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The Role of Using Cloud Computing in Improving the Quality of Accounting Education in Palestinian Universities in Light of the Covid-19 Pandemic

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ABSTRACT

The study mainly aimed at identifying the role of using cloud computing in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic, and to answer research questions and test the study hypotheses, the researchers adopted the descriptive and analytical approach, and the questionnaire was used as a study tool, and the study community is formed of the (63) members of the teaching staff working in the accounting departments in the faculties of commerce in the Palestinian universities in Gaza Strip, and due to the small size of the community, the method of comprehensive community enumeration was used. The results of the study also found that the use of cloud computing in accounting education helps faculty members and students to access and retrieve their files and applications at any time and from anywhere in light of the Covid-19 pandemic and it also helps develop students' technological skills to suit the requirements of the labor market. The study also recommended the necessity of using cloud computing in accounting education in Palestinian universities for its role in developing the professional and technological skills of students, and improving their educational attainment by obtaining the largest amount of useful information, especially in light of the Covid-19 pandemic.

1. Introduction

In light of the serious attempts by many countries of the world to limit the spread of the Covid-19 pandemic, we find that some countries have taken many preventive measures in facing it by closing universities, which means that thousands of students remain in their homes hoping and waiting for their return and completion of their studies. It is no secret to everyone that the Palestinian government is concerned about the continuity of the educational process, so it has been announced by Palestinian universities that they provide electronic learning platforms that allow students to complete their studies via the Internet, through the various e-learning platforms, in a manner that suits the requirements and needs of students, leading to the provision of an educational environment suitable for all students, which they must undertake in light of this pandemic.

The Covid-19 pandemic has also led to a careful thinking about the use of cloud computing in accounting education because of the applications it provides without installing them on computers, and access to educational materials and files saved from any device, from anywhere, at any time via the Internet at a lower cost, and saving time, money and effort, increasing academic interaction between students with one another and between students and faculty members, improving the level of accounting education for students and their achievement of better grades, spreading accounting education and reaching a greater number of beneficiaries, providing students with a comprehensive scientific, professional and technological skills

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base, developing and constantly updating the contents of accounting courses. And it contains a large number of important questions, exercises and practical cases for students.

Whereas, improving the quality of accounting education and its success in light of the Covid-19 pandemic depends to a large extent on the use of cloud computing technology that is used and the employment of its applications in light of the actual need for it, and to encourage Palestinian universities to use this technology in accounting education to keep pace with scientific progress in this field. It has the lead among international universities in accounting learning, but Palestinian universities face a set of obstacles and challenges that limit the use of cloud computing in accounting education, whether it is technical, technical, administrative or financial.

2. Study Problem:

The trends in many countries of the world to develop education in general and accounting education in particular have become closely linked to the shift towards the use of modern technological technologies, including cloud computing in accounting education because it provides data storage and internet services as well as great computing power. After what has become the traditional accounting education system in light of the Covid-19 pandemic does not meet the needs of students in Palestinian universities to spread accounting knowledge and develop students 'professional and technological skills, however, the use of cloud computing may face some obstacles and challenges in Palestinian universities when dealing with cloud computing service applications ; Which reduces the importance of using cloud computing and limits its use in accounting education, and that there is a lack of its services and applications, as well as the lack of available capabilities for use, the lack of sufficient knowledge for use, in addition to the lack of willingness to use cloud computing in accounting education in Palestinian universities, From this standpoint, the study problem can be formulated in the following research questions:

- What is the role of using cloud computing in accounting education on developing the professional and technological skills of students in light of the Covid-19 pandemic?
- What are the possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic?
- What are the obstacles and challenges that Palestinian universities face in using cloud computing in accounting education in light of the Covid-19 pandemic?
- What are the proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic?

3. Objectives of the study

The current study aims to achieve the following objectives:

- Recognizing the role of using cloud computing in accounting education on developing the professional and technological skills of students in light of the Covid-19 pandemic.
- Shedding light on the potentials available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.
- Exposing the obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.
- Presenting the mechanisms and proposals that help the use of cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic.

4. Importance of the study

The importance of the study lies in the importance of using cloud computing technology and its role in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic, and the role of Palestinian universities in using this technology in light of the conditions and capabilities available to them, and seriously thinking about how to take advantage of the advantages and benefits of cloud storage and employ it In accounting education, up to the distinguished performance that meets the requirements and needs of students in the field of accounting to develop their professional and technological skills, and to consolidate the concept of electronic accounting education, to improve the quality of accounting education in Palestinian universities.

The importance of the study is also evident in revealing the obstacles and challenges facing the use of cloud computing in accounting learning, and working to find appropriate solutions to them to overcome those obstacles and challenges to increase its effectiveness in accounting education in Palestinian universities.

The current study also opens the horizons for conducting more future studies on the use of cloud computing and its advantages and benefits in the field of accounting education, and within the limits of the researchers' knowledge and knowledge, this study can be considered one of the first studies dealing with the issue of the importance of using cloud computing and its role in improving the quality of accounting education In Palestinian universities in light of the Covid-19 pandemic.

5. Study hypotheses

In light of the study problem, the goals it seeks to achieve, and the importance it represents, this study seeks to test the following hypotheses:

The first hypothesis: There is a role for using cloud computing in accounting education on developing the professional and technological skills of students in light of the Covid-19 pandemic.

The second hypothesis: There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.

The third hypothesis: There are obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic

The fourth hypothesis: There are proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic

6. The limits of the study:

The results of the study can be generalized in light of the following limits:

Time limits: The period for preparing this study during the year 2020.

Spatial boundaries: Accounting departments in the Faculties of Commerce in Palestinian universities operating in Gaza Strip.

Human limits: faculty members.

Objective limits: Examining the role of using cloud computing in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic.

7. Study literature

A study done by Sangstera (2020) dealt with a set of views and ideas consisting of 66 people to identify the impact and responses of Covid-19 on accounting education in 45 different countries around the world, and the results of the study revealed that there are commonalities among the respondents and a diversity of responses, and there were many Among the positive results is the need to re-establish strategies for electronic accounting education in light of the Covid-19 pandemic instead of traditional accounting education, but many of the results are negative regarding the negative impact of traditional accounting education on the health of faculty and students, and the accompanying psychological pressures. Designing accounting systems to suit the requirements of electronic accounting education in light of the COVID-19 crisis, and also recommended conducting many research studies in the field of electronic accounting education and its use in light of the Covid-19 crisis.

A study done by Aguguom, et al, (2020) investigated the impact of the Covid-19 pandemic on accounting education in South Africa, and the results of the study revealed that the Covid-19 pandemic had a significant impact on accounting education and the academic system, as this could lead to disruptions. Dangerous social future, as students drop out of the electronic accounting education system may cause the Covid-19 pandemic because they are unable to engage in electronic accounting learning, as well as uncertainty about their future prospects. The results of the study also revealed that there is a weakness in financing accounting education in light of the Covid-19 pandemic, which has caused a decrease in the quality of accounting education in South Africa, and the study recommended that there is an urgent need for technological investment in the field of higher education, especially accounting education to enhance the ability of students and faculty to Using accounting education via the Internet, universities and higher education institutions should consider increasing funding, and improving the quality of graduates from countries.

