

**Deanship of Graduate Studies
Al-Quds University**



**The Impact of E-learning on Students and Lecturers
Perspectives in Dental Colleges during the COVID-19
Pandemic in Gaza Strip**

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**The Impact of E-learning on Students and Lecturers
Perspectives in Dental Colleges during the COVID-19
Pandemic in Gaza strip**

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Thesis Approval

The Impact of E-learning on Students and Lecturers Perspectives in Dental Colleges during the COVID-19 Pandemic in Gaza strip


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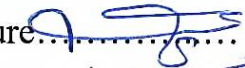
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Jerusalem- Palestine

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Dedication

I dedicate this work to my family with tremendous love, and gratitude.

To my parents who taught me how to be myself and always believed that “I could do it”.

To my dear wife, for her understanding, support and encouragement.

To my son and daughter, Fatima, Ramadan, Sara and Salma.

To my brothers, sisters and my friends.

To everyone who contributed to get this study a reality.

Thank you for everything.

Mohammed Ramadan Hassan Shamia

Declaration

I certify that this thesis submitted for the degree of the master is the result of my research, except where otherwise acknowledged, and that this thesis or any of its parts has not been submitted for a higher degree to any other university or institution.

Signature:

A handwritten signature in blue ink, enclosed in a blue oval. The signature is stylized and appears to be the name of the author.

Mohammed Ramadan Hassan Shamia

Date: 3/6/2023

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Mohammed Ramadan Hassan Shamia

Abstract

The aim of the study is to determine the impact of E-learning on students and lecturers' attitudes in dental colleges during the COVID-19 Pandemic in the Gaza strip.

The study design was descriptive, analytical, and cross-sectional one, the selected sample size was 300 students who had participated were undergraduate students in dentistry at different educational levels, the third, fourth, and fifth levels at Palestine University and Al-Azhar University in Gaza Strip. The participants were selected through a proportional stratified sample. Quantitative data was collected through a self-administered questionnaire developed by the researcher, in addition, four focus group discussions were conducted with purposively selected 34 participants from different educational levels using a semi-structure interview questionnaire. The response rate was 100%. The overall reliability was high (Cronbach's alpha 0.892). Data was entered and analyzed using the SPSS program for the quantitative data while open thematic techniques were used to analyze the qualitative data.

The study found that the total mean of the study dimensions for the 300 students was (3.41 7/7= 68.20%) for all domains indicating that their perception is good about e-learning. The highest mean was about the "Dimension 6: Obstacles" domain (3.92 6/7 = 78.4%) revealing that the general perception of this domain was negative, and the lowest mean was Dimension 4: "The use of E-learning" (3.03 4/7 = 60.6%), and the "Dimension 3: e-learning infrastructure" domain (3.24 3/7 = 64.8%).

The study results regarding the students showed that the average of student's male is higher statistically significant compared to females in the mean of the Dimension 1: logistical support, Dimension 4: the use of E-learning, Dimension 5: Student readiness, Dimension 7: the advantages of distance E-learning and domain as a total ($P < 0.05$). While the table showed that there is no statistically significant difference in other studied domains such as Dimension 2: Human preparation, Dimension 3: distance education infrastructure, and Dimension 6: Obstacles ($P > 0.05$). This result can be explained by the small sample size of the participating males, which amounted to 70 male students compared to 230 female students.

The study results regarding the students showed that there is a statistically significant difference between the E-learning method in the mean of the studied domain as Dimension 4: the use of E-learning, Dimension 5: Student readiness, Dimension 6: Obstacles®, Dimension 7: the advantages of distance E-learning and domain as total ($P < 0.05$). While the test showed that there is no statistically significant difference between the E-learning method in the mean of the studied domain as Dimension 1: logistical support, Dimension 2: human preparation, and Dimension 3: distance education infrastructure, ($P > 0.05$).

The study also found that the total mean of the study dimensions for the 20 lecturers was (3.47 7/7= 69.4%) for all domains indicating that their perception is good about e learning. The highest mean was about the "Dimension 6: Obstacles" domain (4.36 6/7 = 87.1%) revealing that the general perception of this domain was positive, and the lowest mean was "Dimension 4: the use of E-learning" (3.00 4/7 = 60%), and "Dimension 3: distance education infrastructure" (3.06 3/7 = 61.22%).

Based on the results found, the researcher recommends lecturers preparation programs and professional development programs for faculty members including special courses and programs for distance education, explaining its mechanisms, learning methods, evaluation methods, and tests in distance education. The researcher recommended also the need to educate the local community and change their perception towards graduates and students of distance education by granting them confidence and conviction in their abilities and competence.

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List of Abbreviations

ANOVA	Analysis of Variance
COVID-19	Coronavirus Disease - 2019
ERL	Emergency Remote Learning
FAO	Food and Agriculture Organization of the United Nation
FGDs	Focus Group Discussion
ICT	Information and Communication Technology
IFAD	International Fund for Agricultural Development
ILO	International Labor Office
MERS	Middle East Respiratory Syndrome
MoH	Ministry of Health
NGOs	Non-Governmental Organizations
OCHA	Office for the Coordination of Humanitarian Affairs
OERs	Open Educational Resources
PCBS	Palestinian Central Bureau of Statistics
PNA	Palestinian National Authority
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SPSS	Statistical Package of Social Science
TSE	Teaching Self-Efficacy
TAM	Technology Acceptance Model
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNRWA	United Nations Relief and Works Agency for the Refugees of Palestine in the Near East
WHO	World Health Organization

Chapter One

Introduction

1.1 Background

Around the world, the COVID-19 pandemic has already had a devastating effect on public health, food systems, education, economics, transportation, and the workplace such as International Labor Office (ILO), World Health Organization (WHO), Food & Agriculture Organization of the United Nation (FAO) and International Fund for Agricultural Development (IFAD). Additionally, the pandemic is likely to lead to increased inequality and poverty (World Bank, 2020).

Schools and higher education institutions have frequently had to temporarily close due to COVID-19 around the world, affecting 1.5 billion students and unprecedented challenges are being faced by educational institutions and policymakers, such as how to deploy remote learning, prevent learning losses, and safely reopen schools and universities (UNICEF, UNESCO & World Bank, 2020).

The total closure of educational facilities, including schools, and the return to homeschooling were the first steps taken by Palestinian authorities to combat the COVID-19 virus. Occupation-related disruptions to the Palestinian educational system are ongoing (PCBS, 2020). The COVID-19 response's new obstacles, however, could exacerbate or even foster new gender disparities. Unfortunately, medical students may be negatively impacted by the rapid development of COVID-19 on their physical health, academic performance, financial situation, and mental health (Penna et al., 2023).

Additionally, there is a gender gap in technology access, with households headed by men having higher rates of access to the internet and electronic devices like smartphones, computers, and tablets. Furthermore, compared to 69% of women, almost 72% of men use the internet. Compared to 35% of families headed by men, just 19% of homes headed by women have computers (OCHA, 2020). Additionally, in 2017, nearly 54% of men and 71% of women thought that women should be able to access websites on the internet with the same freedom as men (PCBS, 2019).

The immediate challenges faced by many educational institutions have been identical to those faced in pre-tertiary education: temporary closures of institutions; a move to 'emergency remote teaching'; a complicated planning procedure to ensure that activities can resume safely in new conditions; and ensuring that disadvantaged students are not left behind (Farnell et al., 2021).

Additional questions about how to ensure the framework conditions to assure the quality, relevance, and sustainability of higher education systems in the aftermath of COVID-19 exist at the level of higher education systems. Policymakers will need to adopt strategic approaches to minimize the disruption of COVID-19 on the higher education system. In the midst of severe pressure on national budgets, policymakers will also be faced with the challenge of ensuring a level of public funding for the higher education system to meet the existing and recently arising needs of universities and students due to COVID-19 (Kara, 2021).

Few lecturers were using the site, and those who were did so for the most part for the most basic features, such as uploading course materials. The pandemic surprised most professors, as well as students who were inexperienced with online learning platforms, by pushing them to switch from traditional to completely online learning in a short period of time. As a consequence of a massive disaster, in contrast to online courses, which are initially planned and prepared to be delivered face-to-face, emergency remote teaching is characterized as a sudden intermediate transition in instructional delivery to an online delivery modality. (Hodges et al., 2020).

In this review, we explore the impact of the COVID-19 pandemic on the education and assessment of medical students, the repercussions on their mental health and future career plans, while investigating their experiences as 'frontline workers,' as well as institutional responses to these challenges. We also look at how this one-of-a-kind moment could serve as a springboard for significant improvements and the continued application of the "evidence-based" approach in medical education (Appleby et al., 2022).

1.2 Problem Statement

Due to the Corona pandemic in the world and the Palestinian territories, including the blockade Gaza Strip, all universities, schools, institutes, colleges, mosques, markets and wedding halls were closed, and conferences and other meetings were canceled, and a state of emergency was declared in the country. Then the transfer was made to electronic distance learning where lectures are given by recording, as well as educational materials through the university's electronic websites and through distance education programs such as the Zoom program. This resource needs electronic supplies and requirements such as a strong internet line source in the infrastructure of homes for the purpose of continuing electronic education remotely, and other problems are also that some students are not good at using websites, some of the lecturers were unable to deal with the various electronic platforms dedicated to distance education (Dhawan, 2020).

There were difficulties for students, especially in electronic exams, including interruption of internet service, lack of time and other difficulties. There is another aspect of the problems related to distance education, which is that in e-learning there is no direct contact and interaction with the lecturer similar to face-to-face education, and this reduces the process of interaction and discussion, taking up ideas and opinions and listening to students' inquiries (Sun et al., 2022).

Through this study, we shedded light on the influence of e- education in the Corona pandemic on the attitudes and opinions of students and lecturers. Because we were not prepared in terms of technical infrastructure, professional development, or skill set, emergency remote instruction necessitates different circumstances than typical.

The biggest challenge in remote education during the pandemic is a lack of preparation by schools, students, and their parents. The disruption of education in schools and universities emphasized the importance of making a quick shift to distance learning. It has created a slew of issues for parents, including a lack of infrastructure and abilities linked to their children's education (Misirli & Ergulec, 2021).

The majority of students required parental assistance in this emergency situation. Given the likelihood that comparable circumstances would arise in the future, parents' viewpoints are essential for directing and contributing to the process (Durisic & Bunijevac, 2017). With all

of this in mind, the main objective of the study was to learn more about the emergency remote teaching situation that exists in Gaza now as well as the students' understandings with remote learning throughout the corona virus outbreak.

1.3 Justification

During this pandemic, the need to replace daily life and hands-on education has cultivated the incorporation of a variety of innovative ideas into medical education around the world, including the introduction of new technological concepts and novel ways for medical educators to interact with their students. All of these novel approaches should be thoroughly investigated, since they may provide future inspiration for medical educators. Social media initiatives, virtual core clerkships and digital clinical placements, new teaching methods, remote patient consultation sessions, and even the usage of patient simulators are all examples of these. The researcher experienced emergency remote teaching in Gaza during the COVID-19 pandemic and the opinions of students and lecturers in conducting this study are to highlight the perception in this regard.

1.4 General objective of the study:

The aim of the study is to determine the impact of e-learning on students and lecturers attitudes in dental colleges during the COVID- 19 Pandemic in Gaza strip.

1.5 Specific objectives of the study:

1. To determine the attitudes of the students regarding the use of online e-learning modes.
2. To determine the attitudes of the lecturers regarding the use of online e-learning modes.
3. To find out the challenges of providing online learning in during the COVID-19 Pandemic in Gaza Strip.
4. To assess the relationship between socio-demographic factors and its relation with the attitudes of students and lecturers regarding the use of online e-learning modes.

1.6 Research questions:

1. Objective 1:

1. What is the perception of the students regarding the use of online learning?
2. Are the students aware of technological online-based support practices in teaching or learning processes?

2. Objective 2:

1. What is the perception of the lecturers regarding the use of online teaching?
2. Are the lecturers aware of technological online-based support practices in teaching or learning processes?

3. Objective 3:

1. What was the most obstacles face students and lecturers during the remote education during the COVID- 19 pandemic?
2. How these obstacles affect the education process from of lecturers and students point views?
3. What recommendations can be provided for the best techniques for emergency remote teaching and learning going forward?

4. Objective 4:

1. Are there any significant differences in attitudes toward E-learning technology students' demographic data?
2. Are there any significant differences in attitudes toward E-learning technology lecturers' demographic data?

1.7 Context of the study:

1.7.1 Socio -Demographic Context:

The region of historical Palestine, which runs from Ras Al-Naqoura in the north to Rafah in the south, is approximately 27,000 square kilometers (PCBs, 2022). Palestine is bordered on the north by Lebanon, south by the Gulf of Aqaba, east by Syria and Jordan, and west by Egypt and the Mediterranean Sea (Annex 2).

It is a small, 365 km² landlocked territory south and west of the Palestine country on the coast of Mediterranean Sea. The Gaza Strip, a coastline of 40 km, with a total population about 2.17 million by the end of 2022, the high density of population has many social and service provision implications (5,693 per Km²), (PCBS, 2022).

The importance of strategic setting of Palestine is that it is cross road three continents, Asia, Africa and Europe, which making it coveted place to many of the rapists over the centuries. Palestine was places under British mandate, finished by "Israel" establishment in 1948 in implementing the unfair and wicked Balfour Declaration in 1917 to providing a homeland for Jews, and as a result most of Palestinians became refugees in West bank (WB), GS, Jordan, Lebanon, Syria, and others countries (Abu-Lughod, 1971).

Based on population estimates prepared by (PCBS, 2022), there are about 14.3 million Palestinians worldwide by the middle of 2022, of whom about 5.35 million in the State of Palestine; 2.72 million males and 2.63 million females. The estimated population of the West Bank was 3.19 million (1.62 million males and 1.57 million females). While the Gaza Strip's projected population in the same year was 2.17 million (1.10 million males and 1.07 million females).

The percentage of individuals aged (0-14) years comprised 38% of the total population in mid-2022; which includes 41% in the Gaza Strip and 36% in the West Bank. The percentage of elderly population aged (65 years and above) reached 3% of the total population; of whom 4% in the West Bank and 3% in Gaza Strip in mid-2022 (PCBS, 2022).

Seven Palestinians who tested positive for (SARS-CoV-2) in Bethlehem on March 5th prompted the Palestinian authorities to proclaim a state of emergency. Schools, tourist destinations, mosques, churches, and parks were all shuttered for a month in an effort to combat the coronavirus. A curfew was imposed on March 18th, forcing everyone to adhere to social isolation rules and remain in quarantine unless an emergency occurred. This state of emergency was again extended by one month on May 4th for the third time.

