dimensional arithmetic mean and the increase was by (1,12), which indicates that the use of the cloud computing application)DropBoxHelp increase the desire and motivation of female students towards e-

learning, and thus contributed to developing the positive attitudes of female students towards e-learning.

2. To answer the second question (is there a statistically significant difference at the level of significance (0.05) between the mean trends of the experimental group students in the pre and post measurements attributable to the use of cloud computing application (DropBox ?), A test was used (t-test to find out if there is a statistically significant difference or not, as shown in Table (1):

Table 1: Arithmetic averages, standard deviations, and (T) value for pre and post-measurement

Significance level	Table (T)value	The value of (t) calculated	standard deviation	SMA	the number	Analogy
Statistically significant at 0.05	2,00	4,49	0.69	1,55	34	Tribal
			0.51	2,67	34	Posti

It is clear from Table (1) that the calculated value of (T) was (4,49) under the degree of freedom (33) and the level of significance (0,05), which indicates the presence of a statistically significant difference in favor of post-measurement, and this indicates That the use of the cloud computing application) DropBox (It has an effective effect in developing female students 'attitudes towards e-learning, and that there has been a noticeable change in female attitudes towards the use of this application from neutral trends in pre-measurement to high positive trends in telemetry, which indicates the ease of downloading and using this application and Not to adhere to a specific place and time, speed of response, answering questions, inquiries, communication, and rapid interaction with other students and the physics school simultaneously and asynchronously, with regular and immediate feedback.

To answer the third question) **What are the limitations of using the cloud computing application?(DropBox)In e-learning for fifth-grade students in physics** , (?The standard mean and standard deviations for each of the paragraphs of the obstacles were calculated, and they were compared with the estimates of the values of the arithmetic mean as in Table:(2)

Table 2: Estimates of the mathematical mean values for the obstacles clause

High	Average	Low
3 - 5 2.3	2,34 - 1,68	1,67 - 1

As the overall mean for the obstacles reached (2.29) with a standard deviation (0.66), and when comparing with the values of the estimates mentioned in Table (2), it was found that the degree of obstacles is average, and the most prominent obstacles were (difficulty in

connecting to the network and poor internet, The difficulty of transferring and downloading large files, and this result confirm that the obstacles did not have a significant impact on the students 'attitudes towards e-learning using the cloud computing application (DropBox).

Second: Recommendations

1. Focus on investing cloud computing services and applications in the educational process in its various stages.
2. Paying attention to the e-learning infrastructure by providing computers and internet connection.
3. Urging teachers to take advantage of cloud computing services and applications and use them in the educational process in all subjects.
4. Holding awareness-raising workshops for students on e-learning in order to accept this type of learning.
5. Holding training courses to train teachers to use cloud computing applications in preparation for use with students.

Third: The Proposals

1. Conducting more studies on the effectiveness of using cloud computing applications in developing various variables such as trends, tendencies, motivation, achievement, and other variables, and in various subjects and educational stages.
2. Focus and attention on conducting technology studies in order to keep pace with development and progress, and because of its impact and effectiveness in understanding and assimilating study materials.

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