A study done by Nasri (2019) focused on the importance of using cloud computing in the quality of higher education and its impact on developing its methods. She focused on the advantages available through the use of cloud computing for both faculty and students, and pointed out the challenges that the use of cloud computing may face in higher education, and the results of the study revealed that the use of cloud computing achieves many benefits for e-learning, saving time, reducing costs, and ease Implementation, flexibility, scalability, reaching the maximum of information technology capabilities, focusing on core competencies, sustainability, and measurability. The study recommended that higher education and scientific research institutions pay attention to e-learning and use it in teaching as an electronic platform for spreading lessons on the Moodle system.

A study done by Mahmoud (2018) examined the effect of using cloud computing services in improving and developing accounting education in Egypt to suit the variables of the contemporary business environment and the requirements of the labor market. The results of the study concluded that the use of cloud computing services leads to the spread and improvement of university accounting education, and the development of relevant skills. And technology for students to suit the requirements of the labor market, and that there are some potential obstacles to using cloud computing services in teaching accounting courses, such as the lack of most faculty and students possessing technological skills, and the lack of financial allocations necessary for the training process for human forces, and the study recommended the necessity of activating the use of cloud computing services in teaching University accountancy, and enhancing the skills of faculty members in accounting departments in designing and developing educational courses for their use through modern information technology means, and the need to adequately qualify students of the accounting major to help them use cloud computing services in university studies.

A study done by Sun (2018) aimed to explore and change the pattern of accounting education through the development of information technology to promote and reform education in general and accounting education in particular, and the results of the study concluded that developing information technology at the present time provides more opportunities for the development of accounting education than As ever, personal and social education has become a new feature of accounting education in the age of the Internet, as the use of cloud computing, big data, the Internet via mobile phone and other new technologies gave accounting education a new meaning and made it more diverse, and the study recommended the need to confront the new changes brought about by The Internet, how to apply the Internet to teaching accounting, and how to reform the method of accounting education and improve the efficiency of accounting studies in the age of the Internet, and put forward appropriate solutions for reform that make accounting education more diverse and comprehensive.

Another study done by Watty, et al, (2014) examined how innovative teaching, learning and evaluation in accounting education, and how students deal with the use of digital technologies that enhance teaching in accounting education using these technologies on a large scale, and the study confirmed that the use of digital technologies in education Accounting, which led to the development of students' level in the major of accounting, and the enhancement of academic courses. The study recommended the necessity of developing the capabilities of the academic faculty in technical and digital education through more training on the use of digital technologies in accounting education.

Commenting on the study literature:

By listing the previous studies, it can be said that the current study agrees with previous studies in several aspects, the most important of which is that it deals with the concept of using cloud computing in accounting education, the impact of the Covid-19 pandemic on accounting education, and the challenges and difficulties facing the use of cloud computing in accounting education.

- The current study differs from previous studies in several aspects, the most important of which is the difference in objectives, research questions, and hypotheses that were formulated to solve the problem, as well as the study sample, and that most of the studies were conducted in different foreign and Arab environments, and therefore none of these studies studied the role of using computing. The cloud to improve the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic, as the current study was applied to a sample of faculty members working in accounting departments in Palestinian universities.
- The researchers benefited from previous studies by being informed and increasing knowledge about the subject of study, enriching the theoretical framework of the study, building the study tool necessary to collect information, and getting acquainted with the statistical methods and measures used.

8. The theoretical framework of the study

First: the concept of cloud computing:

Many researchers have referred to the clarification of the concept of cloud computing and there are many definitions for it, but it includes the same meaning in different formulas and according to the field in which it was placed, and by informing the researchers of the study literature and the meanings, concepts and clarifications presented, they were able to summarize the following concept:

Cloud computing is considered as a technology that relies on transferring the processing and storage space of a computer to the so-called cloud, and it is a modern technology that seeks to develop the field of electronic education in the future and is divided into two terms: computing, which is the field of advanced computers that represent devices and programs connected to a network of servers with devices Different such as smart phones, computers, tablets, etc., and the cloud, which refers to the Internet / space, which is the transfer of data and information from a computer or a smartphone or a server with limited storage to other devices via the Internet and saving the required files on this cloud through a technology based To replace the processing and storage space of the computer to the so-called cloud, and through it the traditional service devices called Servers are completely dispensed with, and this cloud is entered via a special code to unlock the network, and thus it is accessed from anywhere and at any time, and the availability of this cloud Very high storage space for users, and it is a technology that can be continuously developed and updated through the Internet.

Second: applications of cloud computing

Cloud computing applications are as follows:

a. Email Services

They are (E-mail) services, through which data on e-mails, whether incoming or outgoing, are stored in Gmail accounts (Yahoo, Hotmail) and this is done through cloud computing applications, and this is why everyone with an e-mail account can open and browse from anywhere in the world. And at any time and from any device without the need to carry his own storage device, and this will be useful for faculty members and students in universities in light of the safety measures imposed by countries to overcome the Covid-19 pandemic.

b. Cloud storage services:

These are applications for Google drive (Drop box, I cloud) and these are also cloud spaces on which information is stored and retrieved and examined over the Internet at any time and place without the need to have disks or flash drives on the person's or company’s device, and this is highly required in Universities, especially in accounting education in light of the Covid-19 pandemic.

c. Cloud applications:

They are programs for Express, Photoshop, Google Docs, and Office365, which are Office, Photoshop, and other programs that are used to perform required functions such as editing data, images, drawing, etc. These need high storage spaces and through the cloud, users can benefit from them without installing them on personal devices, especially In light of the COVID-19 pandemic.

Third: Types of cloud computing:

Cloud computing consists of three types, namely (AlHaddad, 2019):

a- Public cloud:

It is a cloud computing infrastructure equipped with the service provider and the beneficiary has access to it only via the Internet, and it is available to many customers within the applications grouped on the servers of this cloud, and each customer has his own storage space and his information is secure and separate from other customer information despite subscribing to the same Server.

b- Private cloud computing:

It is a dedicated or ready-made infrastructure for a single customer that is not shared by any other client and works for his own account and is under his complete control over data and information security. Here, the customer can transfer his local

network and its servers to another external location, and the goal is to secure and maintain the company's devices and ensure that they remain in constant contact with the Internet.

c- Hybrid Cloud Computing:

It combines private and public cloud computing and is the sharing of applications and data between the two types of clouds, meaning that the provider enables one of the programs to run on a public cloud and part of it on a private cloud.

d- Community or Shared Computing:

It is the sharing of the cloud infrastructure by many users who have the same fields and interests at work, and access to the cloud can take place from the headquarters of the parties involved or through a third party.