Palestinian universities were affected by the ongoing occupation in the West Bank and the blockade of Gaza. This created a coercive environment for many Palestinian communities affected by further access restrictions, attacks on schools and other interferences with access to education including dismantling of education infrastructure (WHO EMRO, 2020). Adherence to mandatory preventive measures is critical to halting the virus's transmission, but it also depends on the general public's knowledge, attitudes, and awareness (Ahmed, 2022).

1.7.2 Socioeconomic Context

Similar to other countries of the world, the PNA has imposed a blanket ban throughout the Palestinian governorates for almost two months, to control the spread of the virus. Later, it has lifted the ban gradually, returning to normal life while strictly working to follow adherence to the preventive health measures set by the Palestinian Ministry of Health (MoH), to alleviate the severity of the crisis on the Palestinian economy, which was on the brink of collapse (MAS, 2021).

Many international and Palestinian institutions worked to produce estimates of the potential impacts of the pandemic on the Palestinian economy. All of them agreed it will have an overarching impact on particular sectors and social groups, whose recovery will not be immediate. In fact, some of the effects of the pandemic will not be easy to reverse, a process that might take years. This could have an adverse effect on students' academic performance in addition to having an influence on men and women. Women and girls may be the ones who suffer the most from prioritization of who gets the tools, time, and internet access due to increased pressures and logistical challenges brought on by persistent resource instability. In addition to the aforementioned, there is a rise in the prevalence of cyberbullying as more families and individuals turn to online platforms for communication and education as well as for crisis updates (Kee et al., 2022).

1.7.3 Environmental context

Gaza experiences frequent power outages, a lack of access to adequate sanitation facilities and supplies, economic insecurity, and high rates of poverty. The current electricity deficit in Gaza began with an Israeli airstrike on the GPP in June 2006 and continues to severely disrupt the delivery of basic services, undermining already vulnerable livelihoods and living conditions. Gaza has three sources of electricity: the GPP, which has been operating at approximately half or less of its capacity (60 out of a potential 120 mega watts (MW)); and electricity purchased from Israel (120 MW) and Egypt (28 MW), via 13 cross-border feeder lines. Combined, these are able to meet less than 45 per cent of the estimated 470 MW electricity demand. The power supply has been significantly impaired over recent years by various factors, including the lack of funding for fuel for the GPP; the impact of unrepaired damage caused by Israeli attacks on the GPP and power networks; the lack of upgrade to the network; and the recurring malfunctioning or breakdown of the Israeli and Egyptian feeder

lines. Due to these obstacles, distant learners have limited access to the tools and resources they need. Similarly, the decade-long occupation in the West Bank, including East Jerusalem, has resulted in a deficient infrastructure for holding digital rights or having access to technology resources. For example, Palestinians in the West Bank have just recently been able to access cellular data, and even then they are subject to intense surveillance from both Israeli security services and the Palestinian authority (OCHA, 2015).

1.7.4 Healthcare systems

The MoH is the top administrative body for all healthcare providers in the Gaza Strip in the Palestinian context. Because there are four main healthcare providers in Palestine, the healthcare system there is more complicated; MoH, NGO's, the private sector for profit service providers and United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA). The Ministry of Health (MOH) is the primary provider of health care in the Gaza Strip. It provides primary, secondary, and tertiary care to the entire population and purchases advanced medical services by referring patients to nearby nations and other private and NGOs. When needed, UNRWA purchases secondary and tertiary care services in addition to providing primary health care (PHC) to the refugee people (*Health in the Gaza Strip* / UNRWA, 2023).

When the new corona virus is affecting the Palestinian national authorities, the governments are reconfiguring their health care systems, have closed their borders, schools and non-essential businesses, and established lockdowns in to stop the virus from spreading, people are being restricted from moving around and social distance is being enforced. On the other hand, allied to the direct health impact on the population, these measures will, inevitably, lead to disruptions of social life and wellbeing, changes of human behavior, sharp rises in unemployment, and reductions in household. What is crucial about this dependence is less related to the immediate health impact of the COVID-19 pandemic, which is producing enormous cutbacks in output and employment across most of the globe, rather than the medium and long-term consequences in the future.

1.8 Operational Definitions:

E-Learning: E-Learning (short for electronic learning) is an umbrella term that refers to all types of training, education and instruction that occurs on a digital medium, like a computer or mobile phone.

Blended learning: Mixed mode of delivery combining traditional classroom learning with eLearning techniques.

Distance learning: The delivery of education where student and instructor are not co-located and may be in different time zones. E-Learning technology is used to deliver predefined structured curricula fully, using eLearning technology or in a combination of eLearning and face-to-face learning.

Chapter Two

Literature Review and Conceptual Framework

2.1 Conceptual Framework

Conceptual framework serves as a road map for the study's design and execution and illustrates the study variables. It was created by the researcher after reviewing the pertinent literature and earlier study.



Figure (2.1): Conceptual Framework developed by the researcher.

The upper diagram of the conceptual framework of this research shows the e-learning constituents relevant to the perspectives of dental school students and lecturers during COVID-19, which includes logistical support, human preparation, distance education infrastructure, the use of E-learning, student readiness, obstacles and the advantages of distance E-learning. Figure (1.1)

2.2 Literature Review:

2.2.1 Concept of Online learning

All over the world, online classes and learning are becoming more and more common in the education system. Education has become more convenient and accessible to everyone thanks to the internet. The education sector in Gaza strip has been an ever-growing entity. In contrast to the traditional face-to-face classroom approach, the introduction of online classes at universities and colleges has only recently been considered in Palestine. When it comes to the Palestinian educational system, the face-to-face classroom approach has always been the most prominently used. The adoption of online channels of education has been hampered by familiarity and convenience of the use of offline techniques, as well as a lack of demand for online teaching methods.

However, in light of the current COVID-19 pandemic, educational boards have mandated the delivery of online classes at the college and university levels. Covid-19 has brought out a drastic change in the educational system in not only Palestine but rather the entire world. Universities across Palestine as well as around the globe have moved to the virtual classes suspending physical classrooms. Online education in Palestine is at an early stage of development. In Palestine, while this transition has been a mixture of both positives and negatives for most private universities, the government colleges and universities are still adapting. While technology makes things accessible and easier, it can also be limiting, especially in Palestine, where many students face a challenge in terms of access to the internet. As a result, problems with attendance and participation in online sessions arise, making it difficult to adapt to online education channels (Nambiar, 2020).

Meanwhile, in a face-to-face classroom situation, lecturers and students can receive rapid feedback on the quality of the lesson, delivery, and experience. A lecturer can watch students' body language in a classroom setting, and these non-verbal indications allow the lecturer make quick adjustments in their teaching method to best meet the students' requirements. When compared to online channels, additional questioning and individualized attention in the classroom context allows for a more complete understanding of the student's understanding of concepts being taught.

In an online class, what is easily recognized and approached in a classroom requires a little more investigation and attentiveness. Investigating and assessing how online classes should be created and organized while taking into account the perspectives of students and lecturers should be an important aspect of developing online teaching and learning methodologies.

2.2.2 Perceptions and satisfaction with online learning:

Students' perceptions and satisfaction with online and face-to-face learning have been explored in previous research investigations. According to Fortune, some studies looked at 156 students who took and enrolled in either an online learning section or face-to-face learning of the Recreation and Tourism course at a multicultural university in Northern California, and discovered that there was no statistically significant difference in learning preferences between those enrolled in the two learning modes (Fortune et al., 2011).

Another study indicated significant differences in student satisfaction levels when online classes were compared to face-to-face learning of English as a foreign language (Tratnik, 2017).

When compared to their online counterparts, students taking a face-to-face course were shown to be happier with the course. Regarding the Palestinian education system, online courses are a newly introduced-teaching method and are not portion of systematic courses. Education specialists will be able to better understand and make adjustments to meet the needs of both the lecturers and the students by investigating and analyzing how online classes are being seen and experienced by students and faculty at various colleges and institutions in Palestine. Therefore, in order to effectively use these strategies, educational institutions and management who will be delivering online learning in the future need to have a better understanding of how both students and lecturers think, react to online classes as a learning mode. Another key finding from the study of past studies was that while evaluating online modes of education, the perspective of students was prioritized and taken into account over the perspective of lecturers.

The viewpoint of the lecturers is essential because if they, as educators, are dissatisfied and find the online method undesirable, the educational foundation itself will be weakened. Lecturers are also straining to learn this new manner or methodology of teaching as a result of the new advent of online classes (Nambiar, 2020). Consequently, this study's importance

lies in examining how lecturers and learners view online classes in comparison to in-person classes. The survey's primary target population was lecturers and students from Gaza City's institutions and universities. As a result, the following article summarizes the findings of a survey conducted to see how successfully this new method is being adopted by both lecturers and students, what are the general problems faced by them while taking online classes so as to help educational instructors and facilitators and college and university managements to recognize the changes that can be made to make online education more effective so that it can be incorporated with classroom teaching in the future.

2.2.3 E-learning and online learning development:

In order to improve both the learning experience for students and the teaching experience for professors, the results of this investigation will be used to establish or improve online programs.

Teaching and learning processes have been greatly advanced as a result of the incorporation of technological resources and creative educational methodologies. Various e-learning and online learning methods have been found to be beneficial for teaching and learning in the disciplines of health professions, including dentistry, in previous research. (Moazami et al., 2014), (Manzanares et al., 2020).

The students' knowledge gain and performance E-Learning was shown to be comparable to face-to-face methods as a consequence (Zogas et al., 2016), (Pei & Wu, 2019).

The term "blended learning" refers to the process by which students can learn independently, collaboratively, and interactively through both in-person and online instruction. However, to put it in a broader context, blended learning restructures courses that are planned, organized, and administered using a mix of physical and virtual learning activities, blended learning has already been shown to improve student satisfaction, motivation, engagement, and performance (Donkin et al., 2019), (Wang & Liu, 2020).

This strategy encourages active, self-directed learning and is now widely used in dental education as a supplement to traditional instruction. Several challenges were encountered throughout the process of transforming or moving to virtual education using the accepted online paradigm. These issues can be ascribed to a number of variables, including the fact that adapting modules to fit the online platform in a short period of time is a complex and

time-consuming operation, difficulty adapting to the new teaching and learning environment, inability to focus during online instruction due to lack of eye contact, gestures, and classroom environment, unsuitability of the home environment for the teaching and learning process, difficulty for students living in remote areas in accessing the online platforms, and this issue is underlined by (Reich et al., 2020).

Students can learn independently or through student-led projects in this new learning environment, and the contemporary curriculum is prepared for any future abrupt change, the recorded sessions can be viewed multiple times by students, and regular access to the materials offers more chances to consolidate knowledge. Furthermore, the faculties gained new abilities and experience that allowed them to adjust to comparable situations. For both lecturers and students, the transition from traditional education to online teaching bridges the gap between traditional and contemporary technological technology.

Despite prior studies that compared classroom and online learning (Moazami et al., 2014), (Schlenz et al., 2020). There has not been much research on the effectiveness of offered through a combination of learning strategies are student-centered active learning strategies versus complete online learning. Students' perceptions of combined virtual learning modules with traditional classroom instruction were reported in the majority of studies on distance learning methods. Student input could give useful data for evaluating distant learning and improving forthcoming education tactics. For that reason, the study aims to evaluate compared to classroom instruction, the medical study program's comprehensive distance learning from students' perspectives offers more flexibility. An online questionnaire to be distributed to the medical students at the end of the semester. We'll presume that students responded positively to distant learning as a new learning technique that was deployed during the COVID-19 pandemic.

In a normal setting, online education allows students to learn and teach from any location at any interval. The corona virus pandemic, however, led to an urgent switch from face-to-face instruction to distance learning at all educational levels, a practice known as emergency remote teaching (Hodges et al., 2020).

An emergency remote education program was formed in response to the epidemic. Because it was unanticipated and unforeseen, the situation was unlike the carefully thought-out typical method of online learning for lecturers, students, and parents. For the first time ever,

both instructors and students were required to take every class online. On the other hand, creating a successful learning environment for online learning requires rigorous instructional design and development because it is a complex process (Eregulec, 2019), (Palloff & Pratt, 2013).

The major purpose under these conditions isn't to reproduce a solid instructive eco framework, yet rather to give brief admittance to guidance and educational guides in a way that rushes to set up and dependable accessible during a crisis or emergency, as a result, the courses provided in this case should not be viewed as long-term remedies. (Hodges et al., 2020).

In a post-COVID world, the success of remote education will be greatly influenced by educators' current level of belief in distance education, as a differentiation between these two terms should be made. Furthermore, emergency remote teaching created an obligation for students in this situation, whereas well-planned distance learning provided a flexible and alternate learning environment. (Bozkurt & Sharma, 2020).

2.2.4 Emergency remote teaching obstacles:

The transition from online learning to emergency remote teaching presented new obstacles and opportunities on a social and technological level, affecting children's physical and emotional health. Learning occurs in a social setting with individuals' interactions through active involvement, scaffolding, and knowledge exchange, according to the social constructivism hypothesis. While schools and classrooms are vital venues for students to develop social experiences, student's homes have become the new educational setting in which they do not have physical social contacts with their lecturers or peers. As technology became the student's only channel to engage with lecturers and peers, social isolation and lack of interactivity were seen as key drawbacks of emergency remote teaching (Dong et al., 2020).

During the transmission of the virus, person's physical and mental health is likely to suffer from social isolation and a lack of participation as negative consequences (Brazendale et al., 2017).

Psychological repercussions are one of the negative effects as prolonged quarantine periods, worries of infection, annoyance and boredom, insufficient resources, stigma, monetary loss and inadequate knowledge (Brooks et al., 2020).

Other than these undesirable psychosomatic impacts, school cessations and time away from school, as well as colleagues and lecturers, have an impact on student's health. There is little engagement with classmates, friends, or peers and lecturers as a result of this (Brazeendale et al., 2017).

All stages of schools have an important function in this regard, not just in providing instructional supplies to student, however also in providing opportunities for pupils on the way to connect with instructors and get psychosomatic counseling (Wang et al, 2020).

2.2.5 Parent engagement:

Parents and students were influenced on a technological level, in addition to the societal issues. Parents and students who are used to face-to-face education and who lack technology equipment, expertise, and abilities find it challenging to follow remoteness learning lectures (Telli & Altun, 2020). Parental involvement in online learning settings has a substantial impact on learner education (Feng & Cavanaugh, 2011), (Lee & Figueroa, 2012).

Lack of technology access is one barrier to parent involvement in virtual learning environments (Holingworth et al., 2011), lack of enthusiasm in using technology and low technology self-efficacy (Povey et al., 2016) & (Beckmaan et al., 2019)

However research recommends that parent engagement remains a significant element in pupil education, the majority of researches on parent participation in student's learning concentration on old-fashioned school situations. Parent involvement in the education procedure is extremely significant for learner accomplishment because of the absence of physical attendance of lecturers and the period consumed by kids with their close relative through simulated education (Liu et al., 2010).

