The quality of e-learning outcomes for money in Palestinian universities in light of international quality standards

جودة مخرجات التعلم الإلكتروني مقابل المال في الجامعات الفلسطينية في ظل معايير الجودة العالمية

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Abstract: The research aimed to identify the standards of quality for money, and the indicators that universities have followed to achieve the quality of infrastructure and software in e-learning. Data were collected using interviews (from January, 1 to August, 8) during the 2021/2022 academic year. The interviews included a number of questions within the quality-for-money standard. The study population consisted of e-learning departments in a number of Palestinian universities and 6 employees in e-learning departments participated in the research. The researchers adopted a qualitative-descriptive approach, and data analysis was conducted using inductive objective analysis. The results of the current study showed that the infrastructure that constitutes the core basis of e-learning has not reached a reasonable level in Palestinian universities due to obstacles beyond control; the results also showed that the Internet has become an essential partner for educational institutions in their educational function because the education sector is not isolated from the digital revolution that swept the world. Therefore, it is considered a long-term investment if it is linked to the sources of economic growth in any country. In order to achieve the goals of e-learning, improve it and apply it in the best way, it must be subject to the principles and quality standards through which the obstacles that prevent the achievement of its goals are identified.

Keywords: e-learning, quality standards, quality of outputs.

المستخلص: يهدف البحث الى التعرف على معيار الجودة مقابل المال، والمؤشرات التي اتبعتها الجامعات لتحقيق جودة البنى التحتية والبرمجيات في التعليم الالكتروني. تم جمع البيانات باستخدام المقابلات التي بدأت في شهر 1 يناير وانتهت في شهر 8 أغسطس خلال العام الدراسي 2021/ 2022، تضمنت المقابلات عددا من الأسئلة ضمن معيار الجودة مقابل المال، تكون مجتمع الدراسة من دوائر التعلم الإلكتروني في عدد من الجامعات الفلسطينية وهي: الجامعة 1، والجامعة 2، والجامعة 3، شارك في البحث 6 موظفين في مراكز التعلم الالكتروني. تناول البحث هذه المسألة باستخدام المنهج الوصفي النوعي، وتم إجراء تحليل البيانات باستخدام التحليل الموضوعي الاستقرائي. تُظهر نتائج الدراسة الرئيسية أن البنية التحتية التي تشكل القاعدة الأساسية للتعليم الالكتروني لم تصل للمستوى المعقول في الجامعات الفلسطينية بسبب عوائق خارجة عن السيطرة، وأظهرت النتائج ان شبكة الانترنت أصبحت شريك أساسي للمؤسسات التعليمية

في وظيفتها التربوية. ان قطاع التعليم ليس بمعزل عن الثورة الرقمية التي اجتاحت العالم، وهو يعد استثمار طويل الأمد ان تم ربطه بمصادر النمو الاقتصادي في الدولة، ولتحقيق اهداف التعليم الالكتروني وتحسينه وتطبيقه بالصورة الأفضل، يجب اخضاعه لمبادئ ومعايير الجودة التي من خلالها يتم التعرف على المعوقات التي تحول دون تحقيق أهدافه.

الكلمات المفتاحية: معايير جودة، جودة مخرجات، التعليم الالكتروني، جامعات.

INTRODUCTION:

The rapid development in the field of information and communication technology, witnessed by the twenty-first century, has led to the emergence of many systems and tools that have revolutionized the exchange and transfer of knowledge in various sectors (e.g., education) in light of this technical progress and the flood of knowledge in all fields. E-learning has been one of the options offered by universities since the 1990s, as it witnessed an increase in both software and equipment including the emergence of e-learning management, but its structure and tools were complex to use (Vollmer, 2003). Darab & Montazer (2011) defined E-Learning as an innovative approach to appropriately facilitating education that uses digital resources along with other educational methods delivered through an open and flexible education system. Moreover, it is designed and equipped with interactive media that people can interact with anywhere at any time. Successful e-learning is a set of prior actions including setting up the necessary infrastructure to ensure that a useful and efficient teaching/learning process is maintained and continuous technical support is provided.

Improving the quality of e-learning is based on constructivist, cognitive theories and applies the principles of active and effective learning in contrast to traditional education systems that apply behavioral theories that stress the significance of providing and preserving information on the part of the teacher. E-learning is based on the principle of equality and justice in evaluating the student's scientific level, away from any psychological influences or individual differences (Stephenson, 2001).

