Digital Transformation of Higher Education in Palestine: Employment, Obstacles, and Trends

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ABSTRACT

The purpose of this study is to investigate the digital transformation of higher education in Palestine, to determine the level of faculty use of digital technologies at Palestinian universities, and to identify trends and obstacles. A descriptive-analytic approach was used to achieve the study's purposes. A survey was given to a stratified sample of 300 participants.

The results showed that the use of digital technology by teachers in Palestinian universities was moderate, with an average score of 3.40. And with a mean of 2.47, which means that the university teachers did not use digital technologies. The results also showed a number of obstacles to the use of digital technologies at Palestinian universities, most notably the infrastructure of such universities, which only met minimal requirements for using technology in education. The curriculum's structure for higher education is also shown to be inappropriate with the digital technology used in Palestinian universities.

The researchers conclude that the university curriculum to effectively handle digital technologies should be updated. This includes training the teaching staff, developing the technical infrastructure, introducing ethics into the educational process, and considering other evaluation methods instead of exams.

Key words:

Digital Transformation, Higher Education, Technology Employment, Digital Obstacles

I. INTRODUCTION

Historical research is "the systematic collection and objective evaluation of data related to past occurrences in order to test hypotheses concerning causes, effects, or trends of those events which may help to explain present events and anticipate future events" (Gay, L. R. 1981).

The massive expansion in the usage of digital technologies in communication and information technology is proof that the world is currently experiencing a significant revolution in technical advancement and digital information. As a result, many educational institutions began to use digital environments as a facilitator in teaching programs.

In fact, digital technologies were defined as powerful hardware, such as computers, phones, video and audio recording systems, or software, such as social media networks and web applications.

Additionally, virtual reality, integrated learning systems, and multimedia are all included in the definition of digital technologies (Abbott, 2015).

In recent years, technology has become more of an active agent of the education system as it has become fundamental in many disciplines. This was caused by the development of networks of computers and the Internet; the development of remote e-learning; their low cost and increasing use as an effective alternative to traditional education; and the capability for communication beyond physical distance (Onyemaetal., 2020). Thus, the use of digital technologies has evolved into a modern method of teaching that enables the delivery of digital content to students using cutting-edge technological communication techniques at the lowest possible cost and with minimum effort. It also provides educational content in a format supported by multimedia(Thomas,2016).

The use of digital technology in education is_supported by the idea that technological diversity and richness will increase in the future (Bastiaens& Marks,2017).

This is supported by the emergence of numerous trends in to use of digital technology in education, such as e-learning, where each student's diverse needs are taken into account when allocating resources, tasks, and responsibilities, and social learning, which emphasizes the significance of interpersonal interaction and the dynamics of group work. Another important trend is component learning, which organizes learning activities into smaller chunks and incorporates them into the learner's everyday tasks (Talal, 2020).

New methods of learning are now available because of digital technology. It is employed, for instance, in university instruction using the Internet and educational platforms like Moodle, Zoom, and other software. Additionally, specialized software like Adobe Primer Pro, one of the most well-known video editing applications, which enhances videos with snippets, music, and captions, is available for designing content (Al-Dulaimi, 2018; Samaniego Erazoetal.,2015).

The utilization of digital technology expands students' access to new learning opportunities and methods that encourage developing self-management abilities and presenting digital content to them utilizing modern technological devices. It provides interactive multimedia educational content. That promotes the academic development of both students and teachers, makes it easier to track students' progress, and evaluates and helps them in the field of education. Additionally, it provides unique characteristics, particularly in teaching techniques, improving interactivity, and promoting academic improvement for students and teachers (Izci, Darmaz, 2017; An-Najem,2016).

Similarly, the use of technology has significantly transformed the way that education is presented. As a result, the principles of education must shift to meet the demands of digital technology (Miguel-Revillaetal.., 2020).

Also, adapting to digital technology in education requires a comprehensive and extensive transformation in the higher education systems. Therefore, the teacher must be the creator and the leading participant in educational technology production. His responsibilities include using the Internet, e-learning, creating educational programs, and using simulation software (Mawasi et al., 2020). Rapantaetal's (2020) study demonstrates how websites and digital technology have gained center stage in student and teacher education.

