

**Factors Affecting the Quality of University Online Learning Post
Covid-19 Pandemic: A Case Study of Palestine Polytechnic
University Students**

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Abstract

The purpose of this study was to investigate the impact of several factors on PPU's e-learning quality following the Corona epidemic. Drawing from prior study, the investigator endeavored to employ a descriptive and analytical methodology. The author worked on creating a tool that contained the most important seven elements that influence the quality of online learning (administrative assistance, computer skills, system quality, electronic services, educational material, and motivations) in order to test the study questions. All enrolled university students for the 2023–2024 academic year—an estimated 9,300 students spread across various colleges—were included in the study population. The electronic study tool was built by the researcher among which 403 responses were recovered. In order to assess the internal consistency of the study tool items, the researcher extracted the Cronbach's alpha value, and found that it was 0.89.

Multiple regression analysis was used by the researcher to ascertain how each quality component affected the quality of online learning. The study's findings demonstrated that online services, course content, motivations had a favorable and statistically significant impact on the quality of online education throughout the years after the Corona pandemic. The researcher presents a number of recommendations based on the aforementioned findings, which include: It is important to pay close attention to the factors that affect the quality of online learning, hold training sessions and educational workshops, and put into practice the suggestions made at scientific conferences regarding ongoing improvements to the caliber of educational services, as this is the best path towards overall quality. Lastly, it is recommended to replicate the experiences of developed nations in this regard and steer clear of the experiences of developing countries.

Keywords: Quality, online learning, Covid_19, Palestine Polytechnic University.

Jel: I23, I25, O03, M31.

INTRODUCTION

Traditionally, higher academic institutions have offered their services and lectures face to face by integrating students and teachers into wide discussions inside the classroom. Academic interaction is one of the means that contribute to the rapid understanding of the topic of the lesson (Davies et al. 2016).

Many researchers have focused on the quality of education as one of the main ways to reach a high level of competitiveness among academic institutions. Quality has been linked to many factors, including the size of the university or the location (developed or developing country), the type of lesson (theoretical or scientific), the administrative services (electronic or traditional), the means of technology on which the university relies, the funds invested in the localization of technology, and finally the strategic vision of the university about adopting Quality as a clear policy.

The quality of educational services has a significant impact on the student's perception of these services, which is greatly reflected in the quality of academic achievement.

Covid 19 pandemic imposed exceptional circumstances all over the world, as the closures and the irregularity of the traditional educational process contributed to the trend towards e-learning through several digital means. Educational platforms and video systems employed for conferences have become means that have been exploited in academic institutions, conferences and meetings for most countries of the world (Kuzenkoff, 2020).

The success of countries in the transition towards digital life and its academic localization depended largely on the technological readiness of countries and academic institutions. The ability of instructors and students to adapt their skills as a result of scientific institutions in developed countries has significantly contributed to the steady continuation of the educational process. Developing nations were unable to integrate technology, which led to a decline in educational outcomes (Rodriguez-Segura, 2020).

The quality of educational services is the basis for sustaining educational outputs capable of bridging the gap in joining the process of technical development.

In order to increase the effectiveness of e-learning systems, many researchers have worked to uncover e-learning success characteristics such as IT competency, teaching style; and attitude and mindset (Webster and Hackley, 1997). As a result, the quality of e-learning systems has attracted a lot of research interest.

RESEARCH PROBLEM

Covid 19 pandemic affected all our daily life activities and forced many changes and imposed many challenges on different disciplines among which is the education sector. Educational institutions were forced to continue their services during the pandemic and to adopt online learning as one of their solutions. Palestinian universities have also to tackle the problem and adopt online learning even post Covid 19 due to many reasons including Israeli occupation which sometimes prohibits students from safely reaching their universities. However, Universities in Palestine lack the strategy to implement and enhance the necessary factors that influence the quality of online education. (Khlaif et al. 2021), (Hinawi& Barahmi, 2015). Therefore, we will investigate the factors that influence the quality of online education for university students in Palestine. This will aid Palestinian educational institutions

in implementing a strategy that considers the factors influencing the quality of online education.