Parents might be regarded as one of the extreme significant shareholders of remoteness learning during emergency remote teaching since only they can actually monitor their children. Parents affect their children's learning through providing digital devices, a learning environment, and learning how to help their children, because their home has become their

different learning setting for the duration of the pandemic. Caregivers and fathers were put under a lot of stress as a result of this new circumstance (Chang & Satako, 2020).

While some research is being done to look into fathers' perceptions through this type of education experience, fathers' thoughts and understandings with emergency distant education may have an impact on the future quality and quantity of online learning. During the COVID-19 pandemic, researchers performed studies to better understand parents' ideas, attitudes, and experiences (Garbe et al., 2020), (Trazcińska-Krrol, 2020).

Be in a specific stage level, when the COVID-19 pandemic is finished, the educational system should remember the lessons learned from emergency remote instruction. Similar events or disasters are likely to occur in the future, prompting school closures and the implementation of emergency remote teaching. As a result, it is critical that we assess our experiences now in order to be better prepared for future emergency remote teaching demands (Hodges et al., 2020).

In such an emergency, the system frequently disregards the feelings of students and parents. Students and their parents, on the other hand, are regarding their learning, somatic health, and psychological health as a result of all of these emergency adjustments in the educational system (Brooks et al., 2020).

When things return to normal, the students, as well as their parents, will remember how they felt throughout this situation, as expressed by Bozkurt and Sharma. Given the prospect of future encounters with comparable events, parents' perspectives are critical in guiding and contributing to the process (Bozkurt & Sharma, 2020).

Universities must stay up with students' wants, interests, and expectations in today's higher education system, which is always changing. As a result, information technology and E-learning systems are viewed as critical components in universities' operations, with these institutions increasingly investing in online systems and gadgets (Popovici & Mironov, 2015).

However, in this technological age, one of the most significant issues facing universities is the integration of cutting-edge E-learning tools to enhance and support both teaching and education (Fischer et al., 2014).

2.2.6 E-learning and its complexity:

Due to its complexity, the concept of e-learning has been given many definitions. E-learning, to put it simply, is the process of developing learning experiences via the use of technology related to information and computers and systems. (Horton, 2006).

According to Engealbracht (2005) E-learning is an idea that uses electronic mass media to deliver remoteness education and instruction, including the web, CDs, smartphones, as well as television.

In a brief, E-learning is the route of transferring information and learning over the use of several electronic equipment's, and placing the idea makes it easier to comprehend within a context in which technology is utilized to satisfy people's desire to study and advance (Cohen, 2006).

In order to teach and interact with pupils, Isaac Pitman first practiced distance learning in 1840. The term "E-learning" is thought to have first entered the educational lexicon in the middle of the 1990s. (Kentnor, 2015).

The concept of remote learning can be understood as naturally progressing toward this type of online learning when the aforementioned variables are taken into account. A more thorough and inclusive definition of e-learning describes it as a style of instruction and learning that uses digital tools and resources to promote growth and raise standards in training and education. (Sangrà et al., 2012).

E-learning can also refer to a formal education system or a network in which electronic resources are used to spread information to a bulky viewers. These systems are only possible with the help of computers and the internet. (Babu & Sridevi, 2018).

E-learning has certain components that simplify and promote the education training progression. It covers a widespread variety of opportunities for switching data and submitting papers in a range of formats. There are no additional tools required because it is a web-based system, and users can access the content at any time after it has been posted (Raheem & Khan, 2020).

Single classes that students enroll in without classmates, Learning games, which use simulated activities to help students grasp and assimilate knowledge, blended learning, which mixes traditional and online classes, and virtual classrooms, which are built similarly to traditional, face-to-face courses, and mobile learning are some of the types of E-learning identified by Horton (Fischer et al., 2014).

E-learning is therefore a complex process that includes elements like technological tools and design, e-learning platforms, material, and users/participants (Cohen & Nycz, 2006).

E-learning is different from conventional or other forms of learning because it emphasizes personalized learning in addition to education. To situate it an alternative way, while old-fashioned teaching places a greater emphasis on the teacher, the development of e-learning has led to a shift toward an education that places more emphasis on the student (Vallée et al., 2020).

There may be distinctions between traditional and online learning in terms of primary sources of information, assessment, or educational quality. While in traditional education, students are exclusively evaluated by their lecturers, who also serve as their primary source of information, in online education, students are reviewed by their peers and the quality of education is influenced by the level of training that lecturers sustainability have in using technology, and also their teaching style (Cohen & Nycz, 2006).

Cheung and Cable identified and described eight principles that are at the core of effective online teaching, including encouraging contact between students and faculty, collaborative learning, quick feedback, active learning, task time, which encourages students to set aside more time to complete tasks, and high expectations. To inspire and motivate pupils, lecturers should express their expectations, which should include a variety of learning opportunities and the use of technology (Cheung & Cable, 2017).

2.2.7 Educational Systems and technologies:

Given that, the advancement and application of methods and expertise preferred the development and growth of learning chances (Zare et al., 2016), the use of E-learning in higher education and students' perceptions of its utility became topics of interest for many researchers.

The model explains the relationships between a system's characteristics, how individuals perform when using it, and the outlook that individuals might have toward via it, which is affected by observed efficacy and simplicity of usage (Venkatesh et al., 2003).

All students believed the online learning module they participated in was helpful and simple to use, stating that they were able to understand the information and navigate and access documents with ease, according to a study that examined students' perceptions of how an E-learning platform was implemented and integrated using an online model as a theoretical background (Vitoria et al., 2018).

A comparable research was conducted at the College of Jordan using the TAM model (Almarabeh, 2014), assured that students' opinions toward using E-learning are directly impacted by perceived usefulness and ease of usage. In addition, TAM was used to examine lecturers' perceptions of e-learning. The findings revealed that, when combined with prior knowledge, instructors' perceptions of e-learning influenced their behavior and how they use (Mahdizadeh et al., 2008).

In general, the literature supports the use of E-learning in higher education by demonstrating its utility, efficacy, and favorable impact on student performance. According to a study on the impact of E-learning on students and lecturers, the majority of lecturers believe that E-learning has the potential to improve the educational process by improving collaboration and communication with students, providing flexibility, and assisting students in better understanding lectures (Burac et al., 2019).

According to (Odit-Dookhan, 2018), he found that students have a positive attitude toward online learning and that their sentiments improve when they think that online learning systems are easy to use.

Another study discovered that adding online instruction to conventional instruction has benefits improved students' learning experiences and raised their engagement with lectures (Lochner et al., 2016).

A study that compared traditional and online learning found that while a large percentage of students said they absorbed more information in face-to-face classes than online, they had a positive impression of their overall online experience, despite having encountered difficulties while using E-learning platforms (Alsaaty et al., 2016).

While most studies emphasize positive attitudes toward E-learning, similar studies found that students believe online courses do not have the same value as courses taught in the classroom, and that students would prefer blended learning, which combines online and face-to-face classes, to only online learning (Tagoe, 2012).

E-learning models have drawn considerable amount of interest recently as potential solutions to the shortages revealed by face-to-face instruction, and they are an effective tool for removing barriers to entry for training in the fields of medicine (Frehyiwot et al., 2013). The following issues, be that as it may, are carried out in e-learning clinical schooling: deficient foundation, slow speed and bad quality of recordings or visual results, perusing troubles on PC screens, web download times that are too lengthy, lacking PC services, and regular power deficiencies (Agrawal et al., 2011), (Kaliyadan et al., 2010).

A recent coronavirus (2019-nCoV), which began on December 12th, 2019, in Wuhan, China, produced an outbreak of acute respiratory syndrome in people (Zhu et al., 2020). Tourism restrictions, isolations, social withdrawal, and increased health are regarded as techniques used by the public sector to stop viral epidemics (Bahji et al., 2021). Universities were pushed to teach students through online learning protocols as a result of that pandemic. The ability to overcome the forced expulsion of university students was made possible by E-learning solutions for educational institutions. However, during this pandemic, online education is seen as a backup and emergency strategy. To implement this strategy, educational institutions need well-thought-out plans, a substantial budget, sufficient technical assistance, and qualified personnel (Kaliyadan et al, 2010). In addition, Students should also be motivated and possess the skills necessary to embrace and use e-learning. This is crucial in accepting E-learning initiatives, whether they are implemented across an educational institution or at the faculty level (Frehywot et al., 2013).

Additionally, the COVID-19 epidemic and the need for social distance have made it difficult for all stakeholders to go online because they must do it while under time and resource constraints. It must be proven that implementing an online learning environment is more than just a technological challenge. It presents an instructional and pedagogical problem. Online education must therefore be well-prepared in terms of curriculum, assessment, and teaching materials. Technology is the vehicle for delivery, thus instructional, content, and technology teams must work closely together. An abrupt mobilization of all university personnel and resources is necessary to implement a

pedagogical change that involves closing universities and removing students and professors from the classroom (CoSN, 2020).

This digitalized revolution can synergy the educational ambitions and interests of the students who have become digital addicts. In essence, COVID-19 has provided us with the opportunity to adopt online learning as education systems need to be abreast with the rapid emergence of new technologies, thus making online, blended and remote learning a necessity at the tertiary level not only in Fiji but the world over (Zaimakis & Papadaki, 2022).

The essential shortfall of educator preparing and support was underlined as a typical worry for instructors in the midst of the episode of the Coronavirus pandemic. Many teachers who took part in various research claimed that they had no prior exposure to online instruction and had not received any training (Ma et al., 2021), (Toto & Limone, 2020). In order to accomplish this, teachers still urgently require additional training in creating and administering online curriculum. Teachers' online TSE would rise if they participated in training seminars aimed at improving their online teaching abilities, notably in terms of instructional tactics, learner participation, and handling classes (Richter & Idleman, 2017).

Chapter Three

Methodology

This chapter describes the methodology of the study, which covers the study's design, demographic, study setting, time frame, sample size, sampling technique, eligibility criteria, data collecting, and validity and reliability of the study instrument. Additionally the data gathering procedure, analysis, study limitations, and moral considerations.

3.1 Study Design

The data in this study have been triangulated (quantitative and qualitative) using a mixed-methods approach. This study is a descriptive, analytical, cross-sectional one, this design was applied to study the impact of E-learning on students and lecturers' attitudes in dental colleges during the COVID-19 Pandemic in the Gaza strip. These techniques were chosen based on their efficacy, providing us with the most beneficial means through which a large number of students be included in this study. The quantitative part has given us the quantitative perception, while the qualitative part has revealed the reality behind this perception by gaining a deeper understanding of the perspectives of the participants in their natural environments.

3.2 Study Population

The participants in this study was undergraduate students in dentistry at the third, fourth, and fifth levels at Palestine University and Al-Azhar University, in addition to the faculty members of both colleges. The total number of students enrolled in dental schools is approximately 684 students. In addition, the total number of faculty members of both colleges are 20 lecturers.

3.3 Study Period

The research is being conducted after the approval of Al-Quds University and obtaining ethical approval from the Helsinki Committee in February 2022. The data collection tool was created using a self-administered questionnaire and translated into Arabic in May 2022. The pilot study was carried out in May 2022, and then data collection initiated in May then was ended in July 2022. Data entry and cleaning were conducted in July 2022. In the following period, up until the end of, data analysis and the writing of the final research report were completed in November 2022 (See annex2).

3.4 Sample size

The Study samples were selected from different educational levels, the third, fourth, and fifth levels of both dental colleges of the two universities. According to the records of students, the total students' number is 684, with about 454 students from Al-Azhar University and 230 students from Palestine University. The maximum amount of error that is permissible is 5%, thus by applying the Raosoft site, the total sample size was calculated at 684 students from both dental colleges, with the required confidence level was 95%, circulated according to the instructive levels as the following: the students in the fifth level (66), the fourth level (84), and the third level (97). The recommended sample size which was calculated according to the Raosoft site was 247 students (See annex 3).

3.5 Sampling

3.5.1 Sampling process

For the quantitative part, The Stratified proportional sample method was used to select the desired sample size, which was obtained from both Palestine and Al-Azhar universities. The number of students in this sample is (300) and it was selected from the different levels of dental colleges in universities, as the fifth level (24), the fourth level (39), and the third level (60) from Palestine University with total (123). Whereas, the number of students of the dental college from Al-Azhar University at the fifth level (47), the fourth level (57) and the third level (73), with a total (177). In addition to 20 lecturers of academic staff in both colleges, who have taught at least one course on semester educated and evaluated students virtually during the Coronavirus pandemic lockdowns (Table 3.1).

For the qualitative part; 34 students and lecturers were purposively selected and called on a voluntary basis to participate in four focus groups, three groups of students and one group of lecturers. Focus groups discussion (FGDs) were selected in a way that ensures they represent female and male students, different educational levels from both dental colleges, and various administrative positions for lecturers.

Table (3.1): Number of students according to Academic level on each university:

Academic level	Palestine University	Al-Azhar University	Total
3 rd level	60	73	133
4 th level	39	57	96
5 th level	24	47	71
Total	123	177	300

3.6 Eligibility Criteria

3.6.1 Inclusion criteria:

- Third, fourth and fifth-level dental college students as well as university lecturers who had at least one course that was electronically taught and graded during the Coronavirus pandemic lockdowns were incorporated in this study.
- An opening question was used for whether students are taught and assessed virtually and whether faculty members are involved in online learning/assessment, and was used to exclude students and faculty who were ineligible to participate in this study.

3.6.2 Exclusion criteria:

- This study excluded students who were not taught and assessed online from the third, fourth, and fifth-level of dental college students.
- Lecturers who weren't engaged in virtual/online learning or student evaluation were not included.

3.7 Study Setting

The study was carried out in the faculties of dentistry at Palestine University and Al-Azhar University.

3.8 Study Instruments

The first information was a structured survey that was self-administered and that the researcher created after examining the pertinent literature with the guidance of the academic supervisor (Annex 6). Each item on the questionnaire was assigned a serial number because

of the way it was laid out. The questionnaire was translated into the Arabic language with an explanatory and descriptive letters (Annex 7).

The questionnaire is composed of four parts:

The first part covers the socio-demographic data of the participants, the workplace, and the qualified and professional data. It consists of 9 questions for the students form and 11 questions for the lecturer form.

The second part assess students' perceptions about the impact of e-learning on students and lecturers' perspectives in dental colleges during the COVID-19 pandemic in the Gaza strip using the five options exist for the Likert model scale: ((1) strongly disagree, (2) disagree, (3) neutral, (4) agree, and (5) strongly agree). The questioner asked 83 questions, which were broken down into seven domains as follows:

1. Logistical support (8 items).
2. Human preparation (7 items).
3. Distance education infrastructure (9 items).
4. The use of e-learning (12 items).
5. Student Readiness (11 items).
6. Obstacles (18 items).
7. The advantages of distance e-learning (18 items)

3.9 Procedures:

At the end of the second online semester, in May 2022, a survey was conducted online to gather data. The university had committed to offering online courses throughout the semester, with instructors creating and planning their own curricula. We publicized our research project and disseminated the survey via social media and email. An online survey was completed by pre-service lecturers. All participants' students and lecturers were voluntarily participated, and they were made aware of the investigation's goals and how the data would be used in accordance with the ethical standards for using human subjects in research at an early stage. Both data confidentiality and participant anonymity were guaranteed.

