The Reality of Using Cloud Computing in University Education from the Point of View of Faculty Members in Kuwait

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Abstract

The study aimed to reveal the reality of the use of cloud computing in university education from the point of view of faculty members in Kuwait. Using the survey descriptive method and preparing the study tool of questionnaire to measure the reality of the use of cloud computing in university education, the researcher divided the tool into four areas: information management, second: digital cloud libraries, third: electronic archiving, fourth, digital repositories and scientific research. The tool was applied to the study sample of 258 members and faculty members of the College of Basic Education. The results showed that the computational averages ranged between(2.51-2.96),where digital cloud libraries came in first place with the highest computational average of (2.96),and by importance 49%, electronic archiving came in second with a mathematical average of (2.30), and by importance 46%, digital repositories and scientific research came in third place with a mathematical average of(2.28) By importance, 45.6%, while information management came in last place with a mathematical average of 2.21, and by importance 44.2%, and the average arithmetic of the instrument as a whole (2.31%)and the ratio (46.2%), the result was low. The results showed no statistically significant differences due to the effect of Gender and scientific rank, while statistically significant differences between less than five years and5-10 years were in favor of 5-10 years.

Keywords: Cloud computing, real-time use, university education, faculty, Kuwait.

Introduction

Scientific and technological progress has added many modern educational methods and methods that can be used to create areas of expertise for learners, and most of these new methods have been characterized by their reliance on the use of technological innovations in order to achieve better effectiveness and efficiency of education, including Electronic presentation, satellite channels, satellites, the Internet, educational bag, electronic screen and electronic libraries, through various methods and methods, to provide educational content with fixed and moving visual elements and audio-visual effects, this contributed to make education more efficient, more interesting and fun.

One of the most important technological innovations that has emerged in recent times is e-learning and distance learning, which aimed to make the learner the focus of the educational process rather than the teacher, and the web or web-based learning environment with its services and capabilities has been a source of information related to the development of educational technology, as well as the diversity of forms and sources of this information from specialized educational sites, renewed databases, books and various online journals. There is no doubt that e-learning and distance learning will change the current view of traditional teaching and training methods, and that this will have implications for educational institutions and the subsequent production of course software, which has already emerged in recent years over the Internet, with most of them providing lectures in the form of a textbook (Alfailakawi and Anzi, 2016).

Thus, the process of developing education is an ongoing process, starting with the traditional pattern of learning through distance learning to e-learning using the Internet, multimedia, e-book and more.

The appropriate use of technological innovations in the educational process will undoubtedly lead to the discovery of innovative solutions to the problems of education, help make education systems respond flexibly to the aspirations and hopes of learners in continuing the process of learning and acquiring the necessary skills, and education is linked to E-education, telecommunications and communication media as an integrated system of education technology innovations with a range of models of those innovations, both in the field of technological hardware and in the field of scientific materials and software, such as cloud computing.

Many governments, companies, educational institutions and others use computer resources to store their data, to run their applications or to develop their software. These devices need maintenance, management and a place to provide and ensure that they operate efficiently, and the need for these devices varies from time to time, at some point they are most needed, their availability and efficient operation are critical, while at other times the exact opposite. So,

these governments, institutions and companies have begun to look for other solutions that guarantee the two most important factors: saving resources, working efficiently (Al-Khalaf, 2014).

The best solution was to use cloud computing, where cloud computing reflects both computing, drivers and applications, data access, as well as storage services that do not require the last user's knowledge of the service's geographical location and the configuration of the system that connects Those services. Cloud storage is therefore a basic and use of cloud computing that saves faculty, students and university administrations a lot of time and effort, and can work it anytime and anywhere.

For the importance of cloud computing and the need to highlight the reality of its use in university education, the meaning of cloud computing will be recognized and its benefits and advantages in education, some of its criticisms, recognition of cloud storage and its uses in higher education, and identification of the reality of Use in education.

Theoretical framework

Cloud computing was not born in the 21st century, as an idea from the 1960s, when Stanford University professor John McCarthy expressed the idea: "Computing may one day be regulated to become a public service," but this idea has not gone from a theoretical concept to a tangible application we see only in the beginning of 2000, when Microsoft expanded the concept of using software through the web, to be followed by many companies, and Google came to the top of the list of the most important companies that played an important role in the field of cloud computing, where it launched many Services that rely on this technology with its technology, but not only launched services to take advantage of this technology, but also launched in 2009 an integrated operating system for computers operating through the concept of cloud computing (Khafaja, 2010).

The work of cloud computing depends heavily on the user who may only need the operating system and internet browser to see what is happening operations, as he does not need any programs that are diverse or complex, nor does he need to store his data on his personal device, all he has to do is provide the data that needs to Processing and then storage and keeping this information suspended in the cloud until it is modified again or deleted altogether.

What is cloud computing?

The word "cloud" is used figuratively to refer to the Internet, based on the cloud graphic used in the past to represent the telephone network, and more recently to describe and represent the Internet in computer network schemes, as an abstract image of the infrastructure it represents (Alfailakawi and Al-Anzi, 2016).

Cloud computing is defined as a technology based on the transfer of processing and computer storage space to the so-called cloud, a server accessed via the Internet, so IT software travels from products to services (Hayek, 2015).

It is also defined as "a range of services provided by the service provider to a customer or multiple customers or to an online customer audience with the aim of exploiting the capabilities and capabilities of the superior service provider without having to purchase expensive devices in the company to perform the same tasks" (Tarala and Tarala, 2014:1).

Wang & Lszewski, 2009, points out that cloud computing isa network service that offers cheap, secure on-demand platforms that can be accessed and used in easy ways.

A definition that seems to have combined all these elements is that of the American National Institute of Standards and Technology, which is a model for enabling permanent and appropriate access to the network on demand, participation and cloud computing as a collection of computing resources. (Networks, servers, volumes, applications and services (which can be deployed and provided quickly with the least effort by management or interaction with the service provider (Mell&Grance,2011).