RESEARCH QUESTIONS

What are the factors (administrative support, computer skills, system quality, online services, course content and design, motivations) that affect the quality of online learning from Palestine Polytechnic University (PPU) student's perspective?

RESEARCH OBJECTIVE

This study tried to Identify and study the main factors (administrative support, computer skills, system quality, online services, course content and design, motivations) that affect online learning quality at PPU from student's perspective.

Definition of Key Terms

Online learning: "online learning is an umbrella term that refers to the use of any digital device or media (multi-media) for teaching and learning, especially for delivery or accessing of content. Thus, online learning can take place without any reference to a network or connectivity" (UNESCO,2020).

Education quality: "The essence of learning is quality in higher education. The objective of quality assurance is to persuade others of the adequacy of a learning process". (Harvey, 2007, p. 5)

Covid_19: "According to the World Health Organization (WHO), coronaviruses are a virus family that causes a range of ailments, from the common cold to more severe diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS). Initially, these viruses were transmitted from animals to humans" (WHO, 2020).

LITERATURE REVIEW

The world has witnessed widespread and rapid development in recent years, especially in the technology sector, which has greatly affected the education sector as one of the sectors that has coexisted with this development. Online learning is no longer confined to a specific region or a specific level of education. This is what prompted researchers to study the mechanism of enhancing the quality of online learning, especially in light of crises, particularly the Covid-19 crisis.

Al-Salim and Aledwan (2021) "The relationship between academic integrity of online university students and its effects on academic performance and learning quality". This study examined the relationship between academic integrity, academic performance, and learning quality among online university students. 155 active online university students were contacted through email to collect data. The results indicated that there is a statistically significant correlation between the academic integrity of online students and the quality of their academic learning.

Saleem et al. (2022) "Factors Affecting the Quality of Online learning During COVID-19: Evidence From a Developing Economy". this study Assessed the parameters influencing the quality of online education for Pakistani students during the COVID-19 pandemic. Developing countries like Pakistan present a unique scenario for online

education as the general public has limited access to technology, ICT services and the internet. In this paper, the aspects that influence students' online learning process are integrated with situational factors as boundary conditions (moderator variables). Results showed that university support, teacher support, and motivational factors influence the quality of online learning. The relationship between teachers' supportive and motivating factors and the quality of online learning was significantly influenced by context. Situational factors did not affect the quality of university support or online learning connections.

Ambayed Hiba Khalil (2020) "Analysis E-Learning Status in Palestinian Universities, A Case Study of Palestine Technical University- Kadoorie Tulkarm", The researcher tried to analyze the reality of e-learning in Palestine Technical University-Khudouri/Tulkarem, she identified the most significant challenges students face when using the educational system, as well as analyzing the degree to which university students interact with the E-learning system, and showed that e-learning is a viable option for higher education. According to the study's findings, 63.16% of those surveyed think that E-learning in universities actually has a number of issues. According to the survey, complaints about the E-learning system have increased among respondents (87.97%) since the Covid 19 pandemic, and among academics (81.36%), the infrastructure was one of the biggest obstacles to E-learning. While the majority of researchers (63.934%) believe that e-learning can help students interact with one another.

Andez-Batanero (2022) "Online education in higher education: emerging solutions in crisis times". The research attempted to examine and characterize the transition from in-person to online learning as well as how teachers and students felt about the epidemic. The study was developed using the PRISMA statement- and PICO strategy-supported methodology using Web of Science, Scopus, ERIC, and PsycINFO to find relevant scientific literature. 29 studies out of 241 found throughout the search have been included. The findings demonstrated that online education was a viable alternative for the growth of higher education, but many flaws in the shift to online education were also discovered. The study's findings suggest that higher education will move toward online instruction in the future. Institutions should therefore increase their investments in online learning platforms and enhance their programs for teacher training.