The most prominent obstacles to e-learning include the lack of effective leadership, the lack of appropriate training, and the lack of the necessary equipment and technical support (Earle, (2002). Investment in education, as the ideal treasure, has begun since 1960s; therefore, keeping pace with the rapid developments in information and communication technology and dealing with it efficiently is one of the most important factors in accessing the world of knowledge and technology. Among the most significant challenges in the path of e-learning according to the Palestinian Central Bureau of Statistics, 2018, is the unwillingness of the majority of Palestinian society to technically enter the e-learning path (Abu Hatab, 2021). Al Mobaideen (2021) argued that the cost of early investment in information security and protection systems and digital infrastructures is considered as a low compared to the cost of processing information loss or system penetration, and that investing in information security is not a luxury, but rather an integral part of information systems as well as the cornerstone of ensuring business continuity. Shaheen (2016) emphasized that higher education in Palestine suffers from two basic interrelated problems. The first is related to funding, and the other is related to the quality of higher education. Higher education institutions face a deficit in their budgets, and the delay in disbursing university allocations leads to a permanent shortage and inability to cover university expenses, estimated

at $70 million annually, which confirms the Palestinian higher education's need for stable and sufficient sources of financial support.

Kafi (2009) added that the lack of clarity of e-learning systems, the lack of experts in e-learning management, and the lack of privacy and confidentiality could lead to the penetration of content and exams. Al-Hindi (2021) pointed out that the privacy of information has been exposed to danger, the spread of communication chaos, and the risks resulting when using the communication network. With the bad spread of digital applications, the personality of university students and their moral and scientific formation have been affected in light of a digital world devoid of rules associated with negative and positive behaviors of the digital citizen. This reflects the need to protect and fortify them. The problems of penetration and plagiarism are among the biggest challenges that face the credibility of the educational process outcomes. In the absence of direct observation of students during exams, cheating spread and negatively affected the credibility of the learning process and its results as well as the academic reputation of institutions (Shawabkeh, 2020). The concept of illiteracy is no longer linked to cultural ignorance or the inability to write and read, but rather to the extent of human knowledge of the modern language that helps them keep pace with digital means and software, and how to deal with the negative repercussions that accompany the applications of electronic culture in reality.

Al-Hilali (2020) indicated that investing in education programs enhances educational flexibility when students or faculty members cannot attend colleges, as was the case during the pandemic, and that education via online programs helps reduce the costs of the education system compared to traditional education. Al-Hindi (2021) emphasized the quality of the outputs in e-learning are related to information security as an indicator of the quality of education, as the problems of penetration and plagiarism are among the biggest challenges facing the credibility of the outputs of the educational process.

Kivisto and Pekkola, (2017) stated that the primary role of higher education institutions is to produce services related to each other to achieve the desired goals. The five dimensions of quality in higher education and the development of a framework for quality education by making use of the (Harvey & Green, 1993) framework were presented in management quality and conceptualization. The framework consists of five dimensions: The first dimension is "administrative quality as an exception/ distinction": This dimension deals with the appropriate budget for the level of resources and motivated and qualified personnel, which is linked to "tangible" factors such as the attractiveness and adequacy of facilities. The second dimension is "administrative quality as completeness/consistency": This dimension relates to the aspects of administrative work that must be reliable, accurate and accessible, and also takes into account the response or willingness of employees to help. The third dimension is "administrative quality as fit for purpose": it refers to the university's ability to achieve its mission and objectives through management. Moreover, it is about fulfilling the expectations of the internal and external users of any administrative service. The fourth dimension is "administrative quality as value for money": based on limited resources, including financial and human resources. Here, quality is defined as the ability to maximize the benefits of administrative services. The fifth dimension is "Administrative quality as transformation": Academic excellence is promoted along with financial success and student needs. Moreover, it is about fulfilling the

expectations of internal and external users of any administrative service. Adu-Oppong (2014) postulated that the development of an effective management system must greatly enhance quality assurance. Quality assurance is enhanced when those responsible are aware of their roles and must be effective planners, motivators, supervisors and communicators.