The study finds that cloud computing is a powerful technology used by increasing public and private institutions, universities and individuals, and is called cloud computing in general because it means using a service provider to store and manage private data on the Internet, and it is easy to synchronize data with a lot of Devices anywhere in the world, but private information can also be shared with anyone.

The advantages and benefits of using cloud computing in education

Cloud computing as a means of communication and education has many advantages, the most important of which is (Shaltot, 6,201; Tarala and Tarala, 2014):

1- Provide students and teachers with tools of creativity, innovation and participation by providing simulations, interaction and flexibility in dealing with the sources of information provided through withdrawal.

2- Help the student get all the different programs and information sources he needs for his courses at any time, from anywhere.
3- It opens up a wide horizon for students to access many programs that they could not reach in the past either because of the cost or the lack of possibilities for school computers.
4- Through the cloud computing system, students can store and sync files, create documents, and collaborate with others in search or write.

The **benefits of using cloud computing in education** are shown by the following (Tennant, 2010):

1. Cloud computing saves a lot of money for its users as a result of not having to buy hardware and software as well as their regular maintenance costs.
2. Cloud computing allows the user to secure access to their files and applications stored on them, provided there is evidence that the user has the right to view and use these files.
3. Cloud computing is a safe way to keep data and information from being damaged and lost.
4. The ability to use high-level and efficient applications and software regardless of the efficiency of the devices used in it, because it depends on the power of network servers and not on the personal resources of the device used, no matter how efficient the device used it can take advantage of large servers like Google Docs, editing different files and data without problem.
5. Cloud computing allows students to access and navigate, expand or reduce use with simple touches as needed and without problems.
6. The cloud computing system can be seen as a permanently available means of education, and here comes the role of service providers who pledge to provide a safe, well-quality and uninterrupted service.
7. Cloud computing helps teach students in new ways and helps them manage their projects and duties.

Cloud computing can help universities (Hayek, 2013):

1- Absorbing the dependencies of the rapid increase in mobile device use.
2- Store extensive amounts of sensitive data and easily accessible information.
3- Stay with updates, for example: (providing a digital repository for students within the university to store class notes, memos, and projects).
4- Get the latest software and app updates.
5- Simplify university enrollment and admission processes which are costly and time-consuming.
6- The tendency to subscribe with scalability and availability of options.

Cloud computing can therefore be seen as a method of computing, in which computing resources are provided as services, and users have access to them over the Internet (cloud), without the need to possess the knowledge, experience, or even control of the infrastructure that supports these services.

Despite the benefits of cloud computing and its advantages in education and in all areas, there are challenges for cloud users: access to information and personal data; These users are accustomed to cloud applications (Obeid, 2014; Wang& Lszewski, 2009).

Cloud computing models

Among the models and features that must be provided in the following cloud computing (Ahmadi, 2012):

1- **Service** software: Since the user hires software and hardware for a small cost and achieves investment through these devices wherever they exist in which case the user can develop his software at the lowest cost.
2- **Platforms as a** service: it is a software for designers, developers and programmers through which you can build databases for the work of the organization, design private sites for the organization, and through the cloud it is possible to create professional businesses or databases such as database design and database systems.
3- **Infrastructure: It is often a** virtual structure, so instead of purchasing connections, servers, servers, software and network equipment, these organizations use virtual devices on the cloud, so that companies and organizations purchase these resources as a service from companies that provide this service such as hp-Verizon-Amazon-OP source.

Cloud storage and its use in education

Cloud computing and cloud storage have become a preferred way to provide information and functionality over the Internet, cloud storage is a model for web storage where data is stored on multiple virtualservers, rather than hosted on a specific server, usually provided by a third party, where major hosting companies rent cloud storage spaces to their customers to suit their needs.

Storage is one of the foundations of cloud computing, and the idea that cloud computing offers services that can be used directly over the Internet without basically the need for local applications, devices or systems for the user, these services, whatever the type of data that results in data and is stored on the cloud. Storage is therefore one of the foundations of cloud computing. In the end, we can't use computers without a hard drive (Al-Hamid, 2014).

There are two types of cloud storage services: one free and one that can be used for a one-time, monthly or annual payment.Uses of cloud storage in education (Talwani, 2014; Bandar, 2013):

1- Give lectures or classes remotely, so that they are uploaded to the virtual cloud (which may be in the form of a website or application on smart devices) and available and stored for viewing and browsing away from time or place barriers.
2- Share the curriculum or partially through the sharing tools provided by cloud computing services.
3- Creating bridges of communication between teacher and student, in school or at the higher education level.
4- Delivering the required duties and costs and following them up with the teacher.
5- Reduce the burden of paper printing, hand over duties and return them.
6- Study inmass online.
7- Reducing software costs, hardware maintenance and reducing energy consumption.
8- Provide collective access to learning resources and resources through online education.
9- Enhance efficiency in computer management in schools and monitor the quality of content.
10- Also useful for teachers by sharing educational files between them and their students so that they receive research and duties with the possibility of editing and commenting on files.
11- Store documents and special papers that can be used even while traveling.

As for the uses of cloud storage through cloud computing applications and utilizing it in higher education is through: ***Digital cloud libraries** where e-book can be read in so-called green information technology, thus achieving economic benefits for cloud digital libraries in universities, schools and research centers. *Electronic**archiving** can be used to shift from traditional paper archiving to electronic archiving using scanner or e-board camera and then converted to Pdf,the possibility of filling electronic forms with organizations with electronic signature. *Information**management,** where in any classroom each of the teachers can need a joint location or storage place between them, the possibility of sharing and making courses available electronically, in addition to sharing files on the Internet and being appropriate for most applications and devices. *Digital**repositories;**students and universities can participate in enriching digital content with research and projects, and there is no need to make backups of information Stored on personal computers. ***Production of desktop applications** usingMicrosoft applications such as: Word, Excel, PowerPointand other applications. *Scientific**research;**Lercher, 2008;

There are some cloud computing applications that can be useful for higher education institutions including (Wang & Lszewski, 2009):

1- Dropbox Cloud enables you to create your own online space to store your files, which enable you to store and access files from anywhere.
2- Mailchimp is a free email marketing service that enables you to design, send and track email campaigns.
3- Webmerge.me takes your raw data online and integrates it into pdf and word docs documents.
4- Shoe boxed organizing receipts, business cards, and online invoices.
5- Basecamp is an online database of collaborative project management.
6- Google Docs create documents, spreadsheets, presentations, and other shareable files online.
7- Catch the Best to collect and track resumes received for the mailbox and ensure they are not scattered.