Al-Mawee et al. (2021) "Student's perspective on distance online learning during COVID-19 pandemic: A case study of Western Michigan University, United States", The study's objectives included identifying the variables that affect students' experiences and examining the effects of student and college characteristics on views of online learning, as well as exchanging knowledge and experiences that could positively affect distance online learning at WMU. Through the official website of Western Michigan University, Qualtrics, the survey was delivered online. All WMU students, professors, and staff had access to the Qualtrics platform, a potent platform for survey design, through the WMU's official website. Students received information on informed consent and a link to the survey via university email.

The survey included 420 undergraduate and graduate students at Western Michigan University who enrolled in various online learning courses in the 2019-2020 school year. In-person or hybrid classes are preferred by many students, especially freshmen, over online programs. There are other reports that faculty and students generally prefer

hybrid or mixed programs. Students spoke of positive and negative experiences with distance online learning, including loss of social interaction and time and place flexibility.

Previous studies addressed the impact of some factors on the quality of online learning during the Covid-19 pandemic. These studies did not fully address these factors, and this is considered a large gap between the current study and previous studies. By addressing the full set of factors that affect the quality of e-learning, there is a vision. Comprehensively about the mechanism of attention to all these factors in any future plan to enhance comprehensive quality. Currently, all factors are affected and affect others, and this is what makes studying them together a scientific advantage for this study.

Online learning and Covid 19

The COVID-19 pandemic has had a significant impact on many facets of daily life, including educational systems, and caused widespread disruptions on a global scale. Nations from all around the world rushed to lessen COVID-19's effects on society and to cut back on infections and fatalities. Many schools and institutions around the world decided that online learning would be the best answer as a result of the crisis and worry about the virus spreading (UNESCO, 2020). The abrupt global spread of the coronavirus gave administrators and educators very little time to create practical mitigating strategies. Numerous universities lacked the necessary skills to handle the numerous difficulties that developed as a result of the switch to online learning platforms (Daniel, 2020).

Quality of E-learning during Covid 19 era

Online learning tools were crucial in facilitating the shift from traditional to online education during the COVID-19 epidemic. With the ongoing advancements in educational technology, various online learning platforms have emerged, including MOOC (Massive Open Online Courses), Zoom Cloud, and WeChat Work. These platforms gained popularity during the pandemic. The rapid transition of online learning from a complementary educational tool before the pandemic to the sole substitute for traditional learning during the pandemic has led to challenges in utilizing online education platforms, prompting researchers to investigate this phenomenon (Chen et al., 2020).

Post-Pandemic Online Education

The end of numerous pandemic restrictions is approaching after three years of fighting the COVID-19 pandemic (Spencer, 2023). The normalcy that existed before to the outbreak of the disease is slowly returning. The majority of educational institutions across the globe have reopened and switched from offering online learning to regular classroom instruction. This does not imply, however, that traditional education will become obsolete and take the place of online learning. Online learning will continue to be a part of modern education for a number of good reasons. For instance, during the pandemic, it turned out to be the greatest and only substitute for traditional education, offering students online safety from the COVID-19 virus in addition to a continuation

of their education. Many scholars support the online learning in pos-pandemic, claimed that online education open the door toward new innovation.

Online learning in Palestine

In times of crisis and wars, Palestine's educational institutions always strive to offer top-notch instruction to everyone. The suggested e-learning innovation is a workable program because of the rising demand for education, the limited resources available for traditional learning, as well as the physical and security issues (EL-Harazin, et al., 2007).

Proliferation of ICTs is one of the most important effects of the continuous bloodshed in Palestine. The construction of increasingly connected communities, whose fabric gets solidified through access to the Internet and information, is seen by Palestinians as made possible by ICT, which they view as essential to their survival and quality of life (Saidam, 2007). Consequently, the international community, including the World Bank, the United Nations Development Programme (UNDP), the European Union, and others, began to include the use of ICT in policy suggestions for Palestinians (Zuriek et al., 2006). Internet access was first made available in the early 1990s. The first place in the region to connect to the Internet was Palestine, and specifically Birzeit University (Rabayah et al., 2008).