Review of literature

Daher et al, (2022) conducted the pandemic led to an increased demand for e-learning and e-assessment through technological means that ensure the provision of a direct line of communication with students, in order to ensure quality education., that ICT centers in universities should work hard to build a specialized technical support center to maintain and develop the existing infrastructure. In addition, these centers should provide continuous training courses on how to deal with the e-learning environment, in order to enhance learning at the university. Rabhi (2022) conducted a study about the administrative, technical, human, and educational obstacles; Hamdan et al., (2021) carried out a study and confirmed that the information technology infrastructure needed for the educational process parties is weak and in need of financial support. Al-Beddou (2022) provided a proposal for a model for evaluation under emergency conditions based on the philosophy of modern theories in education and the data and skills of the twenty-first century. Wijayanto, & Prabowo (2020) added there is an urgent need for digital security in light of the requirements of digital transformation in various educational institutions and the need to enhance digital security for university students in Egypt to meet the challenges of the digital revolution. Abbasi & Fodi (2020) highlighted a set of difficulties in obtaining devices in addition to the cost barrier. Abdul-Ghani (2021) came up with a list of global standards for the quality of university education from the point of view of experts and specialists, and Al-Khudari (2020) recommended increasing interest in Saudi universities and institutions so that they enhance their awareness in applying information security standards so that they can face any attack or unauthorized access to information systems.

Nyinkeu et al., (2018) sought to identify the concepts of cyber security that should be strengthened among IT students, and the importance of promoting the concepts of safe use of the internet. Kim et al, (2016) showed that educational competencies are an important and powerful mediator in the relationship between learning management systems and academic achievement. Michubu et al., (2017) found that services related to academic advising and financial funding were insufficient. In the study of Kivistö & Pekkola (2017), quality areas in higher education were analyzed in depth and the costs associated with management quality assurance were evaluated continuously. Adu-Oppong (2014) demonstrated that administrators have a pivotal influence on university policies, faculty morale, and the overall performance of the system.

The importance and objectives of the research

The research aimed to identify international quality standards in higher education, specifically the fourth criterion, which is quality for money, and the extent to which universities benefit from the experience of e-learning during the Corona pandemic, and the standards they followed to achieve the quality of infrastructure and software in e-learning. The current research may contribute to realizing the

importance of investing in e-learning, emphasizing the dissemination of electronic culture in society, in addition to helping decision makers to bring about positive change and balance between cost and resource use for faculty and students.

Statement of the problem:

Based on the theoretical literature and previous studies, including the (Kivistö & Pekkola, 2017) study, which was concerned with setting standards for the quality of e-learning management, this study came from the researcher's work as an academic in a Palestinian university - and her interest in studying the quality of e-learning. The fourth criterion, which is the quality of output for money, will be highlighted shown in (Kivistö & Pekkola, 2017). The following main question emerged from the problem:

What is the reality of the quality of e-learning management in Palestinian universities that aimed to achieve the quality of outputs for money in light of international quality standards from the point of view of e-learning management?

MATERIAL AND METHODS:

Research Design

The researcher contacted the e-learning centers in the Palestinian universities, the sample of the research, to request their approval to conduct a research that aims at identifying the extent to which the standards applied in universities match with the quality standard of outputs for money according to the (Kivisto & Pekkola, 2017).

INSTITUTIONAL REVIEW BOARD (IRB) — AAUP:

One of the strategic priorities of the Arab American University (AAUP) is scientific research, which is regarded as one of the main missions of the university. Since distinguished scientific research contributes to solving some problems of the society, AAUP is unceasingly endeavoring to fulfill the highest standards of the scientific research and excel at various fields of knowledge while adhering to the ethics of scientific research. **https://www.aaup.edu/Research/Institutional-Review-Board-IRB.**

Research requiring IRB approval:

- − Research involving human subjects;
- − Research using records gathered on human subjects;
- − Research involving human tissue collected at or sent to the institution. This includes research that falls into any of the following categories:
- − research conducted by University faculty, staff or students;
- − research performed on University premises;
- − research which involves University faculty, staff or students;
- − research which involves the completion of an award, degree or course;

–   research which involves multiple institutions in which the University is participating.

https://www-najah-edu.translate.goog/en/research/institutional-review-board-irb/?_x_tr_sl=en&_x_tr_tl=ar&_x_tr_hl=en&_x_tr_pto=wapp.