School experience in the clouds and other experiences

The idea of applying cloud school is due to one of the pioneers of the educational process in India, Sugata Mitra, who sought to realize his vision of building the school in The Cloud, by testing his theory that education has no limits, meaning that students can at anytime and anywhere explore and learn from each other using educational resources and cloud guidance (computer and internet), perhaps this inspiring vision of Metro is a self-regulating learning environment (SOLE).

To conduct his experiment, Sugata Mitra chose a number of remote villages in several countries and different continents, and provided the selected children with a computer with the Internet, and the results of the experiment exceeded all expectations, showing that children from India to Cambodia and South Africa had all taught themselves a great deal of information, concepts and various subjects, often beyond the possibilities of what was considered

appropriate for their age level. "Groups of children can learn to use computers and the Internet regardless of circumstances or where they are," Mitra said.

The use of cloud computing, applications and cloud storage in education is working to raise the education and learning system, and helps to accelerate the pace of technology and its accelerated innovations, and has confirmed(Polydoratou, 2007)that there is a tendency of faculty members to publish their research within digital repositories, to support the scientific activity of the university, and the desire of Researcher to include digital repositories on links to the publishers of scientific journals.

Mcknight, 2007noted that students can rely on students' work to support digital repositories that are cloud computing applications, and that university messages are the most likely sources to be used for use in research and university education, and a study (Mittal & Mahesh, 2008) has shown the huge content of libraries and e-repositories in India, reaching thousands.

The use of cloud computing provides university students and faculty with a wide range of access to the computerized cloud horizon on the Internet, providing cloud storage that allows the preservation and retrieval of sources and information in its various forms, free access to the full text of sources, databases, and continuous updating of information and sources (Sfelfel, 2009).

Thomas(2011)stressed that cloud computing is anunions tool and a powerful platform that enables the practice of teaching and learning ideas, in addition to having significant implications as a virtual communication medium and as a participatory medium, traditional methods cannot brilliantly support all the needs of higher education.(Holmquist, 2010)added that cloud computing enabled teachers to successfully organize curricula and courses, and teachers felt greater ownership of these courses and curricula.

Criticism of the term "cloud computing"

Despite its benefits, characteristics and advantages in education, the term "cloud computing" has sparked a wide debate among a number of Researcher and specialists, some have tried to criticize the term used as either misleading or unspecified; for example, Oracle Executive DirectorLarrystressed that cloud computing is "all we do already do," pointing out that the company simply cannot "change the words used on any of its ads" in order to publish its existing services. Using the Cloud (Farber, 2008; Ellison, 2008.

The deputy director of Forrester Research, Frant Gillette, questioned the secret of the driving force behind cloud computing, describing it as "cloud washing" in the industry, in which companies rebrand their products as cloud computing, putting many marketing innovations at the top of real innovation (Gillett, 2008).

Geno founderRichard Stolman, in turn, insisted thatcloud computing is an industry that uses only the model to deliver services at increasing rates across other people's systems, and in other ways has likened it to a "hybrid marketing campaign" (2008manStall).

On the other hand, despite the presence of critics of cloud computing, there is considerable support in its introduction of the educational system, especially higher education, because it is of great benefit in its use in university education for students, faculty members and departments.According to cisco® Global Cloud Index (2011-2016), Cisco expects global data traffic through data centers to quadruple to 6.6 zettabytes per year by 2016.The company also expects the Middle East and Africa region to experience the highest growth rates of cloud computing with a compound annual growth rate of 79 percent, followed by Latin America at 66percent and Central and Eastern Europe at 55percent.Cisco expects global data traffic through cloud computing (the fastest growing component of data center usage) to grow sixfold from the annual average of data traffic in 2011to4.3zettabytesby 2016– representing a compound annual growth rate of 44 percent (Tomorrow' Newspaper, 2012).

Accordingly, cloud computing has proven itself as technological trends that exist to survive.Higher education institutions have realized that adopting the latest technologies and solutions is essential to increasing competitiveness and retention of students, and cloud computing helps reduce the cost of purchasing hardware, software or maintenance. Cloud computing also provides universities with virtual data centers accessible to all faculty, staff and students, anytime or wherever they are.

Study problem

The problem of the study is that despite the importance of cloud computing in university education and being a necessity of educational institutions, but according to the researcher's knowledge of the reality, universities of different disciplines have not yet been interested in the actual use of cloud computing; The use of faculty members at the

university (The Public authority for applied education and training in Kuwait) for cloud computing, and their use of it is almost weak, the researcher noted the scarcity of studies and research in cloud computing at the Arab level, and this prompted the researcher to initiate the study Current and highlight the reality of the use of cloud computing faculty members in university education in Kuwait, by answering the following questions:

1. What is the reality of using cloud computing in university education from the point of view of faculty members in Kuwait?
2. Are there statistically significant differences at the level of significanceα ($\leq$0.05)between the mathematical averages in the reality of the use of cloud computing in university education from the point of view of the faculty members of the State of Kuwait due to a variable (gender, scientific rank, experience)?

Study objectives

1- Learn about the reality of using cloud computing in university education from the point of view of faculty members in Kuwait.
2- Measuring statistical differences between computational averages in the use of cloud computing in university education from the point of view of faculty members in Kuwait is attributable to a variable (gender, scientific rank, experience).