Online learning in Palestine during Covid 19

Palestine has imposed a state of emergency on 5 March 2020, related to Covid-19. Varied reactions among afflicted populations were identified. However, since education impacts almost every home, Palestinian traditional colleges were quick in placing forth a few steps and alternatives to assure the continuation of the education process in this crisis, as more than 170,000 students in the higher education sector were directly impacted (MOHE, 2020-a). As the outbreak persisted, Palestinian traditional colleges responded variously relying on the institution's capabilities and facilities, but not according to a predetermined strategy. MOHE has proclaimed that there will be a plan for the digitalization of higher education to facilitate the digital transformation in higher education institutions (MOHE, 2020-a). It added that a by-law draft for e-Learning is being created, among additional steps, and put out to go via relevant legislative procedures. Moreover, the findings from a study performed during the second semester of the academic year 2019–2020 by Ministry of Higher Education and Scientific Research, or MOHE (2020-b) demonstrated that Eighty-one percent of lecturers and 41% of students in their educational institution had trained them on online learning, whereas 67.1% of teachers and 44% of students agree that e-Learning has accomplished the knowledge part of intended learning outcomes. Furthermore, 70.9% of teachers and 39.9% of students stated that e-Learning came on every aspect of the curriculum based on course outline, while 71.8% of teachers and 43.2% of students indicated that online learning has given greater chances for lecturer-student interaction (Ministry of Higher Education and Scientific Research MOHE, 2019). The research recommended, among others, that online learning be utilized as a support to in person teaching and learning, online learning platforms become available to higher educational

institutions to train instructors and learners on online learning, online learning by-law should be executed and identified by the ministry and the universities.

Obstacles to e-learning in Palestine

There are several advantages that have developed in employing the e-learning approach, however educational institutions in Palestine still confront many hurdles and difficulties in all various areas, the most prominent of which are:

- 1 .Weak technical infrastructure for information and communications
- 2 .Lack of time required for transformation and renewal
- 3 .Scarcity of change leaders who bear the responsibility of awareness, creating inspiration, addressing difficulties, and following up on anything new in the field of e-learning
- 4 .The divide between the rising generations and the elders that make decisions
- 5 .Weakening the function of the teacher as a key educational supervisor and his direct relationship with his pupils and thus his capacity to directly affect
- 6 .Weakening the significance of the educational institution in society and losing its vital role in scientific education
- 7 .The advent of commercial entities that strive for profit to monitor the certification and preparation of teachers, who are not competent to do so
- 8 .There are numerous scientific gadgets employed in the teaching process, which may lead the student to be reluctant to utilize them.

The impact of Corona on education in Palestine

As soon as the Corona pandemic started appearing in the world, this pandemic required all countries to make changes in how to live in preventative measures ways and methods in various fields, as it affected all sectors, including education, resulting in those responsible for education adopt the method of distance education until the crisis ends. The means of implementing distance education varies in various parts of the world. In Palestine, the Ministry of study was fast to apply e-learning techniques, as this system was fresh to deal with in its comprehensiveness in this experience, despite the problems and challenges it experiences, as it currently presents the best option for our students to continue their study.

The experience of utilizing the e-learning technique is of remarkable proportions, as the power of current technology is utilized to improve educational achievements for all students. The quality of education that students acquired during the present crisis differed to a notable degree, since the digital gap and the accompanying substantial discrepancy in homework assignments were genuine and noticed among students. everyone.

During previous times in Palestine, e-learning was unexpectedly enforced on students and there was a transition from traditional education to e-learning, causing them severe disorientation and dissatisfaction at the beginning of the crisis due to an absence of adequate willingness and getting ready for this type of education.

With the start of the outbreak of the pandemic of Corona, and after a short period of no more than a week after the declaration of the state of emergency, competition began at the level of teachers and tools for higher education, and everyone started attempting to employ social networks and all accessible technology to carry out the educational

process from home, and here we witnessed grievances, anxiety, and disarray from learners and their families who... They complained about the influx of tasks and e-learning images that filled the screens, occupied the family, and caused stress for the students. All of these paradoxes are natural in times of crisis. On the one hand, we want the process of learning to continue, and on the other hand, we want to remain away from strain and pressure.