Upon signed the IRP ethical approval to conduct the study, interviews were conducted with the officials of the E-Learning Department in the universities. A number of interviews were conducted in a face-to-face manner and their responses were recorded; however, some interviews were conducted using ZOOM software due to the geographical distance. The study sample consisted of the interviewed persons, who are (6) employees of e-learning centers in three Palestinian universities. The study sample responses were divided into: University 1 (Employee 1, Employee 4), University 2 (Employee 2, Employee 5), University 3 (Employee 3, Employee 6), during the 2021/2022 academic year. All participants in the study had an average of 10 years of experience (8 to 18 years) in the field of e-learning.

Sample and Data Collection

The researcher depended on Kivisto and Pekkola (2017) heavily, then a set of interview questions were formulated as a main tool in the study to collect data. Illustrative tools will be used to help identify the variables and the relationships associated with the quality of outcomes in e-learning. In the Kivisto & Pekkola (2017) study, (5) standards for the quality of higher education were identified. In the current study, the standard of quality of outputs in exchange for money was taken as a tool for the study. The main study question and sub-questions were adapted accordingly, and the interviews were semi-structured as each started by raising general questions and then progressed to more specific questions such as: how could one search for the quality of the output required by balancing cost and resource use? What are the obstacles that the university faces in supporting infrastructure and information security?

Validity and reliability

With regard to the reliability of the research, the names of the classifications represented the terms for the category or any word synonymous with it, and these terms and their synonyms were arranged in a table with an example of each term. The validity of the research was confirmed by selecting employees from e-learning and focusing on the minute details in the field of the quality of outputs for money as a criterion of the quality of higher learning as shown in (Kivistö & Pekkola, 2017).

Analyzing of Data

In the current research, inductive reasoning was used due to its suitability for this type of studies in order to sort and classify the responses of the study sample, which focused on the minute details and categorized them into sub-categories.

By reviewing the table and the data received about the classifications and their sub-categories, it becomes clear that it is easy to extrapolate the results and reach the data.

Table (1). Codes and examples on the codes

Category	Symbols	Example
Financial support directed to the development of physical resources, such as infrastructure and networks	Smartboard, Spotted Amounts, Multimedia Tools, Financial deficit, scarcity of financial resources, expenditures, university allowances, financial crisis, government financial support, purchase of servers, weakness in the budget, weak funding, Ministry of Finance, securing needs, scarcity of material resources, raising the efficiency of a network, infrastructure, strong platform, weakness The Internet, communication technology and networks, the decline of government support.	"The university was exposed to financial hardship, so it reduced salaries to 70% refundable during the Corona pandemic, and allocated funds to support the academic process during the emergency phase." "The university has not been able to provide the tools and means such as a smart board and others due to the poor funding of the budgets needed for the e-learning project and the university's reliance on the Ministry of Finance, but it is trying to secure the needs of multimedia in order to be able to benefit from it in some electronic courses."
Software cost	Moodle Virtual lab, ZOOM Activity programs, electronic exams, safe browser, security software, technical software, powerful platform, fraud control software, software development, multimedia software, IT, legality, data security, name list, time limit, random questions, secure atmosphere, private account.	"The university has provided software for safe browsing, especially for the sensitivity of some colleges, such as the College of Medicine." "Academics demanded software to control fraud, but the university faced a budget problem." "Like any university institution, we are waiting for university allowances provided by the Ministry of Finance, which is going through a financial crisis due to the decline in international financial support for the government."
Information security cost	Accumulated financial deficit, poor confidence, access problems, legality, reservation, raising the efficiency and security of the network, funding obstacle, private account, hacking lectures, list of electronic exam names, plagiarism, free Moodle software, the internet, organizing the electronic class, performing the exam safely, external financing projects, the most powerful software.	"At the beginning of the e-learning experiment, Zoom lectures were hacked randomly, which led to a lack of confidence in the program, but later the problems of accessing synchronous lectures were controlled to ensure reliability and safety"

"The university considers data security as one of its priorities, but due to the limited resources provided for e-learning; it uses Moodle software as it is a free software"

Deductive reasoning was used to explain the responses of the study sample, as it was based on the fourth dimension of higher education quality standards as mentioned in (Kivistö & Pekkola, 2017).

RESULTS:

The research aimed to identify the extent to which the quality standard of outputs in exchange for money is applied. To verify this, officials of e-learning departments in Palestinian universities were interviewed because conducting interviews is believed to increases the reliability of the study; the researcher asked them a number of questions, then she discussed the responses and analyzed them qualitatively according to certain criteria.