Through the above, the researchers expect that societal or shared computing is best suited for universities and university accounting education, as universities have the same field and interest, and compatibility can be made between them and subscribe to one cloud and determine a headquarters to be supervised in cooperation, especially in light of the Corona pandemic and the closure of universities in many Countries.

Fourth: applications of cloud computing in accounting education:

The technology of cloud computing allows all workers in the educational field, whether students, faculty members or administrators, many advantages that serve the educational process and benefit in the transformation from traditional education to electronic accounting education easily and easily, and it is evident through the application of Google the increasing demand for the cloud computing system in The educational sectors in general and what accounting education needs in light of the Covid-19 pandemic, and among these applications (Al-Suroor, 2018): -

- Application of the (Google Apps) service: which depends on cloud computing and is currently used by 25 million users, including 8 million users who follow the educational process of students, faculty and educational institutions, and this means that 80% of users of this cloud follow the education sector, especially higher education.
- Google Documents () application: It is a document editor and it is a service provided by Google to all subscribers who have their own accounts, including the education sector.
- (Sky Drive) service: provided by Microsoft, which allows free storage space for files up to 25 GB.
- (Amazon) application: which allows the user to develop and complete his work, regardless of its size and capacity.

Power point presentation and Forms

The researchers stress that the Covid-19 pandemic has changed the way universities operate. This pandemic confirmed the importance of universities making use of available technology, especially cloud computing, and using them, whether in the field of scientific research or accounting education, and working with them and enabling faculty members to explain accounting courses and store them via the cloud and make Students carry out their studies at home. The adoption of cloud computing in higher education will have a strong impact on the development of the educational system in universities.

Fifth: The benefits of using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic:

The benefits and advantages of education using cloud computing in general and accounting education in particular, especially in light of the Covid-19 pandemic, include the following (Othman, 2018):

- Cloud computing has great potential to bring about change in educational environments in general and in the accounting education environment in particular due to the incremental and flexibility occurrence and the implementation of faster, easier and more objective solutions, in addition to developing simpler and easier using infrastructure models and operating platform that help to provide educational materials for students with permanent accounting And easily, whether it is visible, audible or readable, especially in light of the Covid-19 pandemic.
- The high storage capacity provided by cloud computing greatly serves accounting education, as all accounting educational materials are provided, downloaded, used and tracked at any time and from anywhere in light of the university closures caused by the Covid-19 pandemic.

- The decrease in the total costs of accounting education based on cloud computing, which is represented in implementation, maintenance, modernization and re-engineering to less than half than in the case of traditional e-learning.
- E-learning based on cloud computing will increase the reliability of e-learning accounting services because most of the internal host servers suffer from an unreliable power source.
- Depending on e-learning through cloud computing, high computing facilities will be provided for accounting research and teaching, especially for simulations, analysis of computing models and similar research.

The researchers confirm that cloud computing offers a strategic advantage to take advantage of all available technological solutions and achieve the largest gains in light of the Covid-19 outbreak, which allows faculty members in accounting departments in universities to explain accounting courses remotely via large servers instead of their own computers, which helps Saving cost and increasing speed, and students were also able to track the explanation of courses at home in light of the Covid-19 pandemic and what caused the closure of most universities in many countries of the world.

Sixth: The role of using cloud computing in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic:

Cloud computing is used as a necessary educational technology for education of all kinds and accounting education among its desirable and distinct types, and it depends on an electronic platform to publish, store, process and share lessons on the Moodle line via the Internet, and there are many tasks related to cloud computing and improving the quality of education in general, including the quality of accounting education in light of The Covid-19 pandemic, it can be mentioned as follows (Nasri, 2019): -

- Cloud computing has a positive impact on improving the quality of accounting education through the use of the Moodle application and the services it provides for faculty and students in light of the Covid-19 pandemic.
- Encouraging cloud computing by using the Moodle application in Palestinian universities to infuse the spirit of competition and the continuation of the educational process, especially accounting education, during the precautionary measures taken in light of the Covid-19 pandemic.
- To provide cloud computing and the Moodle application to spread the lessons of accounting education quickly and facilitate access to information and share it over the Internet 24 hours without interruption, and this allows students to retrieve the explanation of accounting courses at any time.
- Cloud accounting works on the scalability of services for accounting education upon demand by users by providing multiple and renewable data centers over the Internet and accessing them safely and quickly in light of the Covid-19 pandemic.

Seventh: The available potentials for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic:

The integration of technology in the educational process has become a global trend, and interaction with educational activities through mobile devices constitutes a catalyst factor for learning instead of being satisfied with traditional study (Yulia, 2020). Basilaia, Kvavadze, 2020) believe that e-learning is an organized process that aims To achieve the results of the educational process by using technological means that provide sound, pictures, films, and interaction between the learner, the educational content and activities at the appropriate time and time, and to the increase in the amount of data and information available on the Internet networks and servers of Palestinian universities and the accumulation of files and the need for a large sector of society to obtain this information at the same time One at any time and with ever-increasing server storage costs. Universities have become an urgent need for cloud computing that is backup copies and aims to protect and manage data effectively and efficiently, and for this, cloud computing is the best solution for the electronic accounting education base in light of the Covid-19 pandemic, and all of these needs capabilities that must be available in Palestinian universities, including:

- Moodle or Upinar platforms, which are educational platforms available in Palestinian universities as an electronic scientific platform, but they need to be activated by faculty members and students, and through them, students in accounting education are provided with scientific materials related to the major, whether they are visible, read or Audible in light of the Covid-19 pandemic, educational platforms are easily linked to cloud computing servers to increase their absorption and storage capacity.

- Palestinian universities have internal computer networks, computer devices, laboratories, and internet networks capable of receiving, transmitting and communicating with the world.
- Palestinian universities have applications that can be run through cloud computing and benefit from its services in accounting education in light of the Covid-19 pandemic.
- Palestinian universities have qualified human resources to deal with technologies and technologies that serve cloud computing, which have been used to activate the use of Moodle, Zoom and other applications in accounting education in light of the current crisis of the Corona pandemic and the closure of universities.