E- learning in PPU During Covid 19

Palestine Polytechnic University (PPU) is one of the main universities in Palestine that offers academic and professional degrees in technology and engineering in addition to ongoing learning and professional technological consulting utilizing the newest technologies and highest standards in all sectors. PPU has the purpose of graduating qualified labor forces able to generate beneficial change and meet the demands and requirements of society as a whole in scientific, technical, and research sectors. Providing creative thoughts and solutions. focusing on the importance of research and development in reaching continuous and significant national progress. And attain greatness via improving resources and expanding the possibilities of human resources. PPU was founded in 1978 by the University Graduates Union (UGU) as a local nonprofit organization that provides educational resources, and it is affiliated to the Palestinian University Presidents Council, the International Association of Universities, the Arab Universities League, and the Islamic League of Universities. PPU includes the faculties of Technology and Engineering, Applied Science, Administrative Sciences and Informatics, Information Technology and Computer Engineering, and Applied Professions, it is considered to be a medium sized university with over 50 academic programs and more than (9300) students.

E-Learning in the University of Palestine Polytechnic University (PPU) Post-COVID-19

The outbreak of COVID-19 has transformed the landscape of education across the globe with universities being forced to quickly adapt to new methods of teaching and learning. One of the most notable transformations is the extensive use of e-learning or online education. For example, PPU has not been an exception in moving towards this direction as it grapples with pandemic related challenges while keeping consistency and quality of education at par. Essentially, e-learning involves utilizing electronic technologies primarily the internet for teaching remotely. In PPU, a number of initiatives and adjustments have taken place as far as e-learning post-COVID-19 is concerned with regard to enhancing accessibility, efficiency, and engagement in virtual learning environment. One of the major objectives that have been set after COVID-19 regarding e-learning at PPU is offering students flexible and inclusive ways through which they can learn. Students can easily reach course materials, participate in interactive lectures, contribute to discussions online and submit assignments by using electronic platforms or resources from any location that has access to internet connection. This flexibility also embraces deep dive into different types of learning environments such as asynchronous at PPU, innovative technologies and pedagogical approaches are blended in e-learning to improve learners' experience. Students have a

wealth of digital tools and resources available to them ranging from interactive multimedia presentations, virtual labs and simulations that support active online learning, critical thinking as well as problem-solving skills acquisition. Furthermore, there are online platforms for collaboration which together with communication tools aid in peer-to-peer engagement thereby enriching the online learning process and creating a sense of belonging among the students and their teachers. Consequently, this means that transitioning to e-learning after COVID-19 has not been without some difficulties. Among such concerns include: technical problems, matters of unequal access due to the lack of adequate technology at home during the lockdowns and continual faculty training needs among the numerous issues being considered by e-learning strategy directors at PPU. Nonetheless, it is noteworthy that pandemic gave rise to digital transformation in education making stakeholders moving forward with new ideas considering contemporary students' demands. In summary, e-learning at PPU after COVID-19 is a flexible and changing method of teaching that emphasizes on availability, involvement, and advancement. With the adoption of technology and new ways of teaching and learning PPU has positioned itself to succeed in the digital era while encouraging student success in an increasingly intricate and globalized world.

PPU created an e-Learning center in 2006 and this unit has been cooperating with the academic staff even till now by supporting them to be more familiar with online platforms. It is after the beginning of the COVID-19 pandemic that the center has made concerted efforts to scale up the quality of the online learning in this case in various dimensions. These efforts include:

- ✓ Scheduling briefing sessions for all club's representatives from each college.
- ✓ Developing the programs for nine colleges and 10 staff members.
- ✓ Business it also provides the instructive on how Moodle, the e-learning system, is used.
- ✓ Providing online assessment methods training to College of Medicine instead of giving specific assignment to train online evaluation.
- ✓ Lane works on training and induction for the use of different online tools, examples are CANVA, Snagit, Google Meet, Nearpod among others.
- ✓ Regular training courses held on-line to introduce students to assessments, such as Socrative and Google Meet.
- ✓ By making videos illustrations which show the user how to use those online tools, aimed at raising the level of online learning quality.
- ✓ Providing online manuals to staffers covering all functionality varying among the online learning platforms. From US, to UK and Europe, Instruction: Humanize the given sentence.