One of the criteria for this employment is that the academic staff should possess various characteristics, such as the ability to use digital technologies and appropriately accomplish this. For example, AnNajem (2016) considers the availability of computer and Internet skills, familiarity with a variety of operating systems, and the ability to create presentations using tools like PowerPoint and Prize to be among the skills required

to use digital technologies. At the same time, Al-Anazi (2021) sees that every instructor must acquire digital Learning techniques.

To achieve this, it is necessary to train educators and students in using digital technologies, including interactive tests, question libraries, visual graphics, digital sound, and images. It is critical to create an engaged learning environment using technology and to enable proper logistics operations for teachers and students through its educational programs. ICT training must also be provided for educators, students, and administrators (Al-Zahrani, 2021; Mustafaoğluet al.., 2018). For university students to properly use digital technology, certain ideas like digital citizenship must be developed. In this regard, spreading the culture of digital citizenship among teachers and students is necessary because it has become a requirement due to the current scientific developments and their obstacles. In particular, many university students are unaware of the significance of being digital citizens and do not use social media or technological tools in educational contexts(Aburub,2019).

Thus, using technology is associated with obstacles Gök & Yildirim's study(2012) emphasized the value of employing websites for social media and digital technologies in teaching. Educators need to accept and employ innovative and effective e-learning approaches. Additionally, educators need to create strategies for teaching that are in line with the advancements of the virtual environment.

According to Wattyetal.,study(2016) ,which urged faculty members in higher education to learn more about digital technology, faculty resistance was the main hindrance to technology adoption. As a result, the study recommended additional research be done to find out how university faculty members think about the adoption and use of digital technology in higher education. In the same context, Mercader&Gairín's(2020) study examined whether academic discipline has an impact on the impression as well as the factors behind higher education institutions do not use digital tools for teaching. The results revealed that professional barriers are most common. The study suggested greater professional development for teachers and increased institutional involvement with planning processes.

On the other hand, Tanireh's study (2017)concentrated on using social knowledge to close the digital gap in Palestinian universities in the Gaza governorate. According to the survey, 48.45 percent of faculty members at Palestinian universities in the Gaza Strip have access to digital technology, and 42.55 percent of them are knowledgeable about it. The study came to the conclusion that in order to close the gaps, Palestinian universities should turn to digital transformation.

According to El-Gamal's(2020) study, which examined the challenges Palestinian university students in the Hebron Governorate encountered when using the remote learning system during the COVID-19 pandemic, the results revealed a variety of difficulties, including difficulties with the instructor, difficulties with psychological stress, difficulties with the curriculum, difficulties with the infrastructure, and difficulties with e-learning expertise. So, maybe these digital gaps explain why Palestinian universities have been slow to adopt digital technology. Palestinian universities have attempted to build digital storage and implement various systems, such as Moodle and Zoom, in response to the problem that arose when face-to-face instruction was stopped by the Corona pandemic-9 (Talal, 2020). However, because the use of digital technology is influenced by a variety of different aspects, it is necessary to conduct research on how digital education is used at different levels of education (Al-Anzi, 2021).

Therefore, the goal of this research is to examine the digital transformation of higher education in Palestine, to determine the extent to which educators at Palestinian universities use digital technologies, and to highlight the challenges that prevent the use of this technology in the teaching environment.

II. Research problem

The problem with this study is that traditional educational patterns in academic and educational organizations have given way to digital ones as a result of technical advancement and modern digital technologies. This includes universities, which, in light of the expanding discussion about relying on e-learning and utilizing technology, require that higher education institutions use technology in the context of published works. Nevertheless, despite the significance of this change, numerous studies show that technical limitations and a digital gap are among the problems that prevent the adoption of e-learning in Palestine (Shraim, 2012; Mubaid, 2020). The research problem can be expressed with the sub-problems are given below :

1. What is the degree of employing digital transformation in teaching by faculty members in Palestinian universities?

2. What are the attitudes of faculty members towards the employment of digital transformation in teaching at Palestinian universities?