Eighth: Challenges and obstacles facing the use of cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic:

Although cloud computing provides many advantages for electronic accounting education, especially in light of the Covid-19 pandemic, it also has some drawbacks, which we can review as follows (Al-Suroor, 2018):

- **Security**: where the data and information are controlled by the service provider and he has the right to prepare backup copies, and accordingly, suspicion and questions are made by the beneficiary (universities) about the security of data and information related to accounting education and how to deal with any damage caused to them.
- **Reliability**: Palestinian universities are afraid of adopting cloud computing due to its adoption primarily on the Internet, and questions are asked about the extent to which the university community's needs for educational materials and data for accounting education can be met over a 24-hour period, especially in light of the current crisis caused by the Covid-19 pandemic and the commitment of students to their homes due to the closure of universities.
- **Control**: Palestinian universities fear losing control of their information and data in general, including data on accounting education when adopting cloud computing, because they will be at the mercy of the service provider, and universities will be in dire need of this data available on the cloud to provide it to students for viewing and using it under The Covid-19 pandemic.
- **Service level agreements**: Palestinian universities are afraid of the quality of service approved by the cloud computing provider, which is inconsistent with the basic requirements of cloud computing, which should serve the accounting education community efficiently and effectively in the circumstances of the Covid-19 pandemic.

Ninth: The proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic:

There are many mechanisms that must be available to transform accounting education in Palestinian universities to cloud computing, especially in light of the Covid-19 pandemic and precautionary measures in particular, which have become an imminent pretext for digital learning, and the researchers were able to formulate them through (Telecommunication Development Sector, 2017) as follows:

- **Investing in information technology infrastructure**: it requires allocating resources to improve and expand the transition to fixed and mobile networks at affordable prices in order to stimulate Palestinian universities to switch to cloud computing due to the strong need to use it in accounting education, especially in the circumstances of the Covid-19 pandemic.
- **Promoting the policy of mutual accounting education**: This is done by strengthening the policy of mutual accounting education between Palestinian, Arab and Western universities in light of the spread of the Covid-19 pandemic, and making efforts to remove barriers to the flow of data and its exchange with others within the limits of the Digital Transformation Law.
- **Encouraging interoperability and harmonization of rules at the international level**: a smooth flow of data around the world is essential from various cloud service providers and data centers in order to achieve the economic value of educational data, especially accounting education data and the value it brings to students in light of the Covid-19 pandemic, and this requires strengthening Efforts that encourage openness and interoperability.
- **Protecting scientific intellectual property**: This requires policymakers to protect intellectual property and invention rights for research and development of accounting education in Palestinian universities, and this is done by enacting laws that provide strong incentives to protect scientific property and taking strict measures against those who violate the cloud service providers.

- **Combating cybercrime**: Here, the cloud service providers are required to combat themselves in unauthorized access to data and information on accounting education in Palestinian universities and stored in the cloud, and to address crimes committed outside the borders in accordance with the law.
- Enhancing security: Here, users of accounting education data in Palestinian universities need their data to be safe while running applications in the cloud and transferring and manipulating data to and from the cloud, and this requires service providers to implement the latest cybersecurity solutions without the need for specific technology, and this can be done. By strengthening electronic signature laws and performing security checks to host digital data.
- **Ensuring data privacy**: The success and adoption of cloud computing depends on the belief of users of accounting education data in Palestinian universities that their data and information will not be used and will not be disclosed in unexpected ways. At the same time, in order to maximize the benefit from the cloud, service providers must be free to transfer data from throughout the cloud, in the most efficient way, and to maintain no conflict between these two goals, international privacy principles must be used.
- **Adoption of artificial intelligence**: As artificial intelligence has proven a commendable role in facing the Corona pandemic in educational fields, and both (& Alhelou Rashwan, 2020) indicated that it helps increase the intellectual and innovative energy of the human being in parallel with the increase in the intelligence of machines and tools, it changes human beings The machine together is for the better, and the development of artificial intelligence technologies has created a new generation of smart computers and expert accounting systems, raising their efficiency, developing the efficiency of accountants, providing them with professional skills, improving performance and completing accounting work as quickly as possible. Of the importance of enhancing accounting education in light of the Corona pandemic.

9. The practical framework of the study

Study methodology and data collection sources

The researchers used the descriptive and analytical approach to suit this approach to the nature of the study and its objectives to find out the role of using cloud computing in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic, and the sources of data collection were as follows:

First: Secondary sources: represented in books, scientific references, previous studies, periodicals, and specialized scientific and professional journals related to the subject of study, as they contribute to enriching the study in a scientific way and to see the latest developments in the field of study.

Second: Primary sources: The primary data was obtained by means of the questionnaire as a main tool for the study that was prepared after the researchers reviewed many literatures of previous studies and scientific books related to the subject of the study, and it was formulated in accordance with the environment of the study in order to reach results that respond Regarding the study's questions, the statistical packages program (SPSS) was used to analyze the questionnaire data.

Study population and sample

The study population consists of the (63) faculty working in the accounting departments of the Faculties of Commerce in the Palestinian universities in the Gaza Strip. A comprehensive survey method was used due to the small size of the community, and the questionnaire was distributed among the study population equal to (67) members, and (63) response rate (94%) was recovered from the total distributed questionnaires, and the following table shows the number and characteristics of the study sample:

Table 1: The functional and personal characteristics of the study sample

Statement		**Frequency**	**Ratio%**
Qualified scientific	M.A.	24	38.1
	PhD	39	61.9
Scientific specialization	lecturer	24	38.1
	Assistant Professor	28	44.4
	Co-professor	7	11.1

	Professor Dr	4	6.4
Years of Experience	From 5 to 10 or less	17	27.0
	From 11 to 15 or less	2 5	39.7
	More than 15	21	33.3
The total		**63**	**100 %**

Source: Prepared by the researchers based on the questionnaire data 2020

From the previous table it is clear that:

- (38.1%) of the study sample has a master's degree, while the percentage of those with a doctorate degree is (61.9%). It is evident from the above results that the study sample of PhD holders is the largest outcome, and this is reflected in the quality of the respondents 'answers to the study tool being Holders of high academic qualifications and are aware of the concept of computational computing and the extent to which it can be used in accounting education.
- A percentage of (38.1%) of the study sample hold a lecturer's degree, while it amounted to (44.4%) of those holding an assistant professor's degree, while its percentage was (11.1%) of those who hold the rank of associate professor, and the percentage (6.4%) hold Professor degree. The previous results indicate that the study sample is of those with high academic degrees, and this enables them to answer the study questions with high accuracy, efficiency and professionalism, which is directly reflected on the results of the study in terms of the quality of its outputs and its realism.
- (27%) of the study sample had years of service from 5 to 10 years or less, while the percentage for the group was from 11 to 15 years and less (39.7%), while the percentage (33.3%) for those whose years of service was more than 15 years. The results reflect the diversity of the respondents' years of experience, which ensures that the opinions of different age levels are recognized with the various accumulated experiences that make them able to form more accurate positive or negative opinions about the subject of the study.

Study tool

To learn about the role of using cloud computing in improving the quality of accounting education in Palestinian universities in light of the Covid-19 pandemic, researchers prepared a questionnaire whose design was based on a set of questions they had from reading previous research papers and studies that dealt with the subject of the study and whose answer covers verification of the study hypotheses are correct or not, as the questionnaire was divided into two parts as follows:

- ❖ The first section: It consists of the demographic data of the study population, and it consists of (3) paragraphs.
- ❖ Section Two: It was divided into four areas as follows:

The first axis: There is a role for using cloud computing in accounting education on developing the professional and technological skills of students in light of the Covid-19 pandemic, and it consists of (7) paragraphs.