These activities illuminate PPU's persistent pursuit of improving its online learning institutions, and consequently helping its academics strategize in developing quality education on the web. Recently PPU expanded cooperation with many western institutions to maintaining online learning projects, E-Pal is a long-term initiative supported by The Norwegian Agency for Development Cooperation (Norad) for a duration of six years. The initiative is a collaborative effort involving PPU, UCAS, the University of Oslo in Norway, and Oslo Metropolitan University in Norway.

The higher education sector is currently grappling with the challenge of effectively incorporating and leveraging rapid technological advancements to enhance the quality of teaching and learning. The surge in online learning during the COVID-19 pandemic

posed challenges to traditional procedures, raising several inquiries regarding the optimal utilization of current technologies to enhance students' academic and vocational growth. Presently, significant discussions revolve around the methods to tackle the involvement of generative artificial intelligence, like ChatGPT, and immersive technologies, such as virtual and augmented reality. Additionally, there is a focus on utilizing online learning to create more adaptable educational options.

RESEARCH METHODOLOGY

The research approach, study population, study sample, sampling process, and data collection tools are all introduced in this chapter along with the research methodology for the study.

Research Approach

To satisfy the objectives of the study, it relied on the descriptive analytical method based on theoretical literature and related studies, in addition to developing a tool (questionnaire) to be used in collecting data and analyzing it quantitatively.

Study Population and sampling

The target population for this research is defined to include all PPU students from different colleges which equal 9300, by computing the study sample which equal 369 , this means 369 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within $\pm 5\%$ of the measured/surveyed value.

Questionnaire Reliability

By estimating whether the items reflect similar outcomes if the instrument is utilized at different times under similar settings, the reliability of the tool is determined. Cronbach's Alpha, a statistical test, is used to express this. Alpha has a total value of 80%. Table 5 displays the Cronbach's Alpha measures for each section of the questionnaire. According to Hair et al. (2014), the outcomes validate the instrument's reliability.

Table 1. Results Of Cronbach's Alpha for Instrument Reliability

Questionnaire Part	Number Of Items	Cronbach's Alpha
Administrative Support	7	.894
Computer Skills	5	.932
System Quality	8	.889
Online services	8	.882
Course Content	8	.887
Online learning motivations	7	.889
Quality of Online learning	9	.898
Total Degree for The Instrument	52	.894

Source: Calculated by researcher

RESULTS ANALYSIS

Analyzing the data gathered is essential to achieve the study goals and provide answers to the research questions. In this chapter, the results of the research are presented,

analyzed, and discussed. Based on the questionnaire's results, a quantitative analysis of the data was conducted based on the study sample's demographic information. The study variables' means and standard deviations were calculated as well. Finally, a simple regression analysis models was created and its shows the effect of independent variables on the dependent variable. Table .6. shows demographic data as follow:

Table .2. Demographic Data

Variable	Category	Frequency	Percent
Sex	Male	118	29.3
	Female	285	70.7
Education	Diploma	57	14.1
	Bachelor	327	81.1
	Master	14	3.5
	PHD	5	1.2
	Beginner	47	11.7
English proficiency	Intermediate	283	70.2
	High	73	18.1
College discipline	Scientific	171	42.4
Computer availability for personal use	Administrative	131	32.5
	Social	36	8.9
	Professional	65	16.1
	Available	333	82.6
	Unavailable	70	17.4
Internet accessibility for personal use	Yes	353	87.6
	No	50	12.4
Internet access technology	3G-4G	82	20.3
	ADSL	99	24.6
	Viber	173	42.9
	Other	49	12.2
	Low	23	5.7
Computer usage ability			
	Intermediate	171	42.4
	High	209	51.9
	Practical	30	7.4
Type of courses			
	Theoretical	68	16.9
	Mixed	305	75.5
	City	244	60.5
Residence			
	Town	71	17.6
	Village	84	20.8

	Camp	4	1.0
Total		403	100%

Source: Calculated by researcher

Demographic data contributes to giving a clear view of the composition of students at the university. Through this data, a clear framework can be reached about the mechanism for developing policies to enhance the quality of online learning.