With regard to the quality of the outputs required as a value for money, the researcher divided the responses into main categories namely: the financial support directed to the development of material resources such as infrastructure and networks. The other one is the cost of e-learning software and the cost of information security, specifically after the experience of e-learning during the Corona pandemic. Then, these categories were analyzed into more in-depth sub-categories for ease of analyzing the responses of the study sample.

The interviewee 1 said, "The university was exposed to a financial deficit, so it reduced salaries by 70% recovered during the Corona pandemic and allocated the sums to support the academic process during the emergency phase", Interviewee number 4 said "It also secured a number of support tools such as the smart board at the urgent request of professors".

Another interviewee 2 added, " The university is not currently based on the philosophy of e-learning, and that expenditures are increasing due to the scarcity of financial resources." While two interviewees 5, 3 "emphasized a weakness in the budget allocated to e-learning"; this was clear in as interviewee number 6 said, " Like any university institution, we are waiting for university allocations provided by the Ministry of Finance, which is going through a financial crisis due to the decline in international financial support for the government". Interviewee number 3 added "The university was unable to provide tools such as smart boards and others due to poor funding of the necessary budgets for the e-learning project and the university's reliance on the Ministry of Finance", Another interviewee 6 added "The university is trying to secure the needs of multimedia such as Camtasia program that you can benefit from in some electronic courses".

The interviewees confirmed that the universities face the problem of financing and maintaining networks, and that they are working to raise the efficiency of the network through the scarce revenues available in light of an accumulated financial deficit. The first interviewee added, "The university is working in its next strategic plan on infrastructure and the purchase of servers that support the provision

of a strong platform for education in the electronic system to produce better education in the future"; Interviewee number 4 said "The university is trying to increase the number of students and the activities that can secure revenues for the university." While interviewees 2, 3 said "Emphasized the weakness of the internet'. Interviewee number 5 stated, "The internet is weak due to the Israeli occupation", Interviewee number 5 added "The internet needs to be developed to cope with the global development and revolution in communications and networking technology".

Regarding the importance of information security, the interviewees reported confidence in the Zoom synchronous class programs". The interviewee 3 added, "At the beginning of the e-learning experience, Zoom lectures were hacked randomly, which led to a lack of confidence in the program", Interviewee number 6 added "Later access problems were controlled to ensure reliability and safety. Students need to be aware of cyber security."

With regard to network security in universities, the interviewees emphasized that data security is one of its priorities, and provided support according to the allowed budget to support and preserve the legitimacy of access to the university's network. Interviewee 2 added that "The university is trying to raise the efficiency and security of network software on an ongoing basis", Interviewee 5 said "The funding obstacle stands." Interviewee 1 added, "The university's network and information security software is considered one of the largest infrastructures at the country level, Interviewee 4 added "The university's IT department is working hard to support data security in the university's network, we constantly need financial support to develop it to keep pace with global development."

The universities indicated that they are using free software - due to poor funding - because they have somewhat achieved what is required in terms of assessments. The interviewees emphasized that the electronic assessments documented the process of entering the electronic exam, but there is a high level of unreliability. Interviewer 2 indicated that it is usually a list of student names for each course, but the problem of plagiarism remains." Interviewee 3 added: "The university considers data security one of its priorities", Interviewee 6 added "but due to the limited resources provided for e-learning"; "we use Moodle software as it is a free open source software and it provides the desired goal somewhat." Two interviewees confirmed that the university uses Moodle software as it is free for organizing the electronic class. Interviewee 1 indicated, "A special account has been prepared for each student using the free Moodle, which allows him/her to review his/her courses and assignments and perform electronic exams in safety". Interviewer 4 indicated that "Big Blue Button, Zoom, software was used for Synchronous lectures", while interviewees 2, 3 confirmed "there is a lack of confidence in Moodle, as some students use the accounts of their classmates and friends". Interviewee 5 added "In general, the university is working on funding projects from abroad to support the university network and train staff on the most powerful software in the field of information security". Interviewee 6 added "However, there remains an insecure aspect of the Internet in general and it can be hacked."

With regard to the cost of e-learning software and the importance of financing software that support e-learning, the interviewee 1 said, "The university provided software for safe browsing for some colleges due to their sensitivity, such as the Faculty of Medicine, as well as provided the E-CLASS platform", while

interviewees 2, 3 confirmed that "the university lacks the financial support provided for e-learning". Interviewee 6 said "Academics demanded software to control fraud, but the university faced a budget problem."