Quantitative data collection was collected by one questionnaires for students and lecturers that were created by the researcher following a thorough literature analysis and were created using Google Forms.

The questionnaire is attached with a cover letter explaining the purpose of the study, the way of responding, the aim of the research, and the security of the information in order to encourage a high response. Both Arabic and English languages have been used in the design of the questionnaire.

Qualitative data were collected from participants by using 4 focus groups from lecturers and students using structured open-ended questions.

3.10 Pilot study

A pilot study has been carried out on 57 participants and was applied to the students since they represent the largest percentage of the study to examine the validity and reliability of the questionnaire, and they have been added to the study.

The purpose of the pilot study is to ascertain the clarity and feasibility of the tools and to detect any possible problems concerning data collection tools that may face the researcher and interfere with data collection.

3.11 Scientific rigor

Validity and reliability

3.11.1 Validity of the questionnaire

The degree to which an instrument accurately reflects the abstract concept being investigated can be used to define the instrument's validity. "The degree to which an instrument measures what it is supposed to measure is referred to as its validity." The absence of systematic errors in the measuring instrument indicates high validity. When a tool is valid: It accurately describes the idea it is aiming to quantify and measure. Good validity necessitates careful sample selection and research design. The supervisor and eight experts from the tendering and bidding environments looked over the revised questionnaire to see how the questions were answered and how the results were analyzed. The experts agreed that the questionnaire was valid and sufficient to measure the intended purpose.

3.11.2 Half- Split Method

The correlation between the forms was 0.791, the Unequal Length Spearman-Brown Coefficient was 0.881, and the Guttman Split-Half Coefficient was 0.936, as shown in Table (3.2). The questionnaire's high level of reliability is assured by this result.

Table (3.2): Split and half for each domain of the questionnaire

Half-Split			R
Cronbach's Alpha	Part1	Value	0.791
		No. of items	42
	Part2	Value	0.802
		No. of items	41
	Total No. of items		
Correlation between forms			0.881
Spearman-Brown coefficient	Equal length		0.937
	Unequal length		0.937
Gutman Split-half coefficient			0.936

3.11.3 Reliability of the instrument

The degree of consistency with which an instrument measures the attribute it is intended to measure is what determines its reliability. The analysis and the test is administered repeatedly to the similar sample of participants, and the results are compared using a reliability coefficient to calculate. And can be accomplished by utilizing Cronbach's Alpha, and Table (3.3) provides the values of Cronbach's Alpha for each participant questionnaire domain. The table demonstrated domain dependability; Cronbach's Alpha scores ranged between 0.663 to 0.934. For the complete survey in the pilot sample, Cronbach's alpha is equal to 0.892, indicating the survey's high level of reliability.

Table (3.3): Reliability of the studies for each questionnaire area or domain

No	Domain	No. of item	Cronbach's Alpha
1.	The first dimension: logistical support	8	0.663
2.	The second dimension: human preparation	7	0.727
3.	The third dimension: the infrastructure for distance education	9	0.691
4.	The fourth dimension: the use of e-learning	12	0.813
5.	The fifth Dimension: Student Readiness:	11	0.886
6.	The sixth dimension: Obstacles	18	0.891
7.	The seventh dimension: the advantages of distance e-learning	18	0.934
Total		83	0.892

3.12 Data Collection:

1. For descriptive information were two self-administer questionnaires, one for students and one for lecturers, were used to gather information about how each group felt about distance learning. The researcher distributed the questionnaires to the participants by using Google Forms via e-mail, and social media to facilitate accessibility. The questionnaire took about 16 minutes on average to complete. The title and purpose of the study, as well as the researcher's identity, are outlined in the two questionnaire cover letters.
2. For the qualitative part, 4 focus groups were made for the students and lecturers of about (7-11) participants for each group, and structured questions were used during the focus groups. Prior to conducting focus groups, participants were carefully selected, and the purposes of the meeting informed an overview of the time allowed for questions, and other instructions provided. To avoid orienting or influencing the participants' initial thoughts, the researcher introduced the study objective shortly after the first question. The scientist and the note-taker guaranteed that everybody's bits of feedbacks were communicated and that motions and tones are taken note.

3.13 Responsive rate:

There was a 100% response rate. All study members consented to take part in this review.

3.14 Data Management:

3.14.1 Data entry:

The data was collected using personal computerized program as SPSS "Statistical Package for Social Sciences" version 25.0. Data is entered after coding the questions and then cleaned and checked.

3.14.2 Data Analysis Strategy

- Quantitative part:

For data input, the researcher utilized the Statistical Package of Social Science (SPSS) version 25 application (IBM Corporation). On the same day of data collection, the researcher used the computer application SPSS to code the questionnaires and enter the data. With assistance from the supervisor, the researcher performed data cleaning and analysis. For the research variables, frequency tables were created, and for continuous numeric variables, measures of central tendency such as means, medians, mode percentages, and standard deviations (SD) were computed. The instrument's validity and reliability were examined, and tests using the independent t-test and analysis of variance (ANOVA) were conducted for questions using the Likert scale.

- Qualitative part:

The open-ended questions in the questionnaire and FGDs produced qualitative results. Digital recording was used to conduct research and collect data. Following each focus group, debriefing reports of the FGDs were written and then translated into English. Additionally, nonverbal clues, group dynamics, and unprompted insinuation were noted and taken into consideration. Themes and domains from the study are used to arrange and categorize the data.

3.15 Ethical and administrative considerations

- After discussion of the proposal, academic approval was obtained from Al-Quds University Public Health College.

- In order to carry out the study, the Helsinki committee granted ethical approval (Annex 4).
- Administrative approval was obtained from both dental colleges to implement the study (Annex 5).
- A comprehensive explanatory form was given to each participant and attached to the questionnaire to guarantee their rights and consent; this form also explains the purpose of the study, guarantees the privacy of their data and provides instructions for completing the survey. A statement stating that their participation is voluntary was also included.

3.16 Study limitations:

- Our study was limited in that it did not evaluate students' performance.

Chapter Four

Results and Discussion

The conclusions from the examination of the data gathered are illustrated in this chapter. Data analysis reveals descriptive, statistically-based analysis, and focus group-based qualitative data analysis. This study largely underutilizes crucial methods like t-tests for dependent and independent variables and one-way ANOVA analysis.

4.1 Results for student's perception:

4.1.1 Descriptive statistics student's perception Part

4.1.1.1 Sample distribution according to socio-demographic information

The current study was a cross-sectional study with 300 participants. Among the socioeconomic variables that were examined gender, age, educational level, university, governorate, a fixed internet line at home, used temporary internet cards, and the E-learning method.

Table (4.1a): Distribution of the study population based on their sociodemographic data

Items		Number	%
Gender	Male	70	23.3
	Female	230	76.7
	Total	300	100.0
Age groups	The average age = 21.7±1.1 years.		
	20 years or less	30	10.0
	21-22 years	201	67.0
	>22 years	69	23.0
	Total	300	100.0
Study level	3 rd level	133	44.3
	4 th level	96	32.0
	5 th level	71	23.7
	Total	300	100.0
University	Palestine	123	41.0
	Al-Azhar	177	59.0
	Total	300	100.0
Governorate	Gaza	161	53.7
	North Gaza	30	10.0
	Middle zone	45	15.0
	Khan Younes	43	14.3
	Rafah	21	7.0
	Total	300	100.0

Table (4.1b): Distribution of the study population based on their sociodemographic data

Items		Number	%
Do you have a fixed internet line at home?	Yes	277	92.3
	No	23	7.7
	Total	300	100
Do you use temporary internet cards?	Yes	59	19.7
	No	241	80.3
	Total	300	100
Your E-learning method			
	Laptop	188	62.7%
	Personal Computer (PC)	3	1.0%
	Cell phone	97	32.3%
	Total	300	100.0

4.1.1.2 Distribution of the study population according to their gender

As shown in table (4.1), there are 76.7% female participants and 23.3% male participants. That reflects the actual fact that women make up a large percentage of learners at dental colleges.

4.1.1.3 The age distribution of the population under study

Figure (4.2) showed that the participants' average age was between 21 and 22 years old (67%) with 23% of them being older than 22. The study's lowest age group, represented by 10% of the results, was those 20 years of age or younger. The participants' average age was 21.7 ± 1.1 years.

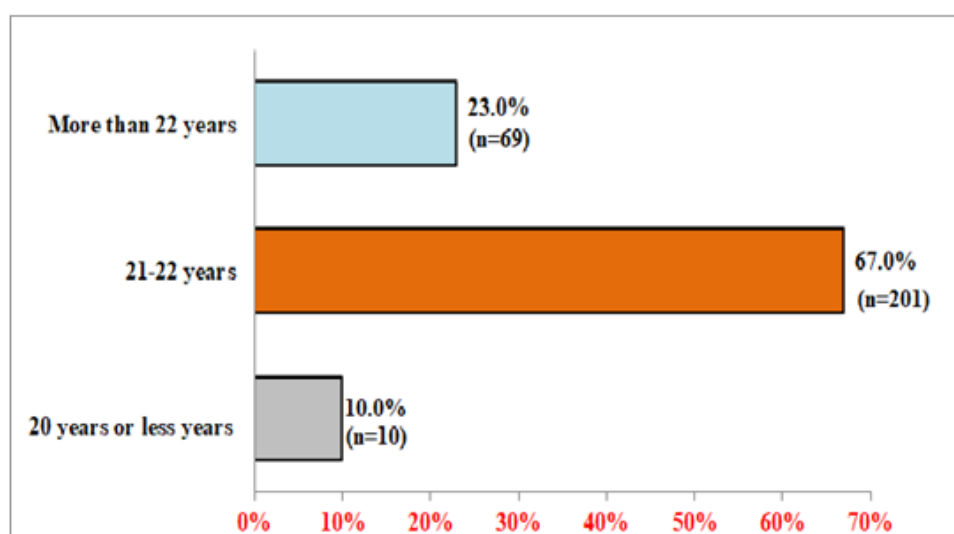


Figure (4.1): Age-based distribution of the study population

4.1.1.4 Distribution of the study population according to study levels

The distributions of the study population according to academic qualification showed that the highest group of the study population was finished 3rd level (44.3%) while 32% of them have finished the 4th level and 23.7% finished the 5th level (Figure 4.3).

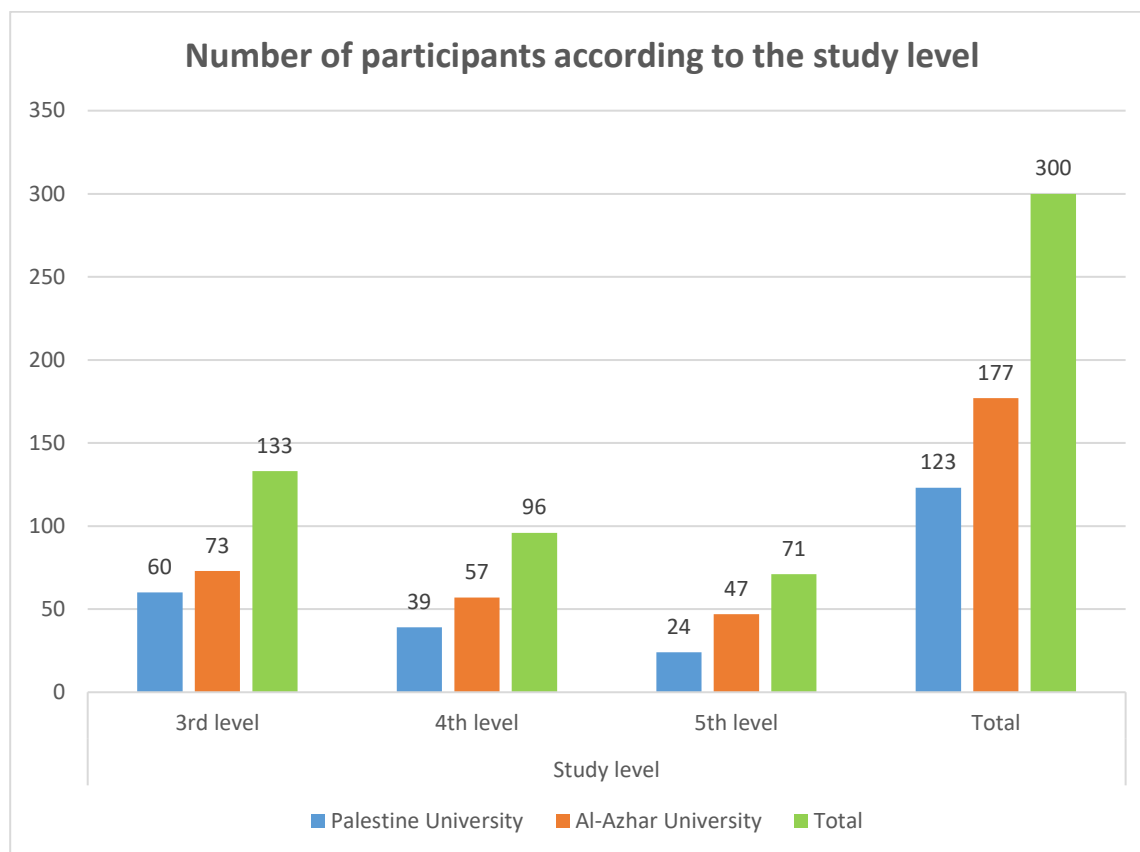


Figure (4.2): Number of Participants in research are distributed according to study levels.

Table (4.1): showed that (59.0%) of the study population graduated from Al-Azhar University and (41.0%) of them graduated from Palestine University. Additionally, it revealed that more than 50% of the study participants (53.7%) were from Gaza, (15.0%) of them were from the Middle zone, (14.3%) of them were from Khan Younis, (10.0%) of them were from North Gaza, and (7.0%) of them were from Rafah.

Moreover, the table illustrated that most of the study population (92.3%) have a fixed internet line at home while only (7.7%) of them do not have a fixed internet line at home, while (19.7%) of them use temporary internet cards. This finding is consistent with the data revealed by the (PCBS, 2022) as they reported during the first quarter of 2022, around 91 percent of households or one of their members reported having internet access at home (91

percent in the West Bank and 90 percent in the Gaza Strip). According to (Lestari et al., 2022) he stated that nearly most of the study population (80.3%) do not use temporary internet cards similar to the results of a study conducted in Malaysia as dental students' preferred subscribing to unlimited internet plans.

