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# Cloud Computing: A Look at It Through the Eyes of Kuwaiti University Professors

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## Article Info

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### Abstract

*From the perspective of Kuwaiti university professors, this research set out to uncover the truth about cloud computing's role in higher education. In order to assess the practicality of cloud computing in higher education, the researcher used a descriptive survey approach and created a questionnaire. The questionnaire was divided into four sections: information management, digital cloud libraries, electronic archiving, digital repositories, and scientific research. The research sample consisted of 258 College of Basic Education students and teachers who were administered the instrument. Among the topics covered, digital cloud libraries had the highest computational average at 2.96, followed by electronic archiving at 2.30 (based on 49% importance), and digital repositories and scientific research at 2.28 (based on 46% importance). The results demonstrated that the computational averages ranged from 2.51-2.96. Results were poor when taking into account the relative significance of each component (45.6% vs. 22.1% for information management), the average mathematical value of the whole instrument (2.31%), and the ratio (46.2%). While gender and scientific rank did not seem to have any effect on the outcomes, there were statistically significant differences favoring those with 5-10 years of experience over those with fewer than five years.*

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

### Introduction

Modern educational methods have been greatly

enhanced by scientific and technological progress. These methods can be used to help learners develop their areas of expertise. A hallmark of these methods is their reliance on technological innovations to improve the efficacy and efficiency of education. Education has been made more efficient, interesting, and enjoyable through the use of electronic presentation, satellite channels, the Internet, educational bags, electronic screens, and electronic libraries, all of which employ a variety of techniques and methods to supply educational content with static and dynamic visual components and audiovisual effects. With its many services and

capabilities, the web has been a source of

information about the development of educational technology. This information can be found in a variety of forms and sources, including specialized educational sites, renewed databases, books, and online journals. E-learning and distance learning, two of the most significant technological innovations in recent times, aimed to shift the focus of the educational process from the teacher to the learner. Distance learning and e-learning will undoubtedly alter our perception of conventional classroom instruction. This shift will have knock-on effects for schools and the development of online course materials, the majority of which offer textbook-style lectures (Alfailakawi and Anzi, 2016). Consequently, education is a dynamic field that is always evolving, from the tried-and-true method of distant learning to modern forms of online education

that make use of multimedia, electronic books, and the Internet. Education is intertwined with E-learning, telecommunications, and communication media as an integrated system of educational technology advancements with a variety of models of these advancements in technological hardware and scientific materials and software, like cloud computing. When properly implemented, these advancements will surely pave the way for new solutions to old educational problems and make education systems more responsive to learners' goals and objectives in terms of their ability to learn and acquire new skills. Computer resources are used by several organizations, including governments, businesses, and educational institutions, for data storage, application execution, and software development. The requirement for these devices fluctuates; sometimes, their availability and effective functioning are vital, and maintenance, administration, and a location to put them are necessary to keep them running well. Other times, the reverse is true. So, These organizations, whether public or private, have started to seek out new ways to ensure the two most crucial things: reducing waste and increasing productivity (Al-Khalaf, 2014). Computing, drivers, applications, data access, and storage services that do not necessitate the last user's knowledge of the service's geographical location and the configuration of the system that connects those services are all embodied in cloud computing, which was the best solution. As a result, cloud storage is an essential component of cloud computing that allows university administrators, students, and teachers to save time and work from any location. Understanding what cloud computing is and how it works, as well as its pros and cons in the classroom, identifying cloud storage and its applications in universities, and highlighting its actual use in education are all necessary due to the significance of cloud computing and the necessity to bring attention to its practical application in higher education.

### **Theoretical framework**

The concept of cloud computing has its roots in the 1960s, when John McCarthy, a professor at Stanford University, proposed the idea that computing could be regulated to become a public service. However, it wasn't until the early 2000s that this idea began to take shape, with Microsoft spearheading the expansion of software through the web. Other companies quickly followed suit, with Google emerging as a leading player in the field of cloud computing. Google not only launched services that leverage this technology, but also introduced an integrated operating system for computers operating in 2009. An operating system and an internet browser are all that's needed for a user to see how things

are running in the cloud. Users don't need complicated or diverse programs, and they don't even need to keep their data on their personal devices. All they have to do is upload the data that needs processing and storage, and the cloud will hold it until it's either modified or deleted.