In the field of virtual classes, interviewee 2 affirmed, "The university is working on the use of virtual lab", the interviewee 5 said "we considering investing in programs and technologies that produce better education by searching for funding for external grants to support infrastructure and software development".

In the era of information digitization, illiteracy is associated with the lack of software skills and techniques in the era of the technological revolution. Interviewees 1 and 3 stated, "The university is trying to provide training for academics on software within the available financial capabilities." As for private training in software, interviewee 2 argued, "The university faces the obstacle that relates to its academics who do not have enough time due to their heavy academic loads", Interviewee 5 added "another problem is that if the university needs to purchase a specific software, the cost becomes a significant barrier."

Two interviewees indicated that the e-learning platforms were limited to Moodle with the provision of some software in the field of Multimedia. Interviewee 3 stated, "E-learning trainings are almost limited in the Moodle platform, Interviewee 6 added "the university has provided multimedia programs."

DISCUSSION:

The aim of the research is to identify the quality standard of outputs for money in Palestinian universities, the quality strategies in e-learning, and the obstacles (e.g., such as a lack of resources, support tools and training to achieve this standard) that e-learning departments face.

The study results showed that the accumulated financial deficit of Palestinian universities is attributed to the lack of a clear financing policy for higher education since its inception; data indicate the accumulation of financial deficits for years in Palestinian universities caused by the occupation; besides, deficits are attributed to the lack of investments and self-returns in universities and the non-disbursement of university allocations by the government. It has become imperative for the education systems in higher education institutions to seek to recover without repeating mistakes at the beginning of the emergency phase during the Corona pandemic. The results are similar to what is mentioned in Shaheen (2016) confirmed that the delay in disbursing university allowances leads to a permanent shortage and inability to cover university expenses. The results of the study showed that the provision of equipment and communications was lacking at the required level. And the result is in line with Abu Hatab (2021) confirmed that the majority of Palestinian society was not technically ready to enter this path; And with Michubu et al., (2017) indicated that the services related to academic advising and financial funding were insufficient. E-learning departments are seeking to prepare strategic plans in the field of e-learning to build a base on which they can rely to promote e-learning that supports traditional education, especially after the emergency situation they were exposed to during the Corona pandemic. The results showed the pivotal role played by the e-learning departments to build a strong base for this learning in order to keep pace with the global competition in the field of educational technology and the need to adhere to

standards that support the quality of outputs. The result is opposite to Abu Hatab (2021) indicated that investing in education as the best treasure is one of the most important factors in entering the world of knowledge. And with Kivistö & Pekkola (2017) standards for the quality of higher education were adopted to assess the costs associated with ensuring the quality of management on an ongoing basis, and with Adu-Oppong (2014) confirmed that university officials have a pivotal influence on university policies, the results are similar in Poon (2013) emphasized that support from senior managers is an important prerequisite for resource allocation in e-learning. And within Kim (2017) stated that educational competencies are an important and powerful mediator in the relationship between electronic learning management systems and academic achievement.

With regard to e-learning software, the results showed that universities, due to the difficulty of funding, used software of course management system, e.g. Moodle software, in addition to design and montage software such as Camtasia and some necessary design programs to organize the electronic class. The results also showed that the concept of illiteracy is no longer linked to cultural ignorance or the inability to write and read, but rather to the extent of human knowledge of the modern language that helps him keep pace with digital software. The results showed that universities, at the beginning of the Corona pandemic, used the Zoom software to organize synchronous meetings, and committed to a monthly amount to be paid by the university in order to organize simultaneous recorded meetings with the students, but after the emergency ended, universities were unable to continue subscribing to the software due to the lack of funding.

Some of this software is free, and some are financially expensive. Some academics have objected to continuing to work with these software as they require a lot of time and effort due to the heavy loads assigned to them in academic work. The results are similar to what is mentioned in Al-Beddou (2022) argued that a proposal for evaluation based on technical skills for the twenty-first century was approved, and with Hilali (2020) stressed the importance of training the parties to the educational process on the use of software techniques.

With regard to information security as an indicator of the quality of outputs, and due to the importance of enhancing digital information security to meet digital challenges in an era where technology has invaded all areas of life, the results showed that information security on the internet is vulnerable to hacking in any way; besides, information security is a sensitive issue in all sectors and is not only related to the education sector. The results are similar to what is mentioned in Kafi (2009) stated that penetration is unauthorized access to data, which causes bypassing security mechanisms, and with what is mentioned in Al-Khudari (2020) emphasized the increased interest in confronting any unauthorized attack.