The table also showed that (62.7%) of the study population use laptops for E-learning, and (32.3%) of them use cell phones, reflecting the preference for using the laptop in remote studies over modern mobile phones, due to the ease of dealing with designated sites and better capabilities. This result is consistent with (Lestari et al., 2022) who reported that the majority of the Kulliyyah of Dentistry (KOD) students respondents to the survey preferred to subscribe to unlimited internet plans and used both laptops and desktop computers for online learning. While (4.0%) use tablets and (1 %) use computers for E-learning. It is well known that utilizing a laptop or computer rather than a smartphone makes it easier to access the majority of learning systems. In the contrast, only 45% of Kurdish students have laptops, despite the fact that 98% of them have cell phones. (Roberts & Rees, 2014).

4.1.1.5 Mean scores of items calculating the logistical support

Table (4.2): Mean scores of items calculating logistical support

The logistical support item	Mean	SD	WM	t	P-value	Rank
1. There is sufficient funding to support and develop distance education	2.81	1.03	56.20	-3.264	0.001	8
2. The lack of modern software components affects the quality of distance education ®	4.38	0.59	87.60	40.738	0.000*	2
3. The lack of human resources, including engineers and assistant technicians, affects the quality of distance education ®	4.17	0.71	83.40	28.599	0.000*	3
4. There is a shortage of electronic educational resources ®	1.90	0.75	82.00	-25.326	0.000*	5
5. Low internet speed affects the efficiency of distance education ®	4.74	0.49	94.80	61.862	0.000*	1

Table (44.2): Mean scores of items calculating logistical support

The logistical support item	Mean	SD	WM	t	P-value	Rank
1. There is a department to support distance E-learning at the university.	3.12	0.94	62.40	2.139	0.033	7
2. There is a unified educational platform at the university for lecturers and students	4.16	1.00	83.20	20.118	0.000*	4
3. The high cost of the Internet affects the application of distance education ®	3.46	1.00	69.20	8.217	0.000*	6
Total	3.59	0.34	71.80	8.031	0.000*	

* Significant at $P \leq 0.05$; $P > 0.05$: Not Significant; **WM**: weighted mean; **SD**: Standard Deviation and **t**: One Sample t- test.

The mean was inverted due to the negative word or negative expression of the question.

Table (4.2) explained how participants in the study were distributed based on their interpretations concerning the logistical support. This table demonstrates that the weighted mean for the general perceptions of logistical support was 71.8% using a one-sample t-test. Based on the outcomes, on top of the score item was (5) "Low internet speed affects the efficiency of distance education" with a weighted mean 94.8%. The outcome is attributed to the issues related to network and connection where the most common impeding factor for the efficiency of distance education is the slow internet speeds. This result is consistent with (Padhi et al., 2021), who conducted an online questionnaire-based cross-sectional study among learners and educators in India, who stated that the majority of participants felt that network problems were the main obstacle to an efficient E-learning process. Also, the result was in line with prior research (Nafrees et al., 2020), (Gupta et al., 2020), (Ansar et al., 2020) & (Samra et al., 2021).

This is also similar to those (Tulaskar & Turunen, 2022), who conducted a pragmatic mix-method study to investigate self-reported perspectives on emergency remote learning (ERL) experiments, practices, and educating participation of Finnish and Indian students. While taking university courses via ERL, the students encountered a number of difficulties, including

interruptions in the home-learning setting, communication concerns with classmates and lecturers, and space limitations. Also (Mishra et al., 2020) found out low concentration, trouble maintaining a schedule, poor internet, and gloomy emotion were the issues that were most frequently stated.

This result is a lot like many others from other studies done in Iraq country. For example, (Ameen, 2021) did investigation to decide the effect of instructive strategy change in the Iraqi Kurdistan region during the Coronavirus pandemic. The researcher observed that in the educational institution where the investigation was being conducted, subscription rates were initially low and many students failed to show up for class because there was a poor internet connection.

However, support from both the technical and service staffs significantly increased for access. In a similar way, (Kibuku, 2020) discovered that in Kenyan universities' attempts to adopt electronic learning in educational institutions, connectivity to the internet was a big difficulty. His study's findings, which supported the findings of this one, highlighted the global web as a key tool for facilitating online learning.

In a cross-sectional study carried out by (Acharya et al., 2021), connectivity/network issue was reported by most students (59.6%) as a major drawback was finding on 130 undergraduate dental students in India.

FGDs provided answers to the queries in relation to the qualitative component of this item. “*What do you dislike the most about E-learning?*” as the following:

"The speed and electronic technology quality of the Internet vary from home to home, which impacts the participations and times available to attend, upload data, and perform assigned duties." These studies demonstrate that the foundation of online education, weak internet connectivity makes online learning unfeasible. As the student's agreement with declared during the focus group, "To be sure, the Web isn't really great for the Gaza strip. The cables have not yet extended every location. Moreover, there is insufficient bandwidth at this point. This colossally effects on the online learning."

As a result, it is evident that students with bad internet connections spend lesser hours during lessons than is necessary to access the material online because the internet makes tasks like scanning, searching, and browsing, among others, easier. From the definition of online learning as an internet-based learning, it means that a lack of a strong and/or stable connection to the internet is a major stumbling block with regard to online education. (Stewart et al., 2011), (Singh & Thurman, 2019), (Dhawan, 2020) & (Repantar et al., 2020).

Followed by item number (2) "The lack of modern software components affects the quality of distance education" with a weighted mean equal to 87.6%. Which reflects the result of the emergency and sudden circumstance of Covid-19, appropriate devices and applications were not available to students or educational staff, which affected the quality of distance e-learning. This result indicates the necessity of using modern devices and applications for the efficiency of remote learning, and this finding is inconsistent with the study (Sadik, 2018), as he stated numerous researchers concur that a lack of technological tools is a significant obstacle to online learning implementation. Despite the fact that the majority of households in the area lack internet connection, many of them have smartphones, but only approximately half have computers. The demonstrated that many academics employed by Kurdish colleges believe that insufficient technology is present in the region's institutions in addition to a subpar internet connection.

Concerning that discussions between participants about "*How can the obstacles to the application of distance education be reduced?*" their opinions were as the following:

"Developing electronic technical devices and providing a larger number of them, as well as energy-saving devices is essential and urgent". Another viewpoint stated, "Providing a suitable location at the institution for electronic exam submission will decrease the issues associated with connecting the Internet to the impacted areas."

While the lowest item (1) "There is sufficient funding to support and develop distance education" with a weighted mean equal to 56.2%. The results of this item indicate that the students were not supported or the appropriate equipment was not provided in a way that covers all the necessary needs to keep up with the emergency event and its repercussion. Then directly preceded by item number (6) "There is a department to support distance E-learning at the university." with a weighted mean equal 62.4%. This result reflects that E-learning may need specific preparations, as the information technology staff must be

educating/socializing in more detail, to support the system and to overcome any technical issues that may face the students. This result is congruent with a research directed by (Frehywot et al. 2013), as they discovered that E-learning has a strong institutional focus on people and infrastructural resources, which is not often the case in developing nations. However, due to its difficult social and economic circumstances, Palestine might be regarded as one of the aforementioned nations in this sense.

4.1.1.6 Mean scores of items calculating the human preparation:

Table (4.3): Mean scores of items calculating the human preparation

The human preparation items	Mean	SD	WM	t	P-value	Rank
1. Faculty members have sufficient capacity to meet the needs of a remote teaching in emergency situations?	3.19	0.91	63.80	3.612	0.000*	6
2. Is there a continuous development for faculty members to enable them to teach emergency remotely?	3.23	0.90	64.60	4.436	0.000*	5
3. The lecturers' lack of knowledge of the learning & education strategy accord. to the learning and distance E-learning methodology. ®	3.36	0.88	67.20	7.154	0.000*	4
4. There is a problem in the path followed in the preparation, preparation and professional development of academic human resources (all employees in educational institutions) ®	3.45	0.82	69.00	9.409	0.000*	2
5. Faculty members are trained in the use of educational platforms before they are used	3.37	0.91	67.40	6.950	0.000*	3
6. Some faculty members lack modern technical skills in the E-learning process ®	3.89	0.77	77.80	20.021	0.000*	1
7. There is a difficulty in dealing with educational and educational platforms, their environments and various tools. ®	3.17	1.00	63.40	3.002	0.003	7
Total	3.38	0.88	67.6	4.818	0.000*	

*The mean difference is significant at the 0.05 level.

Table (4.3) summarized the distribution of the research applicants according to their reactions around the human preparation. This table demonstrates that the weighted mean for the overall insights into human preparation was 67.6% using a one-sample t-test. Based on the outcomes, the uppermost item was (6) "Some faculty members lack modern technical skills in the E-learning process" with a weighted mean equal to 77.8%. This result reflects the necessity for the training and development of the lecturers in technical skills for E-learning process, and this finding is congruent with the study (Yunus, 2007), as he asserts that proper training and support in ICT and pedagogy should be given to lecturers before ICT can be effectively integrated. There is no distrust that lecturer's preparedness and inspiration must be taken into consideration in order for higher education institutions to successfully integrate technology.

Similarly, (Johnson et al., 2016) concurred that some instructors don't have enough expertise with digital technology, which makes it challenging for them to handle educational resources. Due to their reduced involvement in daily activities, college students and professors remain less proficient in these technologies. Students and lecturers are significant stakeholders whose opinions should be taken into account while applying an internet-based learning strategy. The present research findings are comparable to (Shearer et al., 2020), technology does not enhance the learning experience of lecturers and students alike.

Regarding the open-ended question of *"To what extent do lecturers possess the knowledge and electronic capabilities necessary to work remotely?"* the participants they express as the following:

"Not everyone is highly qualified to use the necessary capabilities such as recording quality, solving sudden errors, lack of sound or saving recordings and other technical characteristics of recording". Other participants stated that; *"Electronic capability and information are often present, especially after capable use and expert help preparation."*

Followed by item number (4) " There is a problem in the path followed in the preparation and professional development of academic human resources (all employees in educational institutions)" with a weighted mean equal to 69%. This reflects the needs and the importance of training and development for the faculty staff for the efficiency of distance online learning. This is compatible with and recommended by the World Bank in considering the COVID-19 pandemic, World Bank stresses that staff working online need to be trained and

supported. Further, they caution that personnel who lack adequate internet and a linked equipment at homebased will plainly be unable to facilitate online student learning (World Bank, 2020b). They then insist that in order for employees to properly teach online courses, they must get technical, social, and moral assistance. Compatible with other studies, the utilization of learning technology has expanded considerably during the Coronavirus pandemic (Niemi & Kousa, 2020), (Chadwick & McLoughlin, 2020).

While the lowest item (7) "There is a difficulty in dealing with educational and educational platforms, their environments and various tools." with a weighted mean equal to 63.4%. These results are not compatible with the results of (Mishra et al., 2020), as he stated some of the features became freely accessible for use in the majority of the institutions when online education became required in the region. Since there were no regional platforms available, it was simple to access foreign ones like Zoom and Google Classroom. Another study undertook (Ali, 2019), indicated that certain faculty members at a university appear to be using ICT in their lessons, notably during classes and tutorials. But the majority of them (92%) still think that confidence is something that can be improved. This deficit of trust might be brought on by how various technologies and learning platforms are handled by administrators. On a similar to this, (Huang & Liaw, 2005) say that the attitudes of staff members and their readiness to use ICT significantly affect the lives of their pupils. This is due to the possibility of leaving students to "board and chalk" clarification and rote learning if staff members are unwilling to adopt ICT-embedded learning. Also (Yuen & Ma, 2002) shares similar sentiments.

However, the participants claimed that the usage of technology tools was still challenging for both educators and students, impacting the entire process of integrating online education.

A major factor is the capability of the students and lecturers to interact with pcs will contribute to the application of distant learning success. They stated that;

"Yes, some students have trouble using technology effectively, particularly when using platforms and registering, they were facing too many difficulties. Likewise, some lecturers lack the ability to use technological advances, especially if they belong to an older generation. "

Followed by item number (1) “Do faculty members have sufficient capacity to meet the needs of a remote teaching in emergency situations?” with a weighted mean equal to 63.8%. This reflects that the faculty members do not have enough knowledge of remote learning and need more training and preparing for emergency learning by using blended resources, providing access to a wide range of digital reading materials and developing skills for independent learning by students.

However, the current study revealed a considerable improvement in self-efficacy for technology applications, supporting the finding (Lee & Tsai, 2010) that suggests teaching self-efficacy (TSE) for applications involving technology rises with greater the experience of teaching online. According to Lee & Tsai (2010) and Shea (2019), it seemed that technological challenges only seemed to matter when teachers become accustomed to the technology..

About the question “*To what reach do the lecturers have the essential electronic knowledge and capabilities to work and educate remotely?*” The participant states that: “*Electronic capabilities and knowledge are frequently present, particularly following technical support training and good practice*”.

4.1.1.7 Mean scores of items measuring the distance education infrastructure

Table (4.4a): Mean scores of items measuring the distance education infrastructure

The distance education infrastructure items	Mean	SD	WM	t	P-value	Rank
1. Infrastructure sufficient to meet the needs of distance education in emergency situations?	2.44	0.89	48.80	-10.852	0.000*	9
2. The inadequacy of modern electronic devices to implement distance education ®	3.58	0.96	71.60	10.436	0.000*	2
3. Weak technological infrastructure that necessary for the implementation of distance education ®	3.88	0.80	77.60	19.026	0.000*	1
4. Various sources of electrical energy are available at the university	3.43	1.03	68.60	7.150	0.000*	3
5. There are different sources of electrical energy in the home	3.28	1.07	65.60	4.494	0.000*	5
6. Obsolete technological devices and equipment ®	3.43	0.86	68.60	8.588	0.000*	3

Table (4.4b): Mean scores of items measuring the distance education infrastructure

The distance education infrastructure items	Mean	SD	WM	t	P-value	Rank
7. There is a national educational platform for the benefit of all educational institutions with all their affiliates.	2.82	0.92	56.40	-3.466	0.001	8
8. Difficulty in dealing with educational and educational (commercial) platforms with their different environments and tools. ®	3.21	0.91	64.20	3.980	0.000*	6
9. The technical support team is able to solve the technical problems that students face	3.09	0.97	61.80	1.604	0.110	7
Total	3.24	0.93	64.80	5.231	0.000*	

Table (4.4) summarized the distribution of the study applicants according to their replies about the distance education infrastructure items. This table demonstrates, through the use of a one-sample t-test, that the weighted mean for the overall perceptions of the distance education infrastructure item is 64.8 %. Based to the outcomes, the uppermost item was (3) "Weak technological infrastructure that necessary for the implementation of distance education" with a weighted mean equal to 77.6%. This reflects given the worrying effects of the COVID-19 pandemic, there is a need to speed up the pace of technological advancement and improve the technical adoption of distance learning programs. This is similar to the report (Eltahir, 2019), Sudan's extreme wealth disparity makes it difficult to use ICT in classrooms effectively. The gap continues to be a significant problem in the region, having been made wider by the COVID-19 pandemic.