- The second axis: There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic, and it consists of (6) items.
- The third axis: There are obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic, and it consists of (6) paragraphs.
- The fourth axis: There are proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic, and it consists of (7) paragraphs.

The scale used in the study

The researchers adopted the use of the (five-point Likert) scale to determine the relative weights, and to judge the direction of the answers and the degree of approval for each paragraph and each field of the questionnaire. The weights range from (1) to (5) so that the degree of (5) for the response is (very large) while indicating Response (1) to a degree of response (very little), and therefore the relative weight of each score according to the following table:

Table 2: The degrees of the five Likert scale

Degree of approval	Very High	High	Medium	Low	Very Low
Class	5	4	3	2	1
The arithmetic mean	4.20 - 5	3.40 - 4.19	2.60 - 3.39	1.8 - 2.59	1- 1.79
Relative weight	Greater than 84%	68% - 83.9%	52% - 67.9%	36% - 51.9%	Less than 36%

Source: Likert 1932.

Validity and reliability of the study instrument:
It means that the questionnaire questions that have been formulated measure what they are designed to measure, as is the validity of the questionnaire's inclusion of all elements that should appear in the analysis on the one hand, and the clarity of its paragraphs and vocabulary on the other hand, so that it is understandable to everyone who uses it, and the researchers measured the validity of the questionnaire in two ways: -

1- The veracity of the arbitrators (apparent honesty): in order to verify the apparent validity of the questionnaire, it was presented to a group of arbitrators, and in light of the opinions of the arbitrators, the paragraphs of the questionnaire were modified to suit the purpose for which they were designed.
2- Verify the measurement:

A- **The internal consistency of the paragraphs of the questionnaire**: The researcher calculated the internal consistency of the paragraphs of the questionnaire on the exploratory research sample of (30) single size, by calculating the correlation coefficient between each paragraph of the field of the questionnaire and the total degree of the field itself.

B- **The structural validity of the questionnaire domains**: The constructive validity is considered one of the measures of the validity of the tool, which measures the extent to which the objectives that the tool wants to reach has been achieved, and shows the extent to which each field of study is related to the total degree of the paragraphs of the questionnaire as follows:

1. Measurement of the correlation coefficient of the first axis:
Table 3: shows the correlation coefficient for the first axis of the questionnaire at a significance level of 0.05, as the probability value is less than (0.05).

Statement	Correlation coefficient	The probability value
The use of cloud computing in accounting education leads to the professional development of students Graduates, especially in light of the Covid-19 pandemic.	0.6980	0.000
The use of cloud computing in accounting education helps develop skills Technology for students to suit the requirements of the labor market in light of the Covid-19 pandemic.	0.5930	0.000
The use of cloud computing helps in developing an e-accounting education strategy In light of the Covid-19 pandemic.	0.8030	0.000
The use of cloud computing makes accounting education more versatile and powerful In light of the Covid-19 pandemic.	0.7650	0.000
The use of cloud computing in accounting education provides a technological educational environment Fit and fit the requirements and needs of students in light of the Covid-19 pandemic.	0.7810	0.000
The use of cloud computing in accounting education helps faculty members and students To be able to access and retrieve their files and applications at any time and from anywhere in the midst of a pandemic Covid-19.	0.6580	0.000

The use of cloud computing in accounting education helps improve educational attainment For students, by obtaining the most useful information, especially in light of a pandemic Covid-19.	0.6380	0.000

**** Correlation is significant at 0.01 level**

*** Correlation is significant at the 0.05 level**

2. Measurement of the correlation coefficient for the second axis:

Table 4: shows the correlation coefficient for the second axis of the questionnaire at a significance level of 0.05, since the probability value is less than (0.05).

Statement	**Correlation coefficient**	**The probability value**
Availability of information technology infrastructure in Palestinian universities helps to: The use of cloud computing in accounting education in light of the Covid-19 pandemic.	0.6800	0.000
There are communication networks via the Internet available in Palestinian universities that help to: The use of cloud computing in accounting education in light of the Covid-19 pandemic.	0.7530	0.000
There are computer laboratories and electronic programs in Palestinian universities that help to use Cloud computing in accounting education in light of the Covid-19 pandemic.	0.7650	0.000
Faculty members are located in universities Palestine helps use cloud computing in accounting education in light of a pandemic Covid-19.	0.7460	0.000
There are a number of specialists and technicians in programming and technology in Palestinian universities Helping to use cloud computing in accounting education in light of the Covid-19 pandemic.	0.7220	0.000
There is a possibility to use cloud computing service providers to empower universities Palestinian from using the resources available in the servers more efficiently.	0.7270	0.000

**** Correlation is significant at 0.01 level**

*** Correlation is significant at the 0.05 level**

3. Measurement of the correlation coefficient for the third axis:
Table 5: shows the correlation coefficient for the third axis of the questionnaire at a significance level of 0.05, since the probability value is less than (0.05).

Statement	**Correlation coefficient**	**The probability value**
Weakness in the required technological skills and sufficient knowledge of faculty and students The crisis of using cloud computing in accounting education, especially in light of the Covid-19 pandemic.	0.8230	0.000
Non Palestinian universities are ready to use cloud computing in accounting education Under the pretext of lack of reliability in the services provided by cloud computing.	0.7720	0.000
Weakness in the infrastructure for using cloud computing in accounting education is difficult to provide hardware, electronic software and high-quality and fast communication networks in Palestinian universities.	0.8600	0.000

Fear of using cloud computing in accounting education, inability to protect Information and data stored from the hack.	0.7290	0.000
Non Palestinian universities are ready to use cloud computing services in education Al-Mohasibi, for fear of the non-commitment of service providers to the continuity of its provision.	0.7490	0.000
There is a gap in face-to-face accounting education in the contents of accounting courses that do not Compatible with the use of cloud computing services in electronic accounting education.	0.7220	0.000

**** Correlation is significant at 0.01 level**

*** Correlation is significant at the 0.05 level**

4. Measurement of the correlation coefficient of the fourth axis:

Table 6: shows the correlation coefficient for the fourth axis of the questionnaire at a significance level of 0.05 since the probability value is less than (0.05).