3.What are the obstacles that faculty members encounter during the implementation of digital transformation in teaching?

Research purpose

This research aims to study the digital transformation of higher education in Palestine and the challenges associated with it

Limitations

The sample was taken from university faculty members in West Bank- Palestine during the second semester of 2021-2022

III. Method

In this study, in which the perceptions of university faculty members towards digital transformation of higher education in Palestinian. Practices, trends and obstacles were described. To accomplish the study's goals and provide answers to its questions, the survey designs, was used.

Population of the Research

The study population consists of faculty members in the Palestinian universities, and their number is about 2500 faculty members during the academic year 2021-2022.

Sample of the Research

Since the study population is made up of a variety of categories and some faculty members were selected from each university, the study sample consists of 300 respondents, was chosen using the stratified random sampling technique. The workplace variable for the sample's participants is shown in Table (1).

Table 1: The workplace variables for the sample members

Demographic variables		Repetition	%
	Private University	95	%33.7
	Public University	107	%34.3
	National University	98	%32
Total		300	100

IV. Data Collection

Instrument of the research

A questionnaire concerning the specialized educational literature was developed to accomplish the goals of the study. The tool's initial version included 28 components, divided into three main domains: The first is the effectiveness of using digital technologies by faculty members in Palestinian universities in the educational context. The second domain is the prospects for employing digital technologies in the educational context to improve the outcomes of university education in Palestinian universities. And the third is the obstacles facing faculty members in Palestinian universities when they use digital technologies in education.

Validity of the Instrument

To ensure the validity of the questionnaire, it was presented to a group of experts and specialists. They evaluated the items, confirmed their validity, and demonstrated their capability to obtain the relevant data. Following that, the instrument was modified in line with suggestions.

Reliability of the Instrument

Cronbach Alpha equation was applied to examine the reliability of the questionnaire. The investigation's reliability value was 0.89, which is acceptable and allows the instrument to be used. And table 2 shows the details.

Table2: Cronbach's alpha factors

Domain	Items number	Cronbach's alpha factors
The employment of digital technology attitudes toward digital transformation	10 7	0.91 0.87
the obstacles of digital transformation	9	0.92
Total	26	0.89

Scale

The scale below was applied in order to properly interpret the sample's response:

o   1.80-1 very low

o   4.21-5 very high

o   3.41-4.20 high

o   2.61-3.40 neutral

o   1.81-2.60 low

V. Results

Table 3 shows results to the first study question about the employment of digital technology at Palestinian universities.

Table 3:Descriptive statistics of digital technology employment

No.	Items	M	S. D	Interruption
1	I make sure to take advantage of modern technology.	3.25	1.29	neutral
2	I use educational platforms, such as: (Moodle, Zoom, etc.).	3.76	1.08	high
3	I prefer using traditional ways to teach students more than digital ways.	3.7	1.22	high
4	I work on electronic publishing during my academic work	3.36	1.25	high
5	I use an educational approach, such as Premiere	2.98	1.20	neutral
6	I do the evaluation process electronically, such as:	3.51	1.15	high

	(interactive tests, question banks, and electronic tasks).			
7	I make sure to use digital technologies in my daily activities while working.	2.47	1.54	neutral
8	I am using digital technologies in education in my academic dealings with students	3.53	1.21	high
9	I do not care about making virtual groups for students through zoom and Moodle	3.91	1.20	high
10	I use Moodle and Zoom to present educational courses for students	3.44	1.4	high
Total		3.41	0.93	high

The results show that, in Palestinian universities, faculty members employed digital technology on average at a mean of 3.41, with a standard deviation of 0.93, ranging from 2.47 to 3.91. The data also shows that item 9 was placed first, which suggests that professors are not interested in helping students build virtual groups using technical communication tools. The respondents' resistance to using instructional media programs was demonstrated by item 5, which came in last and received a low score.

The descriptive data in table 4 describes the results with regard to the second objective, which addresses faculty members' attitudes toward digital transformation at Palestinian universities.

Table 4: Descriptive statistics of attitudes toward digital transformation.