### **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 is a 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, Help the student get all the different programs and information sources he needs for his courses at any time, from anywhere.

- 1- 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.
- 2- 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 virtual servers, 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 in mass 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.

Store documents and special papers that can be used even while traveling.

One way that cloud computing applications can be used in higher education is by creating digital cloud libraries. These libraries will allow students, faculty, and staff to read electronic books in an

environmentally friendly way, which will have a positive impact on the economy. \*Converting paper documents to PDFs using a scanner or e-board camera is one usage of electronic archiving. Another is the prospect of organizations accepting electronic signatures on forms. \*Information management, whereby online file sharing, the ability to make courses accessible electronically, and compatibility with a wide range of programs and devices are all necessities for any classroom where instructors may require a shared storage space. \*Digital repositories; schools and students may work together to improve digital material via research and projects, and there's no longer a need to back up data kept on individual computers. \*Developing desktop apps with Microsoft products, including Word, Excel, PowerPoint, and others. \*Research conducted by Leder (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).

Results showed that children from South Africa to Cambodia and India had taught themselves a great deal of information, concepts, and various subjects, often beyond the possibilities of what was considered possible, thanks to Sugata Mitra's experiment, in which he chose a number of remote villages across multiple countries and continents and gave each child access to a computer with the Internet. suitable for children of that age. "Groups of children can learn to use computers and the Internet regardless of circumstances or where they are," stated Mitra. Utilizing cloud computing, applications, and storage in education is improving the learning and education system while speeding up technological advancements and innovations. It has been confirmed (Polydoratou, 2007) that faculty members prefer to publish their research in digital repositories, which helps the university's scientific endeavors and fulfills researchers' desires to include digital repositories on links to scientific journal publishers. The work of students can be relied on by digital repositories that are cloud computing applications (Mcknight, 2007). University messages are the most likely sources to be used for research and university education (Mittal & Mahesh, 2008). Libraries and e-repositories in India have a huge amount of content (thousands of books and articles). Cloud computing opens up a vast new world of online resources for academics and students alike. With cloud storage, data can be saved and retrieved in a variety of formats, with full text access to databases and other resources, and updates can be made in real-time (Sfelfel, 2009). Thomas (2011) emphasized that cloud computing is a powerful platform for teaching and learning ideas, with significant implications as a virtual communication medium and a participatory medium. Traditional methods cannot adequately meet the needs of higher education. Holmquist (2010) added that teachers were able to successfully organize courses and curricula with the help of cloud computing, and they also felt a greater sense of ownership over these materials. The "cloud computing" concept has come under fire. Although there are many positive aspects of cloud computing and its applications in education, the term "cloud computing" has caused quite a stir among researchers and experts. Some have argued that it is too vague or misleading, while others have highlighted the fact that cloud computing is "all we do already do" at Oracle and that the company cannot "change the words used on any of its ads" to promote its current services. Making Use of the Cloud (Ellison, 2008; Farber, 2008).

According to Frant Gillette, the deputy director of Forrester Research, "cloud washing" occurs when

companies rebrand their products as cloud computing, elevating numerous marketing innovations to the status of true innovation (Gillett, 2008).

Founder of Geno Richard Stolman has compared cloud computing to a "hybrid marketing campaign" and maintained that it is a business strategy based on the delivery of services across other people's systems at ever-increasing prices (2008manStall).

Nevertheless, cloud computing has its detractors, but it is widely embraced in the educational system, particularly at the university level, where it greatly benefits students, teachers, and departments. The cisco® Global Cloud Index (2011-2016) predicts that by 2016, global data traffic through data centers will have quadrupled to 6.6 zettabytes per year. The Middle East and Africa region is expected to have the fastest growth rates of cloud computing, at 79 percent, followed by Latin America at 66 percent, and Central and Eastern Europe at 55 percent. So, cloud computing is here to stay as a technological trend. Universities have come to terms with the fact that staying competitive and retaining students requires them to implement cutting-edge solutions, and cloud computing helps them do just that while also increasing their bottom lines. Virtual data centers made possible by cloud computing are also available 24/7 to university personnel, students, and faculty members from any location. Research issue Despite cloud computing's critical role in higher education and its inherent necessity, the study's central finding is that academic institutions across disciplines have shown little enthusiasm for implementing cloud computing into their day-to-day operations. university (Kuwait's public authority for applied education and training) for cloud computing, and their utilization of it is nearly nonexistent. The researcher became aware of the dearth of Arab-level studies and research on cloud computing, which led to the initiation of the current study to address the following questions: 1. From the perspective of Kuwaiti university professors, how does the use of cloud computing really work? 2. Are there any differences in the mathematical averages regarding the use of cloud computing in university education based on gender, scientific rank, or experience that are statistically significant at the 0.05 level of significance? Goals of the research 1-Hear from Kuwaiti university professors on their experiences with cloud computing in the classroom.