Statement	**Correlation coefficient**	**The probability value**
Redesigning the accounting education system to suit the requirements of using computing services Cloud in light of the Covid -19 crisis.	0.7710	0.000
Enhancing the capacity of faculty members and students through training on the use of services Cloud computing in online accounting education in light of the Covid -19 crisis.	0.7940	0.000
Increase financial allocations within universities' budgets to finance the use of computing services Cloud in accounting education in light of the Covid -19 crisis.	0.5620	0.000
Designing and updating the contents of accounting courses in line with the use of computing services The cloud to improve the quality of graduate students to suit the requirements of the labor market.	0.8600	0.000
Encouraging Palestinian universities to use cloud computing services to keep pace with progress Technology in this field to make it in the fore among world universities in the field Electronic accounting education, especially in light of the Covid -19 crisis.	0.7080	0.000
Development of the infrastructure of modern hardware and e-learning programs in The field of accounting education and advanced and high-quality communication networks capable of Ensure communication and confidentiality of information and stored data.	0.7790	0.000
Increasing the financial incentives for faculty members to encourage them to use computing services Cloud in accounting education in light of the Covid -19 crisis.	0.7350	0.000

**** Correlation is significant at 0.01 level**

*** Correlation is significant at the 0.05 level**

- **The stability of the paragraphs of the questionnaire**: the stability of the questionnaire is intended to be the stability of the results of the questionnaire and not to change it significantly if it is redistributed to individuals several times during certain periods of time. Where the reliability coefficients for each axis of the resolution ranged between (0.827 - 0.867), while the validity coefficients for each axis of the questionnaire ranged between (0.909 - 0.931), which indicates the validity of the scale to measure the below mentioned axes. Thus, the researchers adopted the questionnaire as a tool to collect data and to answer The study hypotheses and questions, as shown in the following table:

Table 7: Scale validity coefficients between the paragraphs of the axes of the questionnaire and the total score

The axes	**Number of paragraphs**	**Factor Persistence**	**Factor Honesty Constructivist**
There is a role for using cloud computing in accounting education to develop the professional and technological skills of students in light of the Covid-19 pandemic.	7	0.827	0.909
There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.	6	0.831	0.912
There are obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic	6	0.867	0.931
There are proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic	7	0.859	0.927
Total score for all axes	**26**	**0.854**	**0.924**

Source : Preparation of researchers based on the questionnaire data. 2020

Analyzing and testing the study hypotheses and answering its questions:

In order to interpret the results of the study and judge the level of response, the researchers relied on arranging the arithmetic averages at the level of fields and the level of paragraphs in each field. The researchers determined the degree of approval according to the criterion adopted for the study.

The single sample t test (One Sample T test) was used to analyze the items of the questionnaire, and the paragraph is considered positive in the sense that the sample members agree on its content if the calculated t value is greater than the tabular t value equal to 1.97 or the probability value is less than (0.05) and the relative weight Greater than (60%), and the paragraph is considered negative, meaning that the sample members do not agree with its content if the calculated t value is less than the tabular t value of 1.97 (or the probability value is greater than 0.05 and the relative weight is less than 60%).

For the analysis of the questionnaire items, the arithmetic averages, standard deviations and the relative weight were calculated, as well as the (T) test for one sample (One Sample T test) for analyzing the questionnaire items and testing the hypotheses, as shown below:

1. **Analysis of the paragraphs of the first hypothesis: "There is a role for using cloud computing in accounting education to develop the professional and technological skills of students in light of the Covid-19 pandemic."**

Table 8: Paragraphs analyzing the role of using cloud computing in accounting education to develop students' professional and technological skills

S.N.	**Paragraph**	**Average arithmetic**	**Standard deviation**	**Relative average arithmetic mean**	**T Value**	**Sig. Value**	**Rank**
1	The use of cloud computing in accounting education leads to	3.85	0.659	77.02	8.86	0.000	4

	Professional development for graduate students, especially in light of the Covid-19 pandemic.						
2	The use of cloud computing in accounting education helps Developing students' technological skills to suit the requirements of the labor market in light of the Covid-19 pandemic.	4.09	0.686	81.70	10.84	0.000	2
3	The use of cloud computing helps in setting an education strategy Electronic accounting in light of the Covid-19 pandemic.	3.96	0.721	79.15	9.10	0.000	3
4	The use of cloud computing makes for an accounting education More diverse and powerful, especially in light of the Covid-19 pandemic.	3.68	0.911	73.62	5.12	0.000	6
5	The use of cloud computing in accounting education provides an environment Educational technology that suits the requirements and needs of students in light of the Covid-19 pandemic.	3.72	0.949	74.47	5.23	0.000	5
6	The use of cloud computing helps in teaching accounting members Faculty and students can access and retrieve their files and applications at anytime From anywhere in the midst of the Covid-19 pandemic.	4.17	0.816	83.40	9.83	0.000	1
7	The use of cloud computing in accounting education helps Improving students 'educational attainment by obtaining the most useful information Especially in light of the Covid-19 pandemic.	3.51	0.930	70.21	3.77	0.000	7
Total		**3.85**	**0.573**	**77.08**	**10.21**	**0.000**	**-**

Source: Preparation of researchers based on the questionnaire data, 2020.

From the previous table, the following can be drawn:

- The overall arithmetic mean reached (3.85), which is greater than the default value, the number (3), i.e. greater than (60%), while the relative weight of the first hypothesis was (77.08%), and the probability value was (0.00), which is less than (0.05) This means that the responses of the respondents in this area were positive to a "large" degree.
- Paragraph (6) "The use of cloud computing in accounting education helps faculty members and students to access and retrieve their files and applications at any time and from anywhere in light of the Covid-19 pandemic" came first in the ranking of the paragraphs of this field, where the average was The arithmetic (4.17), which is greater than the number (3), i.e. greater than (60.0%), while the relative weight is (83.40%), and the probability value is

equal to (0.00), which is less than (0.05). That indicates the opinions in this paragraph were positive according to the respondents, and that the degree of support for this paragraph is "great".

- The least paragraph was paragraph (7), which is: “The use of cloud computing in accounting education helps improve students’ educational attainment by obtaining the largest amount of useful information, especially in light of the Covid-19 pandemic,” where the arithmetic average reached (3.51), which is the largest. Of the number (3), i.e. greater than (60.0%), while the relative weight was (70.21%), and the probability value is equal to (0.00), which is less than (0.05)? This indicates that the opinions in this paragraph are positive, and that the degree of support for this paragraph is "great".

We conclude from the above that all the answers of the study sample showed a general trend towards approving to a large extent all the paragraphs of the first hypothesis and thus accepting the first hypothesis, which states: “There is a role for using cloud computing in accounting education to develop the professional and technological skills of students in light of the Covid-19 pandemic.” This is shown through the general arithmetic mean of (3.85), with a relative weight of (77.08%), with a general difference coefficient of (0.573), and that the value of the (t) test was a positive value of (10.21). The researchers attribute this to the fact that the use of cloud computing in accounting education has an effective role in developing students' professional and technological skills in light of the Covid-19 pandemic.