The importance of study

The importance of theoretical and practical study lies in the following:

1- To highlight the reality of the use of cloud computing by faculty members in university education in Kuwait.
2- The importance of cloud computing, which has proven itself as technological trends, higher education institutions have realized that adopting the latest technologies and solutions is essential to increase competitiveness and retention of students, help cloud computing to secure storage, and reduce the expenses that go to purchase hardware, software or maintenance.In addition, computing and cloud storage provide universities with virtual data centers accessible to all faculty, staff and students, anywhere and at any time.
3- The current study and its results may motivate Researcher and scholars to conduct studies in light of different variables of cloud computing and the importance of its use in university and general education, where within the researcher's knowledge, there is a scarcity of subject at the Arab level, and the current study is almost the first of its kind in The State of Kuwait.
4- The current study may benefit universities and their departments in Kuwait and faculty to recognize the importance of cloud computing and its appropriate and effective application on the ground because it has characteristics and features that impose itself in the technological race arena.
5- The current study may serve to enrich libraries with the scarcity of studies in the subject matter of the study.

Study terms

- **Cloud** Computing: Using Internet services to meet computing needs which may include the use of software applications, data storage, access to the power of advertising computing or the use of the application platform (Kroski, 2009).

The researcher defines cloud computing procedurally as "a server that consists of connecting many computers and servers to each other to the internet in universities for flexible, easy and less time use."

- **Faculty members:** A person who works in teaching at the university level and serves as a professor, associate professor or assistant professor and holds a Doctorate in a scientific or humanitarian discipline" (Hamdi, 2001: 510).

The researcher is known by the faculty procedurally as "a university teacher with a PhD in a humanitarian or scientific discipline, and holds a position of scientific rank".

Study limits

Objectivity: The study was limited to highlighting the reality of the use of cloud computing in university education from the point of view of faculty members.

1- **Location:** College of Basic Education Department, Education Technology Department, The Public authority for applied Education and Training, Kuwait.
2- **Time:** Second semester 2020/2021.
3- The study is defined by its tools used and the sincerity and consistency of these tools.

Previous studies

The researcher will present some of the previous Arab and foreign studies and research related to the current study, arranged in sequence from the oldest to the latest, as follows:

(Maguire study, 2005)The purpose of the study participating and benefiting from experience in the application of the electronic document management system, the study has led to the follow-up of the application of the electronic document management system from the beginning of preparation to the training phase; The study came to important conclusions despite intensive training, most staff members complained about the new system (electronic document management system) and this was for three reasons: they found the system difficult to use, and found difficult to download The system, they found, they would have to use complex rules to guide them if the system was unable to guide them, and the study found that the system does not reduce routine work but leads to automation.

The study was based on an electronic questionnaire, distributed to 755 faculty members at British universities, focused on surveying past, present and future warehouse usage rates and managing copyright for warehouse-listed materials, and also based on interviews with faculty members in the fields of engineering, science, humanities and social sciences. To determine the type of materials and resources produced by faculty members, the technical means used to exchange such materials with students, and the extent to which faculty members participate in the digital repositories of their universities. The results showed that 38.8% of respondents had already participated in digital repositories, and 80.7% believed they were likely to support and participate in digital repositories in the future.

The study (Bhat, 2009)aimed to evaluate nine repositories for free access in the field of computer science and information technology, and the warehouses were selected through the guide free access warehouses DOAR, which included seventy-eight repositories specialized in computer science in 2008, and the researcher excluded the settlements established in non-English and warehouses with fewer than 100 documents, and adopted a questionnaire addressed to those responsible for the management of warehouses and included seven elements: public information, information sources, content management policies, and the researcher adopted a questionnaire addressed to those responsible for managing warehouses and included seven elements: public information, information sources, content management, content management policies, and the researcher's questionnaire. Conservation policies, rights management policies, services and feedback. The study showed that most of the warehouses were created by 1-2 faculty members, Eprints was the most used software in the creation of digital repositories, and most repositories had document selection policies and policies defining how to keep backups of documents.

Al-Amoudi (2010) the study aimed to uncover the reality of technical use in the psychology laboratories, the stages of work in the technical application project, and to identify the results of the transition to electronic archiving. The study used a case study method, multiple databases were designed and the psychology department laboratories were inventoried for electronic archival, software was designed for automated indexing for automated browsing of documents and then borrowed and automated evaluation of the teacher's performance, and adopted tools for observational study, and corresponding, formed Sample study contents and documents related to the Department of Psychology. The results showed that the technical organization of information operations were employed in accordance with the needs of psychological tests in an automated program that facilitates the processes of input, addition and retrieval of tests, saving a lot of time and effort and raising the efficiency of the work, and browsing it by more than one student, and the possibility of adorning them on Various storage media, the electronic system provided multiple search capabilities, and the results showed that automated interfaces do not have an auxiliary icon explaining how to use, and the rule does not allow you to browse the full text of the tests.

Faraj's study (2012) aimed to identify the reality of Arab digital institutional repositories, and the role of libraries in the development of digital warehouses and highlight the shortcomings and weaknesses in Arab institutional warehouses. Using the survey method, the researcher relied on some global databases, some evidence of global repositories, and an inventory of Arab warehouses on the Internet until 2011, and examined each of the Arab sites, and the study relied on fourteen Arab warehouses as a sample. The results showed that King Fahd University's warehouse is the best Arab warehouse by the world rankings, and that the percentage of Arab institutional warehouses affiliated with universities is 78.6%, and 21.4% is affiliated with research institutions and centers. And that Egypt is the largest Arab countries owning warehouses, while the most Arab warehouses acquired for the number of sources is the warehouse of King Fahd University of Petroleum followed by the warehouse of King Saud University, the least of which is the Association of Sudanese Libraries, and the results showed that 50% of the warehouses do not allow the full text of all sources, There is a weak presence of policies described for the filing process, and that the current search engines do not meet the demands of the Arab user, warehouses need a system to automatically classify documents to facilitate the work of search engines, and there are other factors hindering the search process: weak factor of incentive to use, and

weakness of politics Institutional, weak internal links to link warehouses to the internal system of the organization, and not to connect local warehouses to each other.