The results showed that the era of globalization and the digital technological revolution rearranged the priorities for educational institutions. The internet became a key partner for these institutions in their educational function, and the impact of this network is determined by the institution's ability to direct it to confront abuses. The result is opposite to on Wijayanto & Prabowo (2020) argued that there is an urgent need for digital security in various educational institutions.

The results showed the weak infrastructure in universities and the lack of efficient communication networks that ensure support for data security and privacy. This is due to poor funding and the accumulated financial crisis that these universities are going through. The results are similar to what is mentioned in Hamdan et. al (2021) highlighted the universities' interest in the need to strengthen infrastructure as they need funding. The universities do not support financing the technical, organizational and administrative means to prevent unauthorized use and prevent misuse and exploitation well; penetration problems are among the biggest challenges facing the credibility of educational outputs. Al-Khudari (2020) indicated the need to pay attention to educating university institutions to confront any unauthorized attack and that cybersecurity concepts that should be reinforced among IT students should be identified (Nyinkeu et al., 2018).

Furthermore, the results showed that the adopting e-learning while taking the necessary precautions for this type of learning and how to deal with the negative repercussions that accompany e-culture applications in reality is a global trend, and that students' knowledge accumulation is decreasing due to the dependence of a significant number of students on cheating and the weakness of positive values when they use applications that help them cheating. The result is opposite to on Al-Hindi (2021) postulated that the bad spread of digital applications affected the personality and moral and scientific formation of university students.

The education sector is not isolated from the digital revolution that swept the world; it is considered a long-term investment if it is linked to the sources of economic growth in the country. In order to achieve the goals of e-learning, improve it and apply it in the best way, it must be subject to the principles and quality standards through which the obstacles that prevent the achievement of its goals are identified. The result is opposite on Kivistö & Pekkola (2017) and Abdul Ghani (2021) confirmed the adoption of standards for the quality of higher education.

CONCLUSION:

The accumulated financial deficit of Palestinian universities is due to the lack of a clear financing policy for higher education since its inception; The data indicate the accumulation of financial deficits for years in Palestinian universities, and the lack of investments and self-returns for universities, and it has become imperative for education systems in higher education institutions to seek to recover without repeating mistakes at the beginning of the emergency phase during the Corona pandemic, including the provision of software and information security that supports educational technology and technologies, but on the other hand, these slogans cannot face the lack of financial support and budgets allocated for this type of education.

The adoption by higher education institutions of quality standards that control the e-learning process is an urgent requirement in current time, especially after the emergency that the world was exposed to immediately after the spread of the Corona pandemic, and this investment is the beginning of the way, and that the experience of e-learning during the pandemic is a random, unplanned experiment with clear goals. Rather, it is an attempt to salvage what can be salvaged; Universities are obligated to improve e-

learning and build on their previous experience during the pandemic, and to pay attention to the quality standards of the educational process outputs in exchange for the money invested in this education.

The education sector is not isolated from the digital revolution that swept the world, and it is considered a long-term investment if it is linked to the sources of economic growth in the country. Achieving its goals, and for the e-learning departments in educational institutions to seek to develop it in line with the global development in this field, and to recover without repeating mistakes at the beginning of the emergency phase during the Corona pandemic.

Recommendations:

- The adoption by higher education institutions of quality standards that control the e-learning process is an urgent requirement in current time, especially after the emergency that the world was exposed to immediately after the spread of the Corona pandemic.
- It has become imperative for education systems in higher education institutions to seek to recover without repeating mistakes at the beginning of the emergency phase during the Corona pandemic.
- Interest in research problems that examine investment in e-learning.
- Attention to the adoption of standards to ensure quality in e-learning in Palestinian universities.
- Adopting international standards and indicators that support quality in higher education and studying how to adapt them to Palestinian universities.

Limitations:

One of the limitations of the research is the number of participants, but this limitation was reduced because the participants are from three Palestinian universities, more participants are needed to involve more participants from the e-learning centers in the universities; which would add credibility and reliability to the research.

The second limitation in this research is that the research was conducted in a developing country under severe and out of control conditions.

The third limitation lies in the fact that the current research is based on qualitative methods. There is a future requirement in the use of quantitative methods and a combination of qualitative and quantitative research; which would add objectivity to the study and provide the possibility of generalizing the results.

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