2. Analysis of the second hypothesis paragraphs:“ There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.”

Table 9: Analysis of the paragraphs of the possibilities of the available at the universities of Palestinian use computing cloud in education accounting

S.N.	Paragraph	Average arithmetic	Standard deviation	Relative average arithmetic mean	T Value	Sig. Value	Rank
1	Availability of information technology infrastructure in universities Palestine helps use cloud computing in accounting education in light of a pandemic Covid-19.	3.66	0.841	73.19	5.38	0.000	5
2	There are communication networks via the Internet available in universities Palestine helps use cloud computing in accounting education in light of a pandemic Covid-19.	3.72	0.826	74.46	6.00	0.000	3
3	There are computer labs and electronic programs in universities Palestine helps use cloud computing in accounting education in light of a pandemic Covid-19.	3.57	0.853	71.48	4.62	0.000	6
4	There are body members Teaching in Palestinian universities helps to use cloud computing in education Accounting in light of the Covid-19 pandemic.	3.72	0.800	74.46	6.20	0.000	3
5	A number of specialists and technicians in programming and technology are available at Palestinian universities help	3.93	0.646	78.69	9.81	0.000	1

	to use cloud computing in accounting education The shadow of the Covid-19 pandemic.						
6	There is a possibility to use cloud computing service providers to enable Palestinian universities to use the resources available in the servers with better efficiency.	3.85	0.780	77.02	7.48	0.000	2
Total		**3.74**	**0.578**	**74.90**	**8.83**	**0.000**	**-**

Source: Prepared by the researchers based on the questionnaire data, 2020.

From the previous table, the following can be drawn:

- The overall arithmetic mean reached (3.74), which is greater than the default value, the number (3), i.e. greater than (60%), while the relative weight of the first hypothesis was (74.90%), and the probability value was (0.00), which is less than (0.05) This means that the responses of the respondents in this area were positive to a "large" degree.
- Paragraph (5) “There are a number of specialists and technicians in programming and technology in Palestinian universities that help to use cloud computing in accounting education in light of the Covid-19 pandemic” came first in the arrangement of the paragraphs of this field, where the average was (3.93) It is greater than the number (3), i.e. greater than (60.0%), while the relative weight is (78.69%), and the probability value is equal to (0.00), which is less than (0.05). This indicates that the opinions in this paragraph were positive according to the respondents, and that the degree of support for this paragraph is "great".
- The lowest paragraphs were Paragraph (7), which is: “There are computer laboratories and electronic programs in Palestinian universities that help to use cloud computing in accounting education in light of the Covid-19 pandemic,” where the arithmetic average reached (3.57), which is greater than the number (3) i.e. Greater than (60.0%), while the relative weight was (71.48%), and the probability value is equal to (0.00), which is less than (0.05). This indicates that the opinions in this paragraph are positive, and that the degree of support for this paragraph is "great".

We conclude from the above that all the answers of the study sample showed a general trend towards approving to a large degree all the paragraphs of the second hypothesis and thus accepting the second hypothesis, which states: **“There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.”** This is shown through the general arithmetic mean of (3.74), with a relative weight of (74.90%), with a general difference coefficient of (0.578), and that the value of (t) test was a positive value of (8.83), and the value of the significance level was sig (0.000) The researchers attribute this to the fact that there are capabilities in Palestinian universities that help to use cloud computing in accounting education, especially in light of the Covid-19 pandemic.

3. Analysis of the third hypothesis paragraphs:“ There are obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.”

Table 10 : Paragraphs analyzing the obstacles and challenges facing Palestinian universities to use cloud computing in accounting education

S.N.	Paragraph	Average arithmetic	Standard deviation	Relative average arithmetic mean	T Value	Sig. Value	Rank
1	Lack of required technological skills and sufficient knowledge For faculty members and students needed to use cloud computing in education	3.89	0.961	77.87	6.38	0.000	1

	Accounting, especially in light of the Covid-19 pandemic.						
2	Palestinian universities are unwilling to use cloud computing In accounting education under the pretext of lack of reliability in the services provided by computing the cloud.	3.70	0.907	74.04	5.31	0.000	4
3	Poor infrastructure for the use of cloud computing in education Accounting for the difficult availability of electronic hardware and software and communication networks are superior Quality and speed in Palestinian universities.	3.89	0.914	77.87	6.70	0.000	1
4	Fear of using cloud computing in accounting education Inability to protect stored information and data from hacking.	3.62	0.968	72.34	4.37	0.000	5
5	Palestinian universities are unwilling to use computing services cloud in accounting education for fear of non-commitment by service providers in continuity Present it.	3.53	0.975	70.63	3.74	0.001	6
6	There is a gap in the face accounting education in the course contents Accounting that is not appropriate for the use of cloud computing services in education Electronic Accounting.	3.87	0.969	77.44	6.17	0.000	3
Total		**3.75**	**0.735**	**75.03**	**7.01**	**0.000**	**-**

Source: Prepared by the researchers based on the questionnaire data, 2020.

From the previous table, the following can be drawn:

- The overall arithmetic mean was (3.75), which is greater than the default value, the number (3), i.e. greater than (60%), while the relative weight of the first hypothesis reached (75.03%), and the probability value was (0.00), which is less than (0.05). This means that the responses of the respondents in this area were positive to a "large" degree.
- Paragraph (3) “The weakness of the infrastructure for the use of cloud computing in accounting education due to the difficulty in the availability of hardware, electronic programs, and high-quality and fast communication networks in Palestinian universities” came first in the ranking of the paragraphs of this field, as the average reached (3.89), which is greater than the number (3) Any greater than (60.0%), while the relative weight was (77.87%), and the probability value is equal to (0.00) and it is less than (0.05). This indicates that the opinions in this paragraph were positive according to the respondents, and that the degree of support for this paragraph is "great".
- Paragraph (5) was the least of the paragraphs, which are: Palestinian universities ’unwillingness to use cloud computing services in accounting education for fear of non-commitment by service providers to the continuity of

their provision. The arithmetic average reached (3.53), which is greater than the number (3), i.e. greater than (60.0%), while the relative weight was (70.63%), and the probability value is equal to (0.00), which is less than (0.05). This indicates that the opinions in this paragraph are positive, and that the degree of support for this paragraph is "great".

We conclude from the above that all the answers of the study sample showed a general trend towards approving to a large extent all the paragraphs of the third hypothesis and thus accepting the third hypothesis, which states: “There are obstacles and challenges facing Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.” This is through the general arithmetic mean of (3.75), with a relative weight of (75.03%), with a general difference coefficient of (0.735), and that the value of (t) test was a positive value of (7.01), and the value of the level of significance sig was (0.000) . The researchers attribute this to the fact that there are many obstacles and challenges that Palestinian universities may face in using cloud computing in accounting education, especially in light of the Covid-19 pandemic, and they were addressed by the researchers in the theoretical side.