According to (Barznjy, 2020), the poor were disproportionately affected by COVID-19, feeling its effects more so than the wealthy. According to the equivalency hypothesis, remote learning is appropriate if it can provide equal access to education for all students, both locally and internationally, in a way that respects the expectation of equivalent educational experiences for equal outcomes. (Simonson, 1999). As a result, countries with uneven distributions of resources between those who have and have-nots struggle to integrate online learning, as is the case in Gaza due to the pandemic's economic effects..

Concerning the inquiry, "*How can the university's role in enhancing e-learning for lecturers be enhanced?*" participants expressed the following:

“The lack of suitable equipment, devices and internet lines for remote communication is very frustrating”. Another participant said: *“It is essential to ensure that internet lines and networks are operating at a suitable speed for the service that is required of them as an infrastructure”.* One of the participants said: *“I was unable to attend three classes because there was no power at the time. How will I be able to be present at classes and join in online education?”*

Followed by the item number (2) " The inadequacy of modern electronic devices to implement distance education" with a weighted mean equal to 71.6%. This finding is consistent with a study by (Flye et al., 2002), who reported many students are unaware of the complexity of networking systems. Especially in rural areas, this puts them at a competitive disadvantage when compared to people who use cutting-edge technology in a variety of contexts. Most people with low or middle incomes cannot afford the equipment required for online education.

Followed by item number (6) “Obsolete technological devices and equipment” with a weighted mean 68.6%. This is comparable to another study (Gonzales et al., 2020) that revealed students with inconsistent broadband connection and digital gadgets requiring technological upkeep found it more difficult to manage online course platforms, keep track of deadlines, and comprehend expectations in remote learning environments. Moreover, current research indicates that students who are not connected are unreasonably more likely to experience financial hardship and, as a result, divert critical time and effort from their study in order to fix sporadic internet and broken equipment, even in face-to-face classes.

The item number (4) 'Various sources of electrical energy are available at the university’ with a weighted mean equal 68.6%, the item number (5) "There are different sources of electrical energy in the home with a weighted mean equal 65.6%, reflect the electricity issues that people suffered from it in the region as the shortfall of electrical energy in Gaza strip in general has been a continual problematic for an extended period. Electricity is a significant problem that could undermine the efficiency of e-learning programs, according to other studies. According to a study (Dhawan, 2020) that looked into the factors influencing the adoption of online learning in Indian colleges, frequent electrical outages have made it difficult to begin using online studying in India because it disrupts the students' experience.

Also, Kurdistan's electricity generation was reduced by 700 watts in 2020, claims (Faidhi, 2020). The reduction in production made the region's already dire need for electricity during the pre-pandemic period even worse. In the same way, according to (Aung & Khaing, 2015), the majority of nations in developing nations struggled to improve electricity connections so that every student could experience few, if any, disruptions. This finding confirms our findings and places the shortage of electrical power as an important issue when relates to the use of e-learning.

The applicants concurred that one of the major challenges educators and students faced while implementing the method of online education was electricity in the Gaza Strip.

A student stated: "One of the biggest obstacles to access online education is still electrical energy. Municipal energy is awful, and occasionally with special generators that produce power, there is no power for the entire day, particularly in remote places. This prevented the online procedure from working."

Clarified outlined how power failures may cause such interruptions. The student stated "Power outages frequently caused 20-minute disconnects even in universities and this is too much wasted time".

While the lowest item (1) " Infrastructure sufficient to meet the needs of distance education in emergencies?" with a weighted mean 48.8%, followed by item (7) " There is a national educational platform for the benefit of all educational institutions with all their affiliates." with a weighted mean equal 56.40 %. These results reflects the disagreement of students, as the infrastructure not qualified for distance education in emergencies, and revealed that there is substantial correlation between communication and connection issues when learning remotely, and this effects directly and indirectly on remote learning. This result is consistent with the study of (Rideout & Katz, 2016), (Gonzales et al., 2020), that measures the recognized pupils who had undergone at least one of the following forms of under-connection experiences in the previous year: getting internet access cut off due to lack of ability to make payments, reaching the cap on their cell phone data plan in the middle of the month, or getting trouble with their laptop for at least ten non-consecutive days. All of these experiences have been confirmed as important indicators of having been under-connected in previous research on digital inequality.

On the other hand, our results are not consistent with the results of the study of (Fidalgo et al., 2020) he stated that the participants' favorable perception of distance education may be explained by the Portuguese students' level of interest in and use of new technologies. A study by (Costa et al., 2018) found that 90% of Portuguese students use recent technologies and 69% of them use newfangled technologies for more than an hour and a half a day. According to (Noticias, 2011), based on research conducted in Europe, students in Portugal "appear to be at the forefront of those who best master information and communication technologies (ICT)."

4.1.1.8 Mean scores of items calculating the usage of E-learning

Table (4.5): Mean scores of items calculating the usage of E-learning

The use of E-learning	Mean	SD	WM	t	P-value	Rank
1. I feel good about using distance education in light of this current crisis	2.97	1.21	59.33	-0.476	0.634	7
2. The university provides me with everything I need to communicate the scientific content of the curriculum through the university website	2.96	1.05	59.20	-0.658	0.511	8
3. There is a strong interaction between the lecturer and the students through distance education.	2.40	1.02	48.00	-10.206	0.000*	11
4. You can monitor students' performance remotely, guide and provide guidance.	2.80	1.02	56.07	-3.338	0.001	9
5. Allocate some practical applications that students must master in order to develop their applied skills	3.49	0.96	69.87	8.878	0.000*	4
6. Multimedia is used during your explanation of the educational content through the distance education site.	3.50	0.86	70.07	10.095	0.000*	3
7. Distance education helps present info in a variability of formats (video, PowerPoint, PDF, and Word).	3.93	0.70	78.67	23.082	0.000*	1
8. Students submit their assignments "electronically" on time	3.52	0.89	70.47	10.185	0.000*	2
9. You can evaluate students well through distance education.	2.47	1.05	49.40	-8.782	0.000*	10
10. Suggestions were made to the competent authorities to develop distance education to meet the current challenges	3.10	0.96	62.07	1.864	0.063	6
11. The process of evaluating assignments and tests for students is easy and convenient	3.11	1.05	62.13	1.752	0.081	5
12. I believe that the process of evaluating students through distance education is a fair process and reflects the true level of students.	2.13	1.07	42.53	-14.078	0.000*	12
Total	3.03	0.58	60.65	0.965	0.336	

*The mean difference is significant at the 0.05 level.

Table (4.5) explained how participants in the study were distributed based on their responses to D4. By using a one-sample t-test the weighted mean for the total insights regarding D4 is shown in this table to be 60.65%. Based on the outcomes, the uppermost item was (7) "Distance education helps present information in a variety of formats (video, PowerPoint, PDF, and Word)." with a weighted mean equal to 78.6%, this result revealed that most students believed that a PowerPoint presentation with voice narrations was the most effective way to learn the theory component. This result is consistent with a study by (Jayasinghe et al., 2021) stated as the vast majority of students (68%) preferred watching PowerPoint presentations with narrations than listening to lectures. Additionally, 69% of respondents believed that the e-learning materials had improved their understanding of the course topic as outlined in the Intended Learning Outcomes. However, this finding contrasts with Saudi Arabian dental students' preferred e-learning method, which was online flash lectures (Asiry, 2017).

Regarding the "How can the obstacles to the application of distance education be reduced?" the participants express that as the following:

"Using Multimedia programs to communicate ideas and practical and theoretical experiences directly with the lecturer and to participate in the discussion with the lecturer during the lecture using specialized programs for real-time remote communication". Another student proposed: "Providing a graphic and practical screen on the university's educational platform".

Followed by the item number (8) " Students submit their assignments "electronically" on time" with a weighted mean equal to 70.4%. The results are congruent with other studies show there are a number of advantages to using multimedia-enhanced information in educational settings. In line with (Lee, Hsiao & Ho, 2014) usage of information and communication technology tools can help to improve students' understanding of instructional materials. The use of ICT devices can aid in enhancing students' comprehension of course topics. Additionally, they can replicate actual procedures and enable students to undertake virtual tests that would otherwise be risky and expensive to carry out in a school lab (Hennesy, Deanay, & Ruthvan, 2006).

Item number (6)" Multimedia is used during your explanation of the educational content through the distance education site." with a weighted mean equal to 70%, the results are congruent with those (Lanzilotti, Ardito, Costabile, & De-Angeli, 2006) as Multimedia

contents are digital instructional materials that combine text, graphics, audio, and animations. Lecturers tend to use this content to liven up classroom lessons by using them to better demonstrate and explain difficult concepts that cannot be easily explained using text alone. Similar to a study by (Jayasinghe et al., 2021) who suggested using e-learning to help students develop the necessary skills: around half (52%) of respondents preferred video demonstrations of clinical and lab operations.

Concerning the “*How can the university's role in improving e-learning for lecturers be improved?*” The participant’s opinions are as the following:

"Even though the explanation has been clarified, videos and other means of clarification have been added to some courses that require additional explanation, so you can't totally rely on the suggestions". Another student said “*to look for links and videos on the internet that show how dental treatments for diseased cases can be used in real life*”.

While the lowest item (12) " I believe that the process of evaluating students through distance education is a fair process and reflects the true level of students." with a weighted mean equal to 42.6%, This result reflects students' feelings of the unfairness of assessments and does not reflect the true level of education for them. This result is consistent with the result of a study by (Donn et al., 2023) as they reported that Forty percent (40%) of student’s perspectives were neutral as to whether the assessment was fairer online than face-to-face. And the result is in contrast with a study by (Jayasinghe et al., 2021) Sixty-nine percent (69%) of undergraduate dental students at the Faculty of Dental Sciences who participated in the survey felt that giving exams online was fair.

Followed by item number (3) “There is a strong interaction between the lecturer and the students through distance education." with a weighted mean equal to 48%. This result is consistent with the result of another study (Tulaskar & Turunen, 2022) as the participation answers are the lowest. Just 45% of all the sections demonstrated that the understudies were participating effectively during ERL. This reflects poor engagement with the lecturer during lectures and communication is considered poor interaction. Our finding were constant with the recent research in Italy by (Li et al., 2022) that showed that approximately (40.3%) of students' feedback on the e-learning and e-teaching approach which considered significantly less than satisfying in the grade of interactivity. Alternatively, there was insignificant difference among Indian (43%) and Finnish (46%) effective participation of students in the

courses they observed while conducting the diary study. Low participation was attributed to the lectures' aloof and non-interactive style, technological issues, and lack of focus. Our findings, which are consistent with those of smaller studies in the past, demonstrate that instructors' communication skills with students have a big impact on whether or not students develop RLP, respond to their needs, and keep the same learning formats, deadlines, and expectations across online platforms (Loepp, 2021). In a study conducted by (Zheng et al. 2021) during the COVID-19 epidemic, dental students' perceptions of their interactions with professors and other students were a strong predictor of their likelihood to enroll in an online course. They usually had positive perceptions of online education. Also in research from (Jayasinghe et al. 2021) reported as compared to in-class teaching sessions, more than a third of the respondents (39%) felt encouraged to collaborate and interact with their teachers during e-learning time. Additionally, about half of them (55%) were happy with the interactions they had during e-learning sessions during their study period.

Regarding the *student's* point of view about the “*What do you dislike the most about E-learning?*” they express that as following:

One of the participants explained, “*Direct interaction with the lecturers is limited, and for a better understanding of some topics, communication during the lecture is necessary.*”

That was stated by another student “*At the time of the lecture, there is no interaction with the lecturer or participation in related questions, ideas, or experiences to properly receive and comprehend the information*”.

“*Lack of appropriate evaluation of the student and the lack of readiness to present lectures in the appropriate manner*”.

Additionally, as stated by another participant “*Faculty members must receive enough training to select the proper software to ensure that students can interact with the instructional content and access it whenever they want.*”

Item No. (1) “ I feel good about using distance education in light of this current crisis” with a weighted mean equal to 59.3%, this reflects the moderate acceptance of students towards distance learning which is almost close to the result of another study (57.1%) of students were satisfied with the E-learning facility provided by the institute. Similarly, a study by

(Padhi et al., 2021) revealed that students were extremely satisfied with the online learning services available with a mean score of 3.74. Our results were consistent with a study in Indonesia by (Amir et al., 2020) that showed that approximately (51.49%) of students agree with distance learning as it gives similar learning satisfaction than classroom learning. Also, a study by (Jayasinghe et al., 2021) stated that (71%) responded that they were either satisfied or highly satisfied with the e-learning materials they received. In contrast to these findings (Tulaskar & Turunen, 2022) revealed as with a mean overall grade of 3.30 and a standard deviation of 1.19, out of 138 survey respondents, 61% (n = 84) said their experience with emergency remote learning was dreadful to bad. And the findings were inconsistent with recent research in Pakistan by (Abbasi et al., 2020) that showed that approximately (77%) of students had negative perceptions of online learning. The justification for this is that the students and teachers in the previous study had to become familiar with e-Learning.

Regarding the FGDs “What do you like the most about E-learning?” “Participation they express as the following:

“Existence and provision of more time for the student due to the lack of mandatory attendance at the university back and forth as a result of the health ban imposed on the entire country due to the Corona pandemic, and also to reduce the duration of scheduled lectures”. Another student said: *“Increasing focus in studying away from the hassle, congestion and confusion in the university”.* Another student said: *“With everything being recorded, I also felt more confident that I could voice my concerns and that the video could be checked”.*

4.1.1.9 Mean scores of items calculating the Student readiness

Table (4.6a): Mean scores of items calculating the Student readiness

The Student readiness	Mean	SD	WM	t	P-value	Rank
1. Students have the ability to use different computer programs	3.24	1.02	64.73	4.038	0.000*	9
2. Have the ability to use online platforms efficiently	3.40	0.93	68.00	7.430	0.000*	4
3. Students have the ability to work collaboratively	3.40	0.98	68.07	7.140	0.000*	3
4. Students have the skill of self-learning	3.56	1.00	71.13	9.690	0.000*	1

Table (4.6b): Mean scores of items calculating the Student readiness

The Student readiness	Mean	SD	WM	t	P-value	Rank
5. Students interact with lecturers on a regular basis	2.71	0.96	54.20	-5.249	0.000*	11
6. Ability to handle electronic courses	3.29	0.91	65.73	5.437	0.000*	8
7. Students have the possibility to use the university's electronic platform effectively	3.36	0.94	67.20	6.647	0.000*	6
8. The ability to actively participate in the transformation from a recipient to a partner in knowledge.	3.20	0.94	64.07	3.758	0.000*	10
9. Possesses the ability to use different learning websites and resources.	3.54	0.86	70.80	10.891	0.000*	2
10. Ability to switch between blended learning methods and techniques	3.35	0.94	66.93	6.415	0.000*	7
11. The university's E-learning system is easy to use	3.40	0.98	68.00	7.059	0.000*	4
Total	3.31	0.64	66.26	8.478	0.000*	

*The mean difference is significant at the 0.05 level.