2-When looking at cloud computing from the perspective of Kuwaiti university faculty members, a variable (gender, scientific rank, experience) is responsible for measuring statistical disparities between

computational averages. Studying is crucial The following are reasons why both theoretical and practical research are important: 1-To bring attention to the fact that academic members at Kuwaiti universities really utilize cloud computing. 2-Cloud computing is becoming increasingly important as a technological trend. Universities have come to realize that staying competitive and retaining students requires them to adopt new technologies. Cloud computing helps with storage security and reduces expenses related to hardware, software, and maintenance. What's more, universities can use cloud storage and computing to access virtual data centers from anywhere at any time. 3-To the best of the researcher's knowledge, there is a dearth of material on the topic at the Arab level; furthermore, this study is nearly the first of its type in the State of Kuwait, and its findings may encourage researchers and scholars to investigate further the many facets of cloud computing and its significance in higher and general education. 4-Cloud computing has traits and qualities that impose itself in the technological race arena; this research may help universities and their departments in Kuwait, as well as faculty, identify its relevance and find acceptable and effective ways to employ it on the ground. 5-Because there is a dearth of research on the topic, the present study may help fill that need in library collections. Definitions of study terms - "Cloud computing" refers to the practice of meeting computer demands via the use of Internet services. This might include storing data, accessing computing power through advertising, or using software applications (Kroski, 2009). Cloud computing is formally defined by the researcher 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." - Members of the faculty: "anyone employed in the teaching profession at the university level who is a professor, associate professor, or assistant professor and who possesses a Ph.D. in a field of science or humanitarian studies" (Hamdi, 2001: 510). According to standard procedure, the researcher is referred to by the faculty as "a university teacher with a PhD in a humanitarian or scientific discipline, and holds a position of scientific rank." Research constraints Objectivity: The research only aimed to show how cloud computing really works in higher education from the perspective of professors. 1-The Public Authority for Applied Education and Training in Kuwait is home to the College of Basic Education Department and the Education Technology Department. 2-Second half of 2020/21 academic year. 3-The integrity and reliability of the research methods used characterize the study.

#### Past research

Following is a chronological listing of some of the prior Arab and international studies and research that are pertinent to the present study: According to a study conducted by Maguire in 2005, the purpose of the study was to gain experience with an electronic document management system. The study followed the implementation of the system from the beginning of preparation to the training phase. Despite extensive training, the majority of staff members still had complaints about the new system. These complaints stemmed from three main reasons: the system's difficulty in use and downloading, the fact that complex rules would have to be used to guide them if the system failed, and the fact that the system does not reduce routine work but leads to automation. Based on an electronic survey that was sent to 755 university faculty members in the UK, this study aimed to gather information about the current and future warehouse usage rates as well as the management of copyright for materials listed in the warehouse. It also relied on interviews with faculty members from engineering, science, the humanities, and the social sciences to learn more about the resources and materials created by faculty members, the technical methods used to share these materials with students, and the level of participation in university digital repositories. The results indicated that 38.8% of faculty members had previously participated in digital repositories, and 80.7% believed they would 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 Lack of strong internal ties to connect warehouses to the organization's internal system and poor institutional politics that prevent local warehouses from interacting with one another. The purpose of the Al-Dhafiri and Al-Suweit Study (2013) was to determine the level of digital information source usage among Kuwaiti university faculty members. The study used a descriptive curriculum to gather data, and the sample included 180 faculty members from the university's scientific and literary faculties. To determine the level of digital information source use, a standard was used. The results indicated that most faculty members in the scientific and literary faculties agreed that digital information source use was necessary and important, and that faculty members find it difficult to acquire the specialized skills needed to effectively utilize digital information sources. Research (Musungwini, Mugoniwa, Furusa &) sought to determine the advantages of Google Docs for academics and researchers, as well as to examine the factors influencing the adoption and utilization of technology by university lecturers in Zimbabwe. The study found a knowledge gap and recommended organizing workshops to educate lecturers on the benefits of this technology. Using an online questionnaire that tested the relationship between cloud computing adoption and predictive variables (benefits, difficulties, compatibility, institute size, technological readiness, regulatory policies, and service provider), the study (Klug, 2014) sought to identify the factors that determine the adoption of cloud computing by some colleges and universities but not by others. The sample for this non-experimental quantitative study consisted of 119 principals from universities and colleges in the US and Canada that use or consider cloud computing. The purpose of this study was to identify the benefits and drawbacks of cloud computing as it pertains to public universities in southwestern Nigeria. One hundred faculty members, fifty teaching assistants, and fifty students were randomly selected from each university using a cluster method. The research questions were formulated by the researcher specifically for this study. The study found that cloud computing has a major effect on costs, makes more resources available, has a small effect on the environment, simplifies information, allows for mobility and scalability, and reduces the need to invest in physical assets. The cloud computing biggest problems are data security, privacy, and regulations. 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 dimensional 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 . According to a study (Adrees, Omer & Sheta, 2016), data was collected in an inferential fashion with the intention of conducting a quadruple analysis to ascertain the impact of cloud computing application in the Republic of Sudan as a model from the perspectives of managers, teachers, and