4. Analysis of the fourth hypothesis paragraphs: "There are proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic."

Table :11 An analysis of the paragraphs of the proposed mechanisms for using cloud computing in accounting education in Palestinian universities

S.N.	Paragraph	Average arithmetic	Standard deviation	Relative average arithmetic mean	T Value	Sig. Value	Rank
1	Redesigning the accounting education system to suit the requirements Use of cloud computing services in light of the Covid-19 crisis.	3.96	0.859	79.14	7.64	0.000	7
2	Enhancing the capacity of faculty members and students through training on The use of cloud computing services in accounting education via the Internet in light of a crisis Covid-19.	4.19	0.680	83.83	12.01	0.000	3
3	Increase financial allocations within universities' budgets to finance The use of cloud computing services in accounting education in light of the Covid-19 crisis.	4.19	0.851	83.83	9.60	0.000	3
4	Designing and updating the contents of accounting courses to suit Using cloud computing services to improve the quality of graduate students to suit the requirements of Labor market.	4.21	0.778	84.25	10.68	0.000	2
5	Encouraging Palestinian universities to use computing	4.17	0.637	83.40	12.60	0.000	5

	services Cloud to keep up with technological advances in this field to make it in the forefront among International universities in the field of electronic accounting education, especially in light of the Covid-19 crisis.						
6	Infrastructure development of hardware and educational software modern electronic education in accounting education and advanced communication networks and high quality that is able to secure communication and confidentiality of the information and stored data.	4.30	0.623	85.95	14.29	0.000	1
7	Increase the material incentives for faculty members to encourage them to the use of cloud computing services in accounting education in light of the Covid-19 crisis.	4.13	0.769	82.55	10.04	0.000	6
Total		**4.16**	**0.550**	**83.28**	**14.50**	**0.000**	-

Source: Prepared by the researchers based on the questionnaire data, 2020.

From the previous table, the following can be drawn:

- The overall arithmetic mean reached (4.16), which is greater than the default value, the number (3), i.e. greater than (60%), while the relative weight of the first hypothesis was (83.28%), and the probability value was (0.00), which is less than (0.05) This means that the responses of the respondents in this area were positive to a "large" degree.
- Paragraph (6) “Infrastructure development of modern electronic educational hardware and programs in the field of accounting education and advanced and high-quality communication networks capable of securing communication and confidentiality of information and stored data” came first in the ranking of the paragraphs of this field, where the arithmetic average reached (4.30 It is greater than the number (3), i.e. greater than (60.0%), while the relative weight is (85.95%), and the probability value is equal to (0.00), which is less than (0.05). This indicates that the opinions in this paragraph were positive according to the respondents, and that the degree of support for this paragraph is "great".
- The least paragraphs were paragraph (1), which is: “Redesigning the accounting education system to suit the requirements of using cloud computing services in light of the Covid-19 crisis,” where the arithmetic average reached (3.96), which is greater than the number (3), which is greater than (60.0%), While the relative weight was (79.14%), and the probability value is equal to (0.00), which is less than (0.05). This indicates that the opinions in this paragraph are positive, and that the degree of support for this paragraph is "great".

We conclude from the above that all the answers of the study sample showed a general trend towards approval to a large extent on all paragraphs of the fourth hypothesis and thus acceptance of the fourth hypothesis, which states: **“There are proposed mechanisms for using cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic.”** This is through the general arithmetic mean of (4.16), with a relative weight of (83.28%), with a general difference coefficient of (0.550), and that the value of (t) test was a positive value of (14.50), and the value of the significance level was (0.000). The researchers attribute this to the fact that there are many proposed mechanisms that could contribute to the use of cloud computing in accounting education in Palestinian universities in light of the Covid-19 pandemic, and they have been clarified in the theoretical side.

Study results and recommendations

Results: The researchers reached the following results:

- The use of cloud computing in accounting education helps faculty members and students to access and retrieve their files and applications at any time and from anywhere in light of the Covid-19 pandemic.
- The use of cloud computing in accounting education helps to develop students' technological skills to suit the requirements of the labor market in light of the Covid-19 pandemic.
- The use of cloud computing in accounting education provides a technological educational environment that suits the requirements and needs of students in light of the Covid-19 pandemic.
- There are a number of specialists and technicians in programming and technology in Palestinian universities that help to use cloud computing in accounting education in light of the Covid-19 pandemic.
- There are possibilities available in Palestinian universities to use cloud computing in accounting education in light of the Covid-19 pandemic.
- There is a possibility of using cloud computing service providers to enable Palestinian universities to use the resources available in the servers with better efficiency.
- Faculty members in the accounting departments of Palestinian universities are considered an important element to help use cloud computing in accounting education in light of the Covid-19 pandemic.
- Online communication networks available in Palestinian universities are helping to use cloud computing in accounting education in light of the Covid-19 pandemic.
- Weakness in the required technological skills and sufficient knowledge of faculty members and students in Palestinian universities, which are necessary for the use of cloud computing in accounting education, especially in light of the Covid-19 pandemic.
- The weakness of the infrastructure for using cloud computing in accounting education due to the difficulty of availability of electronic devices, programs, and high-quality and fast communication networks in Palestinian universities.
- There is a gap in face-to-face accounting education in the contents of accounting courses that are not commensurate with the use of cloud computing services in e-accounting education.
- Palestinian universities are unwilling to use cloud computing services in accounting education for fear of the lack of commitment from service providers to the continuity of their provision, as well as the inability to protect stored information and data from penetration.

10. Recommendations

Based on the previous results, the researchers recommend the following:

- Working for Palestinian universities to adopt the use of cloud computing for its great role in making e-learning more diverse and powerful, especially in light of the Covid-19 pandemic.
- The necessity of using cloud computing in accounting education in Palestinian universities for its role in developing the professional and technological skills of students, and improving their educational attainment by obtaining the largest amount of useful information, especially in light of the Covid-19 pandemic.
- Development of the infrastructure of modern electronic educational devices and programs in the field of accounting education and advanced and high-quality communication networks capable of securing communication and the confidentiality of information and stored data.
- Redesigning the accounting education system, and updating the contents of accounting courses in the accounting departments in Palestinian universities in line with the requirements of using cloud computing services to improve the quality of graduate students to match the requirements of the labor market.
- Enhancing the capacity of faculty members and students in accounting departments in Palestinian universities through training on using cloud computing services in online accounting education in light of the Covid-19 crisis.
- Encouraging Palestinian universities to use cloud computing services to keep pace with technological progress in this field to make them in the forefront among international universities in the field of electronic accounting education, especially in light of the Covid-19 crisis.
- Increase financial allocations within the budgets of Palestinian universities to finance the use of cloud computing services in accounting education in light of the Covid-19 crisis.

- Increasing the financial incentives for faculty members in accounting departments in Palestinian universities to encourage them to use cloud computing services in accounting education in light of the Covid-19 crisis.
- Encouraging Palestinian universities to adopt the use of cloud computing services in accounting education, removing suspicion and fear of non-commitment by service providers in providing them with continuity, and increasing confidence in the ability to protect stored information and data and protect them from penetration.

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