Al-Dhafiri and Al-Suweit Study (2013) aimed to identify the extent to which Kuwait university faculty members used digital information sources. The descriptive curriculum was used to achieve the study, the sample of the study consisted of (180) faculty members of the University (scientific and literary faculties). A standard was adopted to determine the extent to which Kuwait university faculty members used digital information sources. The results showed that the majority of faculty members at scientific and literary faculties agreed that their use of digital information sources was a necessity and felt the importance of their existence. The study also showed that there are special skills to use digital information sources that are difficult for faculty members to acquire.

Study (Musungwini, Mugoniwa, Furusa & The study aimed to identify the benefits of using Google docs by Researcher and academics and to analyze factors affecting the adoption and use of technology by lecturers at a university in Zimbabwe. The results of the study on the existence of a knowledge gap and there is a need to hold workshops in order to introduce lecturers to the value of this technology.

The study (Klug, 2014) aimed to identify the factors that determine the adoption of cloud computing by some colleges and universities and not by other colleges and universities. This non-experimental quantitative study was conducted on a sample of 119 principals at universities and colleges in the United States and Canada that apply or consider cloud computing. For data collection, the questionnaire was used through the Internet, which focused on testing the relationship between cloud computing adoption and predictive variables (benefits, difficulties, compatibility, institute size, technological readiness, regulatory policies, and service provider.

A study (Akin, Matthew & Comfort, 2014) aimed at uncovering the impacts and challenges of adopting cloud computing at public universities in southwestern Nigeria. The study sample consisted of (100) teachers, (50) assistants and (50) students selected from each university in the cluster method. They answered the questionnaire prepared by the researcher on the field of study.

The study revealed that the adoption of cloud computing has a significant impact on costs, increased availability, little environmental impact, few information complexities, mobility, scalability and reduced investment in physical assets. The biggest challenges facing cloud computing are the insecurity of information, regulations and privacy.

The Omari and Al-Rahi Study (2014) aimed to reveal the effectiveness of a proposed training program based on participatory cloud computing in enhancing the technical performance of the faculty members of Thebes University. The study sample was used in (33faculty members at Thebes University in Medina). Tools have been developed and used (the proposed cloud computing training program, collection testing and self-assessment tool). The study found that there are statistically significant differences between the grades of the tribal and dimension applications of the cognitive aspect of the cognitive aspect of the quality of the technical performance of the faculty members at Thebes University in favor of dimensional measurement, and the existence of significant differences between the average grades of the tribal and dimensional applications of the tool of self-assessment of the skilled aspect of the quality of the technical performance of the faculty members of the University of Tiba in favor of dimensional measurement .

A study (Adrees, Omer & Sheta,2016) aimed to conduct a quadruple analysis in order to determine the impact of cloud computing application in terms of strengths, weaknesses, opportunities and threats in the Republic of Sudan as a model from the point of view of managers, teachers and students. The study was conducted in an inference and data collection was conducted. The study also showed drawbacks due to the application of cloud computing such as: privacy and security issues.

Commentary on studies

The current study of previous studies was characterized by being, according to the researcher's knowledge, the first of its kind in Kuwait with regard to the subject, and the researcher noted the lack of relevant studies and the relationship at the Arab level, where the current study in revealing the reality of the use of cloud computing in education From the point of view of faculty members, previous studies obtained in terms of sample, methodology and statistical methods have been utilized, in addition to the preparation of the current study tool.

- Method and procedures

Curriculum

The research adopted the descriptive survey method, which is concerned with presenting the measured phenomenon as it is, as this method is suitable for the objectives and purposes of the current research and its variables.

Study Community

The study community is made up of all the faculty members of the College of Basic Education in the Public authority for applied Education and Training of higher education in Kuwait for the academic year 2020/2021, and their number (680) members and faculty members.

Study sample

The research sample consisted of (258) members and faculty members in the College of Basic Education, and the sample included (154) males and (104) females, randomly selected for the second academic year 2020/2021.

Table (1)

Iterations and percentages by **study variables**

	Categories	**Iteration**	**Percentage**
Gender	male	154	59.7
	Female	104	40.3
Scientific rank	Professor	13	5.0
	Associate Professor	29	11.2
	Assistant Professor	216	83.7
Experience	Less than five years	143	55.4
	5-10 years	74	28.7
	10-15 years	41	15.9
	Total	**258**	**100.0**

Study tool

The researcher prepared a questionnaire to reveal the reality of the use of cloud computing in university education from the point of view of the members of the College of Basic Education in the Public authority for applied education and training in Kuwait , and after reviewing previous research seethes (Al-Dhafiri and Al-Suweit, 2013; Al-Omari and Al-Rahi, 2014; Melanie King, 2008; Musungwini, Mugoniwa, Furusa & Rebanowako, 2016; Klug, 2014),the scale is two parts, the first: the inclusion of general and basic information on the sample including: Gender , scientific rank, years of university experience; and part **2:**cloud storage areas consisting of: **first domain:** digital cloud libraries, **second domain:** electronic archiving, **third domain:** information management, **fourth domain:** digital repositories and scientific research.

Believe the study tool

The researcher made sure of the sincerity of the tool to measure the virtual honesty by presenting it to a number of arbitrators specialized in the curriculum and education technology in order to make sure to measure the appropriateness and affiliation of the paragraphs, the clarity of the phrase and the soundness of its formulation, and the submission of proposals for amendment, addition or deletion, has been shown The arbitrators have appropriate observations and opinions, and have been introduced and formal adjustments have been made in the drafting, and the resolution is finalized.

The stability of the study tool

To ensure the stability of the study tool, the test-retest method was verified by applying the scale, and reapplied two weeks later to a group outside the study sample consisting of (30), and then the Pearson correlation coefficient was calculated between their estimates twice.