Table (4.6) summarized the distribution of the study applicants according to their replies around Student readiness. By using a one-sample t-test this table shows that the weighted mean for the overall insights about Student readiness 66.26%. Based on the outcomes, the uppermost item was (4) "Students have the skill of self-learning" with a weighted mean equal to 71.2%, reflects the success with 'students self-learning, this results is confirmed by study of (Matuga, 2009) who stated self-regulation and motivation have been identified as two critical factors for determining success in online courses. Self-regulation alone is not enough for success; students must be intrinsically or extrinsically motivated to use self-regulatory strategies effectively in order to succeed in the academic realm of online courses.

Followed by item number (9) " Possesses the ability to use different learning websites and resources." with a weighted mean equal to 70.8%. Reflects that fewer learners who had previously taken online courses reported having trouble communicating with their lecturers, the (World Bank, 2020b) reported that instructional approaches, content, pacing, interaction models, and assessment may all need to be adapted when transitioning to online learning. All these processes may be time-consuming but a start needs to be made as it is not a matter

of choice but a necessity in response to the COVID-19 pandemic. This result is consistent with a study by (Donn et al., 2023) as over two-thirds of the students agreed or strongly agreed that they were able to demonstrate their knowledge as well online as face-to-face. These findings endorse the observations of (Linjawi and Alfadda, 2018) where the students claimed that they had better skills and motivation for e-learning than conventional learning activities.

Concerning the question about “How was the course dealing with practical exercises to gain technical experience”, the respondent's thoughts are as follows:

“Providing the student with fundamental and additional information by establishing links to reliable educational platforms at universities and scientific sources”. Another stated, “Creating virtual programs that replicate the scientific and practical application of the practical courses, particularly to provide accurate and useful information”

While the lowest item (5) " Students interact with lecturers regularly" with a weighted mean equal 54.2%, This is also similar to the findings from online learning, which showed that students had less social interaction with their classmates and teachers than in traditional classroom settings (Lestari et al., 2022). In contrast to our result, a study by (Dost et al., 2020) found that 59.73 percent of students found that online teaching sessions were interactive, with students able to communicate with the instructor directly or through the chat box.

Concerning the qualitative part of related to “*What do you dislike the most about E-learning?*” FGDs provided the following answers to the queries pertaining to this domain:

“It can be challenging to attend lessons occasionally due to network troubles, which is really aggravating.” Another participant states: *” Problems with technology and varying Internet speeds, which vary from one residential area to another, prevent students from taking online courses and make them feel more anxious and stressed”*. Also one of the students expressed that: *“Lack of familiarity with technology, modern and main programs for remote communication is my bug problem during the corona learning time”*.

Followed by item number (8) “The ability to actively participate in the transformation from a recipient to a partner in knowledge.” with a weighted mean equal to 64%. This represents the difficulties that students are facing because the COVID-19 pandemic led to several social and health problems that had an impact on familial relationships and the manner life goes for the majority of people around the entire world. The results are congruent with a study by (Gadermann et al., 2021) that listed lockdowns, losing a job, having a family member get unhealthy, missing a family member by corona virus, and more as domestic stressors. These circumstances may have a significant detrimental impact on the learners' emotional and cognitive health, impairing their capacity to learn.

This is consistent with the research results of (Shahmohammadi & Bahmani, 2020), which found that students were unable to continue their studies normally at home due to congestion, with the majority of students becoming distracted by their phones and other family members. Lack of a suitable study space outside of school hours and after libraries close is a significant issue in this scenario.

a respondent in one of the focus sessions stated: *“Some learners weren't psychologically ready to study in their homes because the majority of them do not in normal conditions. I must admit that this is not something that could be obtained so quickly. Another student said, “We had the conversation right after lunch, which made it difficult for me to concentrate. I was drowsy. Additionally, I didn't go to this lecture from my study table but rather from my bed. It was much too pleasant.”*

Focusing on a similar point, their partner demanded;

“It's true that some pupils anticipated finding interest in their studies and beginning to do so at home. Look, you have to initially demonstrate your interest. To prevent distractions, I always advised students to study in a peaceful area, incorporate their routines into their studies, and become used to being by themselves”.

Followed by item (6) “Students take the possibility to use the university's electronic platform effectively “with a weighted mean equal to 65.7%. Reflects the moderately effective uses of students to online learning and the results are congruent with the studies revealed by (Rajabalee & Santally, 2021) that student's ERL participation was moderate. Engagement is essential for evaluating the quality and effectiveness of a course. In order to determine if

students were committed to ERL, the study looked at their abilities, functionality, emotions, and engagement (Dixson, 2015). The study discovered that although the students made an effort to develop their skills and fared quite well, they had minimal to take part in the ERL lessons. The study might conclude that the students' engagement was impacted by the problems they faced since students' low participation can be linked to issues like technical limitations, non-interactivity, and low concentration.

Item number (3) “Undergraduates learners have the ability to work collaboratively” with a weighted mean equal to 68%. These results are consistent with Similar to the results of the current study, a study conducted in Germany with undergraduate dental students found that engagement in online learning was higher than in "face-to-face" courses (Schlenz et al., 2020). Also, a study by Zarzycka et al. (2021) looked at the effects of a remote learning environment on teamwork and communication both within and outside of the virtual classroom as well as the role social media played in these activities during the COVID-19 pandemic, their research revealed that utilizing Facebook more frequently for professional purposes improves student communication and collaboration in online courses. In contrast to these results, a study by (Jayasinghe et al., 2021) stated that a key obstacle mentioned by the majority of students was the lack of opportunity to collaborate with classmates.

Regarding the importance of the work collaboratively and interaction, and its relevancy to the obstacles,” *How can the obstacles to the application of distance education be reduced?*” The applicants gave the following answers:

“One of the most important considerations supervisors should make is determining an appropriate time for interaction between students and lecturers to resolve the interaction issue”. Another participant said *“Inability to effectively communicate information as a result of a lack of student participation and interaction with the lecture”.*

And item number (2)” Have the ability to use online platforms efficiently” with also a weighted mean 68%. This outcome is congruent with (Mishra et al., 2020), (Rashid & Yadav, 2020) who reported due to the technical difficulties and non-interactive nature of ERL, neither India nor Finland learners displayed decreased enthusiasm in participating. Based on these facts, it is possible to conclude that both were somewhat active users of ERL.

4.1.1.10 Mean scores of items calculating the obstacles

Table (4.7): Mean scores of items calculating the obstacles

The obstacles ®	Mean	SD	WM	t	P-value	Rank
1. Online exams do not show the real level of students.	4.14	0.92	82.87	21.621	0.000*	6
2. Inability to distinguish students from each other	4.09	0.90	81.73	20.846	0.000*	7
3. There was no real control over students' performance through E-learning.	3.93	0.98	78.67	16.510	0.000*	9
4. The spread of cheating in remote electronic exams	3.98	0.98	79.60	17.299	0.000*	8
5. Some lecturers do not have sufficient experience in preparing various electronic exams.	3.90	0.95	78.07	16.459	0.000*	10
6. Students' answers to tests and exams are very similar among students.	3.73	0.99	74.53	12.745	0.000*	13
7. Some students face difficulties in dealing with electronic programs.	3.81	0.81	76.27	17.420	0.000*	11
8. It is difficult for the teacher to follow up on all students because some of them boycotted distance education.	3.73	0.91	74.53	13.831	0.000*	13
9. Some topics need interactive methods and explanations with students.	4.29	0.66	85.73	33.883	0.000*	3
10. Spending a lot of time in front of the computer answering student inquiries	3.62	0.87	72.33	12.207	0.000*	16
11. Existing student assessment tools do not consider distance education.	3.64	0.82	72.73	13.504	0.000*	15
12. Lack of students' motivation for distance learning.	3.54	1.13	70.80	8.313	0.000*	17
13. Lack of pre-made self-learning materials for emergencies.	3.78	0.85	75.60	15.914	0.000*	12
14. Poor ability to raise and deliver required activities and duties.	3.27	0.98	65.33	4.701	0.000*	18
15. Some courses are difficult to teach remotely to students	4.33	0.80	86.67	28.769	0.000*	2
16. The practical application of some skills is missing through distance E-learning	4.38	0.74	87.60	32.207	0.000*	1
17. It is difficult for students to acquire practical and technical skills through teaching at a distance	4.23	0.85	84.53	25.080	0.000*	4
18. Lecturers find it difficult to communicate information to students in purely practical courses through distance education	4.17	0.82	83.40	24.758	0.000*	5
Total	3.92	0.52	78.39	30.430	0.000*	

*The mean difference is significant at the 0.05 level.

Table (4.7) summarized the distribution of the study contributors according to their replies to the obstacles. This table demonstrates that the weighted mean for the overall insights regarding obstacles was 78.39% using a one-sample t-test. Based on the findings, the uppermost item was (16) "The hands-on and applied application of some skills is missing through distance E-learning" with a weighted mean equal to 87.6%. Reflect the dissatisfaction of students with the practical application of online education that stopped during the pandemic. This finding was consistent with (Hassan et al., 2022) who stated the online practical sessions had an opposite trend with 70.3% overall dissatisfaction. Comparable to our results, a survey of healthcare students from 11 developed and developing countries found that 60% of them felt that clinics and laboratories are the best places to learn practical and clinical abilities (Abbasi et al., 2020). Also, another study reported that every clinical training program in every nation as Australia, Japan, Malesia and the USA are stopped, with the exception of Taiwan, the majority of dental clinics and hospitals are closed due to the pandemic (Chang et al., 2020).

Concerning the question about "How was the course dealing with practical exercises to gain technical experience?" the applicant's beliefs are as the following:

"The practical aspect is not clear and needs to participate in the clarification with the lecturers and supervisors". Also another participant said: "Information transmission in the face-to-face mode is easier than in the remote electronic mode".

Followed by item number (15) " Some courses are difficult to teach remotely to students" with a weighted mean 86.6%. This outcome is consistent with (Lestari et al., 2022) who reported that the majority of students said that distance education was useful for learning theoretical material, but they did not believe that it adequately prepared them for hands-on training or patient care (Islam et al., 2022). Also, these outcomes are consistent with the findings of (Al-Dhdouh et al., 2022) stated in their study 74.26% of all responders had a high degree of fear from technical issues related to online exams. Additionally, 69.01% expressed fear when they think of their career given the lack of interaction with patients and gaining the clinical skills they are supposed to learn.

Regarding the "What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study?" participation they express as the following:

“Providing a graphic and practical screen on the university's educational platform is good for to reduce the difficulty of information and visualizing it well”. One more major difficulty the applicants confronted by COVID-19: “Handling the novel technological requirements of online education. Due to a lack of support from the institution, they had to learn new tools, provide technical help to students, manage their time effectively, and spend a lot of time in stares at a computer monitor.”

While the lowest item (14) *“Poor ability to raise and deliver required activities and duties”* with a weighted mean equal to 65.4%,

Regarding the question of *“What do you dislike the most about E-learning?”* participation they express as the following:

“Due to the limited Internet access, uploading the assignment file is challenging”. Other students said:” I have five brothers and sisters, each one has at least four assignments per week, it is difficult to coordinate the time between us and I am not qualified to use new technology”.

Followed by item number (12) *“Lack of students' motivation for distance learning.”* with a weighted mean equal to 70.8%. The outcome of this study was greater than the outcome of the study that was performed in Malaysia (Islam et al., 2022) as under fifty percent of the students reported being motivated to study by online learning. The majority of students (44.6 percent) were unsure of their level of enthusiasm for studying online. (Lestari et al., 2022). Students' experiences, including their happiness with quality of education, perceptions of the entire distance-learning experience, and even their decision to pursue online education in the future, were impacted by the difficulties they encountered while enrolled in ERL. These obstacles are essential for the success of online educational activities because they can lead to bad attitudes, lower grades, and disappointments (Tulaskar & Turunen, 2022) & (Baloran, 2020); they can also make it difficult for people to accept technological innovation in the field of educational content.

The item number (17) *“It is difficult for students to acquire practical and technical skills through teaching at a distance “with a weighted mean 84.5 %.* The result is congruent with another study by (Alsoufi et al., 2020) involving over 3,000 medical students from over 13 Libyan schools found that e-learning might be helpful for therapeutic issues, but only 21 percent of respondents thought so, compared to 55 percent who objected and 24 percent of those deemed neutral.. Similar to the finding of (Hassan et al., 2022) revealed that the majority of dental students (93%) responded that they would need extra clinical preparation after graduation to compensate for time missed during the lockdown.

4.1.1.11 Mean scores of items measuring the advantages of distance E-learning

Table (4.8): Mean scores of items measuring the advantages of distance E-learning

the advantages of distance E-learning	Mean	SD	WM	t	P-value	Rank
1.It helps in employing modern technologies in teaching	3.62	0.89	72.33	11.999	0.000*	9
2.Helps to update and develop distance learning methods.	3.63	0.88	72.53	12.371	0.000*	8
3.An advanced and important technical system to meet the challenges of the times	3.70	0.90	74.00	13.505	0.000*	2
4.Assists in employing modern teaching strategies	3.67	0.87	73.33	13.262	0.000*	3
5.Helps achieve distance learning goals	3.44	0.94	68.87	8.202	0.000*	12
6.It leads to the development of students' self-learning skills	3.64	0.98	72.87	11.377	0.000*	6
7.This technology provides the student with an atmosphere of privacy.	3.65	0.94	73.00	11.976	0.000*	5
8.Helps in acquiring new skills in the field of computer.	3.73	0.87	74.67	14.588	0.000*	1
9.E-learning gives the student a space of scientific freedom	3.57	1.00	71.47	9.891	0.000*	10
10. It helps in exchanging experiences and information among students	3.40	1.01	68.07	6.903	0.000*	13
11. Helps develop scientific thinking skills	3.50	0.97	70.07	9.025	0.000*	11
12. E-learning helps provide programs that simulate reality	3.28	0.98	65.53	4.865	0.000*	14
13. It increases the interaction between the teacher and the student.	2.64	1.10	52.80	-5.690	0.000*	17
14. It increases the student's enthusiasm for learning.	2.61	1.16	52.13	-5.849	0.000*	18
15. Effective system in the educational process.	3.00	1.14	60.00	0.000*	1.000	15
16. Distance education contributes to saving time and effort for students.	3.63	1.15	72.67	9.560	0.000*	7
17. Distance education contributes to saving time and effort for faculty members	3.67	1.06	73.33	10.882	0.000*	3
18. Distance education contributes to improving the quality of sciences for students.	2.78	1.14	55.53	-3.387	0.001	16
Total	3.40	0.70	67.96	9.882	0.000*	

*The mean difference is significant at the 0.05 level.