students. The study also revealed downsides associated with cloud computing, such as security and privacy concerns.

**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**

	<b>Categories</b>	<b>Iteration</b>	<b>Percentage</b>
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
	<b>Total</b>	<b>258</b>	<b>100.0</b>

**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**

<b>Domain</b>	<b>Replay stability</b>	<b>Internal consistency</b>
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
<b>College degree</b>	<b>0.85</b>	<b>0.84</b>

**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: Upper

$$\frac{\text{scale (5) - minimum scale (1)}}{\text{Number of categories required (3)}} = 1.33$$

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
		<b>College degree</b>	<b>2.31</b>	<b>.352</b>	<b>46.2</b>	<b>Low</b>

The computational averages ranged from 2.21-2.45, as shown in Table 3. The top three areas were digital cloud libraries with an average of 2.45 and a score of 49%, e-archiving with an average of 2.30 and a score of 46%, digital repositories with an average of 2.28 and a score of 45.6%, information management with an average of 2.21 and a score of 44.2%, and the average numerical tool with a score of 2.31. A whopping 46.2%! A low and average result of 46.2% and an importance ratio of 46.2% was attributed by the researcher to faculty members' unreliability in conducting research, preparing for lectures, or using digital libraries and repositories. There appears to be a fear of the potential impact on visual and physical abilities as a result of the amount of time spent researching and reading, which could be attributed to concerns about privacy, regulations, and the security of information. Additionally, poor skills in using cloud computing and conducting searches could be a contributing factor. the other It seems that the informatics complexity of cloud computing and the lack of understanding of its relevance in university education are to blame for the need for training and the required programs in digital libraries and repositories. This is because adapting to this kind of change necessitates not only new ways of thinking, but also new ways of learning about and using cloud control methods and applications, such as virtual monitoring and infrastructure controls, platform development, and application deployment and availability to any cloud provider. As an example, Bhat (2009), Melanie King (2008), Akin, Matthew, and Comfort (2014).

### 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
		<b>Digital cloud libraries</b>	<b>2.45</b>	<b>.535</b>	<b>49.0</b>	<b>Average</b>

Table 4 shows that the arithmetic averages ranged from (1.76-3.52), where poverty no. 1, which states "I can read the e-book easily and easily" came in first place with a mathematical average of (3.52), while poverty 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 deviations for 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
		<b>Electronic archiving</b>	<b>2.30</b>	<b>.440</b>	<b>46.0</b>	<b>Low</b>

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
		<b>Information Management</b>	<b>2.21</b>	<b>.439</b>	<b>44.2</b>	<b>Low</b>

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

**Area 4: Digital Repositories**

**Table (7)**

**Computational averages and standard deviations for 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
		<b>Digital repositories and scientific research</b>	<b>2.28</b>	<b>.462</b>	<b>45.6</b>	<b>Low</b>

Table (7) shows that the arithmetic averages ranged from (1.48 to 3.33), where poverty no. (29) which states "I can 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, "I can 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).

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