The stability factor was also calculated in the internal consistency manner by the Cronbach Alpha equation, and table 2 shows the internal consistency coefficient according to the Cronbach Alpha equation and the stability of the return of the areas and the tool as a whole, and these values were considered appropriate for the purposes of this study.

Table (2)

Cronbach Alpha Internal Consistency Coefficient and Realignment Stability of Fields and Total Grade

Domain	Replay stability	Internal consistency
Digital cloud libraries	0.87	0.71
Electronic archiving	0.85	0.74
Information Management	0.83	0.73
Digital repositories	0.84	0.78
College degree	**0.85**	**0.84**

Statistical standard

The Five-Year Likert ladder was adopted to correct the study tools, giving each of its five paragraphs one score (very large, large, medium, very weak, weak) and represents digitally (5, 4, 3, 2, 1) respectively, and the following measure has been adopted for the purposes of analyzing the results:

From 1.00- 2.33 low
From 2.34- 3.67 average
From 3.68- 5.00 Large
And so,

The scale was calculated by using the following equation:

$$\frac{\text{Upper scale (5) - minimum scale (1)}}{\text{Number of categories required (3)}}$$

$$\frac{5.1}{3} = 1.33$$

Then add the answer (1.33) to the end of each category.

Search execution procedures

To achieve the objectives of the research, the following steps and procedures were followed:

- Identify a random sample of the entire community for faculty members in the College of Basic Education.
- Prepare the search tool and present it to the arbitrators to take advantage of their observations and take them.
- The researcher distributed the questionnaire to a survey sample of faculty members in the Public authority for applied Education and Training, and then after extracting honesty and stability the questionnaire was distributed to the sample.
- The researcher unloaded the surveys and performed statistical analysis using appropriate statistical treatments to present and discuss the results and make recommendations.

Statistical treatment

In the light of the study's questions, the researcher used the appropriate statistical treatments through analysis on the SPSS program, the researcher has used mathematical averages and standard deviations, the coefficient of internal consistency Cronbach alpha and the stability of replays and repetitions, in addition to analyzing the four-way contrast to show the variables of the study, and the use of the Chevy method of dimensional comparisons of the effect of variables.

- View and discuss the results

Question 1: "What is the reality of using cloud computing in university education from the point of view of the faculty members of the State of Kuwait?"

To answer this question, the mathematical averages and standard deviations of the reality of using cloud computing in university education have been extracted from the point of view of the faculty members of Kuwait, and the table below shows this.

Table (3)

Computational averages and standard deviations of the reality of using cloud computing in university education from the point of view of faculty members in Kuwait ranked**downwardly according to arithmetic averages**

Rank	Number	Domain	Average arithmetic	Standard deviation	Relative importance	Level
1	1	Digital cloud libraries	2.45	.535	49.0	Average
2	2	Electronic archiving	2.30	.440	46.0	Low
3	4	Digital repositories	2.28	.462	45.6	Low
4	3	Information Management	2.21	.439	44.2	Low
		College degree	**2.31**	**.352**	**46.2**	**Low**

Table 3 shows that computational averages ranged from (2.21-2.45), with digital cloud libraries ranked first with the highest computational average of (2.45), with an average score of 49%, and e-archiving in second place with an average (2.30), with a low and a percentage (46%), digital repositories came in third place, with a mathematical average of (2.28%) low and 45.6%, while information management was last placed with a mathematical average of 2.21, with a low score of 44.2%, and the average numeric tool as a whole (2.31) low. By 46.2%.

The researcher attributes the result of the current total question to a low and an average of 46.2% and the importance ratio of 46.2%, to the lack of use of the fields and the lack of reliability of faculty members in their research, their preparation for the lecture, or to read the digital library and digital repositories, and it seems that Fear of its impact on visual and physical abilities through the time spent researching and reading is controlled, and we can attribute the result to the insecurity of information, regulations and privacy, and may be the cause of poor skills in dealing with or accessing cloud computing and the search process either In the digital library or digital repositories, the need for training and the necessary programs seems to be due to a lack of awareness of the importance of cloud computing in its areas of university education, as well as the informatics complexities in the use of cloud computing. The result is also due to the need for new mentalities to accommodate this type of change also by learning new cloud control methods and applications such as: infrastructure controls and virtual monitoring, the development of platforms and the way in which the application is deployed and made available to any cloud provider. Bhat, 2009; Melanie King, 2008 Akin, Matthew & Comfort, 2014;).

The calculation averages and standard deviations of the study sample estimates were calculated on the paragraphs of each area, as follows:

Area 1: Digital cloud libraries

Table (4)

Computational averages and standard deviations for paragraphs related to the field of digital cloud libraries are **ranked downwardly by computational averages**

Rank	Number	Paragraphs	Average arithmetic	Standard deviation	Relative importance	Level
1	1	I can read the e-book easily and easily.	3.52	.908	70.4	Average
2	3	Digitalcloud libraries enable me to take advantage of their services through Google Directly.	3.28	1.131	65.6	Average
3	4	I can post on the library's website.	2.88	.866	57.6	Average
4	5	I can host through Google service and interact with students.	1.98	1.079	39.6	Low
5	6	Digital cloud libraries help me get a wide range of digital images, Microsoft Ops files and pdf.	1.86	1.057	37.2	Low
6	7	I can access mobile phones to digital cloud libraries through a personal account on Google and any other site and communicate with Researcher faster and easier.	1.84	.912	36.8	Low
7	2	My use of cloud digital libraries brings economic benefits to universities and research centers.	1.76	1.066	35.2	Low
		Digital cloud libraries	**2.45**	**.535**	**49.0**	**Average**

Table 4 shows that the arithmetic averages ranged from (1.76-3.52), where poverty no. 1, which states "Ican read the e-book easily and easily" came in first place with a mathematical average of (3.52), whilepoverty came number (2) and the text "My use of cloud digital libraries brings benefits" Economic for universities and research centers" in the last place and with an average account of (1.76). The computational average for digital cloud libraries as a whole was 2.45.