No.	Items	M	S.D	Interruption
1	I feel the success of the technical means that my university uses to communicate with students.	2.57	1.30	low
2	I am satisfied enough with my use of digital technologies in university education.	3.04	1.44	neutral
3	I believe there are great opportunities for the success of digital technologies experiments in Palestinian higher education institutions in general and within a short time due to what reality imposes.	2.70	1.33	neutral
4	I am working on using digital technologies in education in my academic dealings with students.	2.99	1.36	neutral
5	Using digital technologies in education increases my chances of improving my performance at work.	3.09	1.32	neutral
6	Enabling the student to obtain information by research, not memorization, and access as much information as possible.	2.71	1.36	neutral
7	Digital technologies encourage students to benefit from technology in education and achieve maximum effectiveness in learning.	2.79	1.33	neutral
8	Digital technologies contribute to enriching educational content.	2.53	1.21	low
9	Digital technologies help create an interactive environment by activating the student's role in lectures.	3.04	1.44	neutral
Total		2.28	1.07	low

Table 3 shows that the mean of the faculty members' attitudes toward digital transformation was 2.28 and a standard deviation of 1.07, which represents a low degree, as its means ranged between 2.53 and 3.09. The results also showed that item 5 ranked first as the respondents were convinced about using digital technologies in education, which increases their chance of improving their performance at work. Whereas item 8 ranked last with a high rating, indicating the extent to which the respondents are convinced that using digital technologies enriches educational content.

To answer the third question related to the obstacles of digital transformation. The mean averages and standard deviations were calculated, and the table 5 shows that.

Table 5: Descriptive statistics of the digital transformation obstacles

N.	Items	M	S.D	Interruption
1	I do not care about using modern technology in education	3.39	1.67	high
2	The university curriculum structure is not compatible with digital technologies.	3.99	1.05	high
3	I do not have the skills to use digital technologies and do online searches.	3.73	1.14	high
4	I do not have the necessary components to use all the university's digital technologies.	3.8	1.07	high
5	I do not trust digital technologies because they allow students to cheat.	3.92	1.03	high
6	The university administration is not interested in training faculty members using these techniques.	3.79	1.15	high
7	The digital interfaces used for education are not interactive.	3.04	1.44	neutral
8	I think that digital technologies in education are a burden on university lecturers.	3.83	1.18	high
9	The infrastructure in the university where I work is not qualified to employ digital technology in education.	4.05	1.04	high
10	I cannot create virtual student groups via zoom, Moodle, etc.	3.83	1.07	high
Total		3.88	.82	high

According to Table 4, the mean of obstacles affecting faculty members' use of digital technology in Palestinian universities was 3.88, with an 8.2 standard deviation, which is a significant value. This demonstrates that there are numerous barriers to the use of digital technologies, where the means range from 3.04 to 4.05. The result shows that item 9, which is related to university infrastructure, had the highest grade, a mean

of 4.05, from respondents whose jobs do not qualify them to use digital technology in education. With a mean score of 3.99, item 2 placed second, showing that the structure of the university curriculum is inappropriate for digital transformation.

VI. Discussion

According to the results, the faculty members employ digital technology highly; this is due to the Palestinian universities has transformed into a rapid, and simple digital education, as the Covid-19 pandemic resulted in the rise of e-learning on unprecedented (Abu Mukh,2021).

At the same time, the study questions showed that the employment of digital technology in university education in Palestine still encounters significant challenges. This is associated with several factors, including those related to the Palestinian context, and the other is related to the nature of digital technology.and this is confirmed (Shriam,2012; Mubaid,2020)

This made teaching and learning based on digital technology more formal where the limits of the interfaces do not exceed transmission and reception. However, it also made the teaching method modular and traditional, depriving education of its social and structural value. This transformation revealed the depth of the digital gap that Palestinian universities suffer from (Tanira, 2017).

In addition to this sudden transformation, the reality of digital technology in Palestinian universities faces many difficulties related to infrastructure, curricula, university lecturers and students (El-Gamal, 2020).