The results of the demographic data for the study sample showed that 70.7% of the study sample are female, where 29.3% are male. These results indicate that females are more responsive to participating in expressing their opinion about this study, additionally also indicate that the number of females more than males at the PPU. Moreover, globally females more familiar with online education services. It was also found that there were 14.1% of diploma holders, 81.1% of bachelor's, 3.5% of master's, and 1.2% of doctorate. The lion's share of student sample holder bachelor degree.

Regarding English language skills, which are considered of great importance in online learning, it was found that 11.7% of the study sample have a basic level of the language, 70.2% have an intermediate level, and 18.1% of the sample have a high level of the English language. This mean that the majority of student have intermediate level in English language.

Concerning to the college which the students enrolled, the above table shows that there are 42.4% of scientific colleges, 32.5% of administrative colleges, 8.9% of the college of social sciences, and 16.1% of vocational colleges.

It was shown from the above data about the study sample members owning a personal computer that 82.6% have a personal computer, 17.4% do not own a computer. Computer as an educational tool is available in hand of students. As for access to Internet services, it was found that 87.6% of the study sample have access to Internet services, while there are 12.4 %They cannot access the Internet. Today internet access in Palestine not a problem.

As for the Internet technology that the student accesses, the results indicated that 20.3% of the sample members access 3G-4G technology, while 24.6% of the study sample uses ADSL, 42.9% of the study sample uses Viber, and finally 12.2% uses other technology. .

As for the ability to use the computer, it was found that 5.7% of the study sample had low ability, 42.4 had medium ability, while 51.9% had high ability to use the computer. This ensure that the online learning experience success in PPU although some drawbacks.

It was shown in the table above regarding the type of academic course that there were 7.4% of the study sample who had a practical course, 16.9% who had a theoretical course, and finally that there were 75.5% who had a combined practical and theoretical course. Online learning serves combined practical and theoretical course, so that students in PPU not facing obstacles in follow lessons. Finally, with regard to the place of residence of students, it is clear from the table above that there are 60.5% of the study sample residing in cities, 17.6% of the study sample residing in towns, 20.8% residing in villages, and 1% of the study sample members residing in camps.

Computer skills are considered one of the important factors in online-learning. The tremendous development in the technology and communication sector has revealed many challenges for educational staff and students alike. The tremendous acceleration in online learning technologies, especially in light of the Covid-19, has opened many

horizons for learning new skills that enhance the ability to follow... Distance education is easy and simple, away from complications. The Table .7. shows the percentage of PPU students possessing various computer skills.

Table 3. PPU student's computer Skills

Computer Skills	Fre	%
Internet	11	2.7
Internet, social communication	11	2.7
Internet, social communication, google meet	12	3.0
Internet, social communication, zoom	1	.2
Internet, social communication, zoom, google meet	25	6.2
Internet, google meet	4	1.0
Internet, zoom, google meet	7	1.7
Social communication	19	4.7
Social communication, google meet	3	.7
Social communication, zoom, google meet	9	2.2
Google meet	58	14.4
Zoom	3	.7
Zoom, google meet	16	4.0
Microsoft office	14	3.5
Microsoft office, internet	5	1.2
Microsoft office, internet, social communication	6	1.5
Microsoft office, internet, social communication, google meet	20	5.0
Microsoft office, internet, social communication, zoom, google meet	150	37.2
Microsoft office, internet, google meet	8	2.0
Microsoft office, internet, zoom	1	.2
Microsoft office, internet, zoom, google meet	3	.7
Microsoft office social communication	4	1.0
Microsoft office social communication, zoom, google meet	5	1.2
Microsoft office, google meet	6	1.5
Microsoft office, zoom, google meet	2	.5
Total	403	100%

Source: Calculated by researcher

Based on the information contained in the Table.7 about computer use skills by students at PPU, it was shown that there is a percentage of 37.2% of the students in the study sample who know Microsoft office, internet, social communication, zoom, google meet, moreover, in second place there are 14.4% who know Google meet, in other words, overall students in PPU have extensive knowledge of computer skills, which qualifies them to rely on them in online learning processes.