The results of the current question are that the overall result is more moderate to low in faculty resistance to the use of digital cloud libraries, due to the high burden and constant preoccupation, and may be the result of a lack of skills in using cloud applications, access to the computerized library, privacy, security, availability and ownership issues, or fear of its impact on visual capabilities, and may be due to few informational complexities, or lack of flexibility in the use of cloud library interfaces and applications. 2014; Adrees, Omer & Sheta, 2016; Musungwini, Mugoniwa, Furusa & Rebanowako, 2016).

The second area: electronic archiving:

Table (5)

Computational averages and standard deviationsfor paragraphs related to the field of electronic archiving are **ranked downwardly by computational averages**

Rank	Number	Paragraphs	Average arithmetic	Standard deviation	Relative importance	Level
1	8	I take advantage of electronic archiving using a scanner or camera and then convert it to pdf.	3.34	.920	66.8	Average
2	9	Enable me to archive and save documents electronically in digital storage repositories with flexibility.	3.04	1.045	60.8	Average
3	14	I can treat documents as a separate unit such as the status of the outbound and incoming so that those transactions received are separated from those issued by the entity.	2.93	.898	58.6	Average
4	17	It facilitates the protection of documents, whether from the failure of the inappropriate or unauthorized person to access them, or even from changing the origins of these transactions and manipulating them, whether by mistake or intentionally.	2.70	.927	54.0	Average
5	11	Easy retrieval and indexing via keywords and short-term access.	2.07	1.085	41.4	Low
6	10	The ability to fill electronic forms with electronic signature.	2.03	1.350	40.6	Low
7	12	Contribute to the movement of documents and dealing with the issued and contained among faculty, staff and departments	1.94	1.016	38.8	Low
8	15	Enrich documents, issue and contained in more Sufism and records to find out their status, actions or cases that may be attributed to them.	1.69	1.059	33.8	Low
9	13	Link documents to more Sufism to serve as a record of identification of each transaction or document entered into the system.	1.66	1.089	33.2	Low
10	16	Contribute to linking them to what is contained or vice versa.	1.61	1.072	32.2	Low
		Electronic archiving	**2.30**	**.440**	**46.0**	**Low**

Table 5 shows that the arithmetic averages ranged from (1.61 to 2.30), where poverty no. 8, which states "I use electronic archiving using a scanner or electronic camera and then convert it to pdf" in the first place and with an average of (3.34), while poverty came number (16) It reads "Contribute to linking the issued with regard to the incoming or vice versa" to the last place and with an average calculation of (1.61). The average calculation of electronic archiving as a whole was (2.30).

The results of the current question are due to the possibility that archival material may be stolen, manipulated and distorted, needs to be followed up from time to time to update it, the lack of a clear policy to manage it and the provision of media and devices to retrieve archive software, which may affect the data stored in this archive in whole or in part if The computer has been exposed to any accident such as malfunctions or electric shocks, which affects the work in the office entirely, and the decrease in the result seems to come from the lack of trust in electronic archiving, so the reality of the use of cloud computing seems to be weak among faculty members and its use in education University, this result agreed with the study (Vertical, 2010) in terms of the presence of negatives in electronic archiving beside features, such as: the interfaces do not contain an auxiliary icon explaining how to use, does not allow the rule to browse the full text, that some new electronic archiving programs Be in a fully experimental and unprepared mode.

Area 3: Information Management

Table (6)

Computational averages and standard deviations for paragraphs related to the field of information management are **ranked downwards by calculation averages**

Rank	Number	Paragraphs	Average arithmetic	Standard deviation	Relative importance	Level
1	22	Provide information security through identity management and access control of information resources and service resources according to my needs.	2.87	.866	57.4	Average
2	19	I can share and make courses available electronically.	2.77	.913	55.4	Average
3	20	It helps me share files online and is convenient for most apps and devices.	2.35	.979	47.0	Average
4	21	Contribute to saving time and effort.	2.30	.963	46.0	Low
5	23	Enables me to get information with ease and ease.	1.52	.918	30.4	Low
6	18	Information management from any classroom I need and students allows to a shared location or storage place between us.	1.45	.886	29.0	Low
		Information Management	**2.21**	**.439**	**44.2**	**Low**

Table (6) shows that the arithmetic averages ranged from(1.45to2.87),where poverty no.(22) provided for "providing information security through identity management and control of access to information resources and service resources according to my needs" in the first place and with an average account of (2.87), while poverty came in first place and my account average of(2.87), while poverty came Number (18) and its text "The management of information from any classroom I need and students to a joint location or storage place between us" in the last place and with an average account of(1.45). The average calculation of information management as a whole was2.21.

The result of the current question, where the result as a whole was low with a mathematical average (2.21%) and by 44.2%, is due to the existence of many difficulties and reasons in the management of information, where the system was found to be difficult to use, difficult to download the system, as well as having to use complex rules to guide them in the event that the system was unable to direct them, and it seems that the system does not reduce routine work but leads to automation.

Area 4: Digital Repositories

Table (7)

Computational averages and standard deviationsfor paragraphs related to the **field of digital repositories** are **ranked downwardly by calculation averages**

Rank	Number	Paragraphs	Average arithmetic	Standard deviation	Relative importance	Level
1	29	I can publish my research in warehouses to support the university's scientific activity.	3.33	.993	66.6	Average
2	28	Use it to get rich files whether text files or pdf and retrieved from google and Yahoo search engine.	3.25	1.113	65.0	Average
3	27	Getting the necessary resources contributes to the course development processes we teach.	2.05	.904	41.0	Low
4	26	Share information and experiences with others at the local, regional and international level to support scientific research at different universities.	1.81	1.090	36.2	Low
5	25	Enable me to save and broadcast my digital content and to the university without having to back up the information stored on my PC.	1.75	1.080	35.0	Low
6	24	I can create a special digital repository for students and universities to engage in enriching digital content with research and projects.	1.48	1.103	29.6	Low
		Digital repositories and scientific research	**2.28**	**.462**	**45.6**	**Low**

Table (7) shows that the arithmetic averages ranged from (1.48to3.33),where poverty no.(29) which states "Ican publish my research inside warehouses to support scientific activity at the university" in the first place and with a mathematical average of(3.33), while poverty came number (24) It reads, "Ican create a special digital repository for students and universities to participate in enriching digital content with research and projects" in the last place and with a mathematical average of(1.48). The arithmetic average for digital repositories and scientific research as a whole was 2.28.