Furthermore, the absence of a system of digital citizenship values also significantly influenced (Aburub,2019). This has limited the effectiveness of digital technology employment and led to many negative behaviors among students, such as cheating on exams, students' lack of commitment to meetings and copying or stealing homework. In addition, this made evaluating students by academic lecturers difficult and complex, which negatively reflected in university educational outcomes.

The economic factor associated with digital technology is also significant where control and power exist. This resulted in a new digital gap. This discrepancy does not mean employing digital and logistical skills such as technical knowledge and training, but rather the increasing use and control of technology by economically dominant societies compared to the marginalized, which has lost creativity and made them centralized in affluent societies (Rapanta, 2020).

This is one of the crucial factors in using digital technology. Since its development and logistical support often depend on donor countries' aid programs. Several variables, the most important of which is the political aspect, make the development process a non-strategic but relatively progressive, affecting this support.

According toNoble (2017) digital technology is not neutral because its development is related to social standards, the political system, and the dominance of powerful companies. Therefore, it is not available to everyone, which makes it carry political and social interests in its contents when designing technical programs(Kopty, 2018).This limits the ability to use it and its effectiveness by users from other environments that do not belong .This was confirmed by the results of this study, which showed that employing this technology did not exceed the average degree, as well as its effectiveness, as it obtained a low score.

Using digital technology is affected by cultural and social factors, whether by faculty members or students. This background is reflected in the extent of its employment and effectiveness. Therefore many specialists called for adjustments to the structure of technologies to suit the cultural backgrounds of users(Bastianes, 2018).

VII. Conclusion

The results revealed a reluctance to use it, thus damaging its effectiveness. This shows that there are many challenges still facing the use of digital technology, which require infrastructure development, training of teaching staff, development of the educational curriculum under the requirements of digital technology, and the design of neutral technical programs that reflect social and cultural values. The studies that analyzed the reality of employing digital technologies in Palestine revealed several challenges, (Mubaid, 2020; Al-Jamal, 2020; 2017). It also requires liberating digital technology programs from economic domination because technical tools seek to achieve purely profitability goals. According to Selwyn (2009) the use of technology in educational settings is dominated by markets, profit and commerce rather than pedagogy and learning theories.

Considering the results of the study, it is noted that one of the challenges of employing digital technology and its effectiveness in educational institutions is the phenomenon of cheating on exams. This requires thinking about alternative exam strategies and moving towards the "learning to learn" method. This method is directly related to self-regulated learning SRL. According to Bernackietal (2011) the technologically enhanced learning environments (TELEs) represent an opportunity for students to build their ability to self-regulate, and for some, leverage their ability to apply self-regulated learning (SRL) to acquire knowledge because TELEs can promote

SRL and are best used by those who can self-regulate learning. SRL training should occur before the task or be embedded in the TELE. Knowledge acquisition in TELEs is supported by learner self-regulation and design features that include immediate and adaptive feedback and tools supporting SRL behaviors.

This issue related to cheating in exams reflects a serious issue represented by the absence of the ethical aspect in the digital educational environment, which requires focusing on this aspect in the ethical codes of the Palestinian universities and making ethical issues an integral part of the structure of the educational system.

The transformations brought about by the educational system in the digitization process must be considered, along with the need to focus on the ethical aspect of the digital environment (Salhab et al.., 2021). According to Waston (2006), ethics ought to be a component of all activities practiced by the individual with himself or others among university students in distance learning.

Furthermore, the Palestinian university education system has a chance to improve digital transformation; it can use the most effective crisis recovery strategies as a basis for long-term improvements in areas such as assessment, teaching methods, technology and finance. Therefore, this is a worthy topic to conduct studies on, especially regarding the implications of the digital technology environment on the moral concepts of university students.

FINDINGS: The authors declare that no funds, grants, or other support were received during the preparation of this manuscript.

Data Availability Statement: Not applicable.

Informed Consent Statement: Informed consent was obtained from all participants involved in the study.

Conflicts of Interest: The authors declares no conflict of interest.

Institutional Review Board Statement: The study was conducted in accordance with the declaration of Helsinki, and approved by Scientific Research Ethics Committee in Arab American University in Palestine.

Acknowledgments

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