In a questionnaire, construct validation can be achieved by the use of basic descriptive statistics such as mean and variance. To determine if the items in each proposed grouping provide roughly the same amount of information about the construct being measured, the item mean and item standard deviation were applied. It is also used to check if the standard deviations of the items are about comparable, meaning that each item adds the same amount to the overall scale score. Stated otherwise, the means and standard deviations of the items should be approximately equal on a Likert scale.

Multiple Regression results

In order to determine the impact of independents factors (administrative support, etc....) on the online learning quality at PPU, a multiple regression analysis was conducted, multiple regression is considered one of the statistical mechanisms that explain the deviation in the dependent variable as a result of the deviation of the independent variable by one unit. Since the study hypotheses address the effect of each independent variable on the dependent variable, this mechanism is considered the most appropriate in order to measure the effect of all independent variables and its effect on the dependent variable.

$$Y = \beta_0 + X_1 + X_2 + X_3 + X_4 + X_5 + X_6 + \varepsilon$$

Where, (Y) Online learning quality, administrative support(X1), computer skills(X2) , system quality(X3), online services(X4), course content(X5), Motivations(X6):

Table (4) Multiple regression results

R	0.75		
R-square	0.56		
F	85.5 Prob(0.00)		
Coefficients		T	Sig
Constant	.535	3.263	0.001
administrative support(X1)	.088	1.589	.113
computer skills(X2)	-.067-	-1.823-	.069
system quality(X3)	.058	.926	.355
online services(X4)	.255	3.773	0.00
course content(X5)	.225	3.897	0.00
Motivations(X6)	.242	4.291	0.00

The results of multiple regression analysis showed that some independent variables had no effect on the dependent variable, which is the quality of e-learning at the PPU, while there are variables that have a statistically significant change. online services have an impact. Increasing online services by 1% will lead to an increase in the quality of online learning is equivalent to 0.25%, and increasing the quality of educational content by 1% leads to an increase in the quality of e-learning by the equivalent of 0.22%, in addition, increasing motivations by the equivalent of 1% contributes to increasing the quality of e-learning by the equivalent of 0.24%.

Conclusion

The results of the study that there is a positive and statistically significant effect of online services, course content, motivations had a favorable and statistically significant impact on the quality of online education throughout the years post-covid pandemic.

Recommendations

Based on the above results, the researcher recommends the following:

1. Working to establish a special unit for the quality of online learning services concerned with implementing and encouraging the latest educational policies related to quality. To achieve this PPU have skilled staff able to lead it within six months.
2. It is necessary for the PPU to pay great attention to the quality of academic services at the university in a comprehensive and not partial manner. Maintaining the international academic standards.
3. Focusing on the experiences of developed countries and replicating them in the field of quality e-learning. Imitate the successful education experience and far from developing countries.
4. Organizing educational and training workshops on e-learning that are applicable in a way that suits an inclusive environment, training must provide PPU employees with modern online skills.
5. Enhancing the role of motivations, whether moral or material, in order to enhance interest in the quality of e-learning and increase its efficiency appropriately. quality online learning in PPU must be requirement not choice, culture experienced within staff.
6. Emphasis on that the quality of e-learning after the Covid pandemic is a basic requirement for the continuation of the educational process and not a choice applied only in crises. Improvement in education is adynamic process.
7. Great attention is given to the educational staff who can learn online learning skills quickly. Talent Acquisition is the first choice in recruitment.

In order to implement the study's recommendations, PPU must adopt a comprehensive strategy to localize online learning in its academic services by moving all educational and administrative processes within the university from the traditional phase to the digital one, based on the modern Holistic approach in management.

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