The current low result is attributable to the reality of using digital warehouses by (45.6%) To the low technological skills and performance level of faculty members in the use of digital repositories, there seems to be a weakness in activating the role of warehouses and working to increase their number, where there is weakness and a cognitive and digital gap consisting of weakness of content in general, weakness in quantity, weakness in quality, and weakness In the use of information, fear of copyright, privacy and security, data health, attributed the result to the weakness of web servers and their small number in some warehouses, insufficient attention on the part of organizations to set up those warehouses, in addition to the large effort needed to archive With warehouses, low call rate and sometimes accuracy, use of incorrect objective terms, sometimes defecting by retrieving translated texts to other texts, sometimes linking texts published in warehouses to pseudonyms, factors hindering the search process such as weak incentive factor, weak institutional policy, weak internal links to the internal system of the organization, and not linking local warehouses to each other. The results of the current study were in line with the study (Faraj, 2012; Al-Dhafiri and Al-Suweit, 2013; Al-Amoudi, 2010; Melanie King, 2008; Bhat, 2009).

Question 2: "Are there statistically significant differences at the level of significance α (≤0.05) between the mathematical averages in the use of cloud computing in university education from the point of view of the faculty members of **the State of Kuwait due to variables (gender, scientific rank, experience)?**

To answer this question, the mathematical averages and standard deviations of the use of cloud computing in university education were extracted from the point of view of the faculty members of Kuwait according to the variables of gender, scientific rank, experience and table below shows this.

Table No. (8)
Computational averages and standard deviations do not use cloud computing in university education from the point of view of faculty members in Kuwait according to gender variables, scientific rank, and experience

		Average arithmetic	Standard deviation	Number
Gender	male	2.33	.346	154
	Female	2.29	.361	104
Scientific rank	Professor	2.35	.394	13
	Associate Professor	2.33	.359	29
	Assistant Professor	2.31	.350	216
Experience	Less than five years	2.28	.348	143
	5-10 years	2.41	.370	74
	10-15 years	2.25	.308	41

Table (8) shows an apparent variation in computational averages and standard deviations of the use of cloud computing in university education from the point of view of faculty members in Kuwait because of the different categories of variables of gender, scientific rank, and experience and to indicate the significance of statistical differences between computational averages, the analysis of triradiated scale (9) was used.

Table No. (9)
Analysis of the triple variation of the impact of Gender, scientific rank, and experience on **the** use of cloud **computing in university education from the point of view of faculty members in Kuwait**

Source of variance	**Total squares**	**Degrees of freedom**	**Average squares**	**Value P**	**Statistical** significance
Gender	.210	1	.210	1.721	.191
Scientific rank	.001	2	.001	.005	.995
Experience	.975	2	.488	3.998	.020
The error.	30.738	252	.122		
Total	**31.862**	**257**			

Table 9showsthe following:
- The lack and presence of statistically significant differences (= 0.05) attributable to the effect ofGender, where the value of p 1.721 and a statistical significance of 0.191.
- The lack and presence of statistically significant differences (= 0.05) due to the impact of the scientific rank, where the value of p0.005 and a statistical significance of 0.995.
- The existenceof statistically significant differences (= 0.05) attributable to the effect of experience, where the value of p 3.998 and a statistical significance of 0.020, and to indicate the statistically functioned marital differences between the mathematical averages, the dimensional comparisons were used in a manner that is cured as shown in table 10.

Table (10)

Distance comparisons in a way that is chevy about the impact of experience on the **use of cloud computing in university education from the point of view of faculty members in Kuwait**

	Average arithmetic	**Less than five years**	**5-10 years**	**10-15 years**
Less than five years	2.28			
5-10 years	2.41	.12*		
10-15 years	2.25	.03	.15	

* Function at the semantics level (= 0.05).

Table (10) shows statistically significant differences (= 0.05) between less than five years and5-10 years and the differences were in favor of 5-10 years.

The lack of statistically significant differences in the impact of gender and scientific rank is due to the fact that there is a low level of use of cloud computing in university education among females and males, and the scientific rank does not make a difference, and the reason for their low level of technical performance in the use of cloud computing appears to be due to the low level of technical performance in the use of cloud computing, And to the privacy, security

and ownership that make them reluctant to use it, poor incentive to use, search engine search is not that easy and connect with other local repositories.

The statistically significant differences in the impact of experience in favor of 5-10 years as a result of the fact that this experience is sufficient to recognize and gain the necessary skills, whether technical or performance, to use cloud computing and its applications without difficulty, and their awareness of the importance of their existence, and their access to courses may have earned them the ability to use digital information sources and cloud applications.

Recommendations:

In light of the results, the researcher recommends:

1- The need to hold workshops to introduce faculty members to the value of cloud computing, applications and cloud storage.
2- Local libraries should be linked to each other and subscribe to more than one Arabic database.
3- Motivating faculty members to establish private repositories and participate in them to benefit from scientific research, preparation of lectures, tests, training in the enrichment activities of the course, and the publication of the electronic course.
4- Work to secure digital libraries, repositories and archiving in terms of privacy and ownership to become more effective, and confident to their users.
5- More activation to manage information.
6- Perform evaluation studies on performance efficiency by analyzing the satisfaction measurement scans of users of cloud applications in university education, and investing the results of statistics to measure the quality and efficiency of services.

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