Table (4.8) summarized the distribution of the study applicants according to their replies about the advantages of distance E-learning. Through using, a one-sample t-test this table shows that the weighted mean for the overall insights about the advantages of distance E-learning was 67.96%. According to the outcomes, the highest item was (8) "Helps in

acquiring new skills in the field of computer." with a weighted mean 74.6%, this result is congruent with (Albelbisi and Yasop 2019) the adjustment to distance education was difficult for learners from Turkey, Mexico, USA and the Peru, according to the results. The level of cognitive engagement was significantly influenced by their attitude toward the delivery method. In comparison to students who were enthusiastic about online learning, those who preferred traditional classes showed lower levels of cognitive participation and more difficulties with emergency distance education. According to our findings, having a positive attitude toward technology improves self-regulation skills and impacts learning positively.

Regarding the question about *"What do you like the most about E-learning?"* participant expressed that as the following:

"Increasing technological knowledge and skills and gaining more experience".
Another participant said: *"The possibility of returning to registration with ease and restarting it at any time suitable for studying over long periods is a good advantage for remote learning"*.

Come after that the item (6) " It leads to the development of students' self-learning skills" with a weighted mean equal to 72.8%, this reflects a similar study result by (Hodges et al., 2020) as he mentioned the student's preference for self-study over online lectures, whether synchronous or asynchronous. Students' carefree attitude and lower level of satisfaction with the quality of their learning were seen as long-term effects of the non-structured ERL experience.

Regarding the question about *"What do you like the most about E-learning?"* participant expressed that as the following:

"Due to the presence of recordings for each lecture, this system provides the choice of the appropriate times to study and listen to the recordings comfortably and calmly".
Another participant said: *"The presence of the full recording of the lecture in high quality and without interference that is difficult to avoid, such as what occurs in university halls and external corridors"*

Followed by item number (3) " An advanced and important technical system to meet the challenges of the times" with a weighted mean equal to 74%. The results are congruent with (Mukhtar et al., 2020) who reported given its many benefits, the current study encourages

the adoption of e-learning across healthcare and dentistry institutions. During this lockdown, online educational approaches are simple to manage and promote student-centered learning.

Concerning the question about “*What do you like the most about E-learning?*” participant express as the following:

“The quality of the recordings of the lectures has become better and the use of modern and more specialized programs”. Another one said: “The scheduled lecture time in e-learning is shorter than in face-to-face education, and this is nice”.

While the lowest item (14) "It increases the student's enthusiasm for learning." with a weighted mean equal to 52.2%. This result is in contrast to a study by (Prati et al., 2020) that states E-learning in some way encourages self-learning independence among students and improves their ability to use online resources.

Followed by item number (13) "It increases the interaction between the teacher and the student." with a weighted mean equal to 52.8%. The results are congruent with those found by (Kapasia et al., 2020) in which there is lack of organization during the delivery of ERL courses led to students' lacking enthusiasm, dissatisfied experiences, and depressing feelings. The learners declared that each course was planned out and taught in a unique way based on the choices made by the teachers and their readiness for ERL. Rather than intuitive and all-around planned internet-based tracks, the lecturers were ineffective or boring for the learners (Shcultz, 2020).

4.1.1.12 Distribution of the study applicants around a studied topic based on their response

Table (4.9): The distribution of candidates based on their answers to questions regarding a studied domain

All Studied domains	No, of items	Mean Score (5)	±SD	WM	t	P- value	Rank
D1: Logistical support	8	3.59	0.34	71.80	30.059	0.000*	2
D2: Human preparation	7	3.38	0.88	67.6	4.818	0.000*	4
D3: distance education infrastructure	9	3.24	0.93	64.80	5.231	0.000*	6
D4: The use of E-learning	12	3.03	0.58	60.60	0.965	0.336	7
D5: Student readiness	11	3.31	0.64	66.20	8.478	0.000*	5
D6: Obstacles ®	18	3.92	0.52	78.40	30.430	0.000*	1
D7: The advantages of distance E-learning	18	3.40	0.70	68.00	9.882	0.000*	3
Total	83	3.41	0.66	68.20	12.838	0.000*	

*Significant at P≤0.05; P>0 05: Not significant; ®: reverse domain; WM: weighted mean; SD: standard deviation & t: One sample t-test.

Table (4.9) summarized the distribution of the study participants according to their responses about a studied domain. By using a one-sample t-test this table shows that the weighted mean for the overall perceptions about a studied domain was 68.2%.

According to the results, the highest domain was the number (6) "**D6 Obstacles**" with a mean of 3.92 with a weighted mean equal to 78.4%, this reflects the scope of the obstacles facing students in distance education. The proof that is suggests that due to the abrupt and total changeover during COVID-19, learners, as well as educators, experienced a variety of issues, such as a failure to adjust to innovation, poor time management, an inadequate level of interactions, or inadequate support services, which ultimately led to disappointment with distance education (Abbasi et al., 2020), (Avunduk, 2021) & (Dost et al., 2020).

The first domain holds the second rank domain number (1) "**D1: Logistical support**" with a mean of 3.59 with a weighted mean equal to 71.8%. revealing that the problems include inadequate infrastructure, sluggish performance, and poor video or visual output quality that are used in online learning medical and health education, lack of modern software components, internet downloads that are too slow, poor computer services, and inconsistent power supplies, and this outcome is consistent with other research findings as (Agrawal et al., 2011) & (Kaliyadan et al., 2010). The integration of electronic resources and mediums whose role is to foster development and to make education and training more beneficial. This result is consistent with the study of (Burac et al., 2019), (Lochner et al., 2016) in which the majority of the studies point out learners usually have favorable perceptions of online learning. Also, similar to a study done by (Alsaaty et al., 2016), despite the fact they occasionally experienced technical difficulties and believe that they processed the knowledge in the older courses better.

While the lowest domain (4) "**The use of E-learning**" with a mean of 3.03 and represents 60.6%. Which showed the moderately satisfied and accepted dental students for online education. The results of a study by (Wittich et al., 2017), which examined electronic education in graduate medical training programs, were consistent with this finding and did a study that said that e-learning is used by the majority of internal medicine residency programs in the United States, and students have a more favorable opinion of it. On the contrary, the findings from (Noesgaard & Orngreen, 2015) who found that dental students in this study had a low acceptance of e-learning are comparable with the minimal agreement of dental learners in this study because teachers can use a variety of strategies depending on the situation, it was difficult to prove that remote education improves learning. In this context, various studies (Hantash et al., 2020) showed that pure E-learning also addressed

the challenge of the lack of face-to-face learning, which contributed to professional loneliness and decreased learning skills.

Followed by domain number (3) " **D3: distance education infrastructure**" with a mean of 3.24 with a weighted mean equal to 64.8%. Revealing that the results of this investigation could be explained by frequent electrical outages, bandwidth restrictions, and poor infrastructure. According to a study by Frehywot et al. (2013), developing nations frequently lack the institutional zeal for people and physical resources that is necessary for E-learning to succeed. However, due to its difficult social and economic circumstances, Palestine might be seen as one of the aforementioned nations in this sense.

4.1.1.13 The gender-related researched domains' the mean difference

Table (4.10): The gender-related researched domains' the mean difference

Domains	Gender	N	Mean	SD	t	P-value
D1: Logistical support	Male	70	3.70	0.39	2.967	0.003*
	Female	230	3.56	0.32		
D2: Human preparation	Male	70	3.39	0.61	0.708	0.644
	Female	230	3.33	0.67		
D3: distance education infrastructure	Male	70	3.20	0.46	1.516	0.229
	Female	230	3.35	0.48		
D4: The use of E-learning	Male	70	3.19	0.59	2.592	0.010*
	Female	230	2.98	0.57		
D5: Student readiness	Male	70	3.48	0.54	2.465	0.014*
	Female	230	3.26	0.66		
D6 Obstacles®	Male	70	3.89	0.57	-0.514	0.608
	Female	230	3.93	0.51		
D7: The advantages of distance E-learning	Male	70	3.57	0.63	2.365	0.019*
	Female	230	3.35	0.71		
Total	Male	70	3.50	0.43	2.820	0.012*
	Female	230	3.34	0.48		

*The mean difference is significant at the 0.05 level.

Table (4.10) displayed the mean difference of studied fields domains related to gender. The results showed that the average of the male is higher statistical significantly compared to females in the mean of the D1: logistical support, D4: the use of E-learning, D5: Student readiness, D7: the advantages of distance E-learning and domain overall ($P < 0.05$). Despite the fact that other analyzed domains did not demonstrate any statistically significant differences such as D2: Human preparation, D3: distance education infrastructure, and D6 Obstacles ($P > 0.05$). This result can be explained by the small sample size of the participating males, which amounted to 70 male students compared to 230 female students. This finding

is in contrast with a study by (Jayasinghe et al., 2021), when compared to male students, female students had well entire e-learning skills than university education chances, and this variance was statistically significant ($p= 0.000$). corresponding to a research by (Helland et al., 2022) who reported that female students were more enthusiastic compared to their male counterparts, they were less confident about digital education while also feeling more anxious about missing out on crucial learning ($p = 0.05$).

4.1.1.14 Mean difference between studied subjects and educational level

Table (4.11): Mean difference between studied subjects and educational level

Domains	Study level	N	Mean	SD	F	P-value
D1: Logistical support	3 rd level	133	3.67	0.36	6.351	0.002*
	4 th level	96	3.53	0.30		
	5 th level	71	3.54	0.34		
	Total	300	3.59	0.34		
D2: Human preparation	3 rd level	133	3.33	0.68	1.035	0.149
	4 th level	96	3.38	0.66		
	5 th level	71	3.35	0.62		
	Total	300	3.34	0.66		
D3: distance education infrastructure	3 rd level	133	3.36	0.51	1.866	0.240
	4 th level	96	3.10	0.49		
	5 th level	71	3.45	0.37		
	Total	300	3.24	0.63		
D4: The use of E-learning	3 rd level	133	3.00	0.63	0.828	0.438
	4 th level	96	3.10	0.58		
	5 th level	71	3.01	0.49		
	Total	300	3.03	0.58		
D5: Student readiness	3 rd level	133	3.28	0.75	0.536	0.586
	4 th level	96	3.37	0.54		
	5 th level	71	3.31	0.52		
	Total	300	3.31	0.64		
D6: Obstacles ®	3 rd level	133	3.93	0.59	1.171	0.312
	4 th level	96	3.86	0.52		
	5 th level	71	3.98	0.35		
	Total	300	3.92	0.52		
D7: The advantages of distance E-learning	3 rd level	133	3.29	0.77	3.569	0.029*
	4 th level	96	3.53	0.68		
	5 th level	71	3.43	0.53		
	Total	300	3.40	0.70		
Total	3 rd level	133	3.34	0.53	1.548	0.256
	4 th level	96	3.56	0.44		
	5 th level	71	3.36	0.35		
	Total	300	3.41	0.63		

*The mean difference is significant at the 0.05 level.

The mean difference of studied domains related to educational level is pointed out in table (4.11). The results showed that statistically significant difference in the average of D1: Logistical support and D7: the advantages of distance E-learning. We can explain this result to the fact that the third-level participants have the degree of their cognitive abilities in the field of logistical support for distance e-learning varies with other levels, but it tends to the third level more. Therefore, they are more vulnerable to the obstacles of education and distance learning and sufficient funding to support and develop distance education. Accordingly, they are more sensitive and expressive compared to other educational levels. Despite the fact that the statistical analysis revealed no statistically significant difference between educational levels in the mean of the studied domains as D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness and D6: Obstacles® and domain as total ($P > 0.05$).

4.1.1.15 Post-hoc testing of the domains with the most significant differences in means for their study level

Table (4.12): Post Hoc test of mean difference of D1: logistical support and D7: the advantages of distance E-learning related to their educational level

Dependent Variable	(I) Educational level	(J) Educational level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower	Upper
D1 logistical support	3th level	4th level	0.14	0.04	0.002*	0.05	0.23
		5th level	0.13	0.05	0.007*	0.04	0.23
	4th level	5th level	-0.01	0.05	0.847	-0.11	0.09
D7 the advantages of distance e-learning	3th level	4th level	-0.24	0.09	0.009*	-0.43	-0.06
		5th level	-0.14	0.10	0.172	-0.34	0.06
	4th level	5th level	0.11	0.11	0.330	-0.11	0.32

*The mean difference is significant at the 0.05 level.

Table (4.12) illustrated the Post Hoc test of mean difference in D1: logistical support and D7: the advantages of distance E-learning related to their educational level. The results showed that the average of D1: logistical support among the 3rd level is higher statistically significant compared to the 4th and 5th levels. While the average of D7 the advantages of distance e-learning are lower statistically significant in 3rd levels compared to 4th levels ($P < 0.05$). Against this, the results showed that it is not statistically significantly different from other studied domains regarding Educational level.

4.1.1.16 Mean difference of university-related study areas

Table (4.13): Mean difference of university-related study areas

Domain	University	N	Mean	SD	t	P-value
D1: Logistical support	Palestine	123	3.72	0.34	5.672	0.000*
	Al-Azhar	177	3.50	0.31		
D2: Human preparation	Palestine	123	3.54	0.65	5.117	0.000*
	Al-Azhar	177	3.21	0.64		
D3: distance education infrastructure	Palestine	123	3.53	0.47	4.345	0.000*
	Al-Azhar	177	3.09	0.46		
D4: The use of E-learning	Palestine	123	3.25	0.57	5.575	0.000*
	Al-Azhar	177	2.88	0.55		
D5: Student readiness	Palestine	123	3.59	0.56	6.568	0.000*
	Al-Azhar	177	3.12	0.63		
D6: Obstacles ®	Palestine	123	3.89	0.55	-0.905	0.366
	Al-Azhar	177	3.94	0.50		
D7: The advantages of distance E-learning	Palestine	123	3.57	0.67	3.579	0.000*
	Al-Azhar	177	3.28	0.70		
Total	Palestine	123	3.55	0.47	6.190	0.000*
	Al-Azhar	177	3.26	0.43		

*The mean difference is significant at the 0.05 level.

Table (4.13) displayed the mean difference of studied domains related to the university. The results showed that the average of Palestine is higher statistically significant compared to Al-Azhar in the mean of the D1: logistical support, D2: Human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D7: the advantages of distance E-learning and domain as a total ($P < 0.05$). While the table showed that there is no statistically significant, difference in others studied domains such as D6: Obstacles ($P > 0.05$).

4.1.1.17 Mean difference between research domains related to their governorate

Table (4.14): Mean difference between research domains related to their governorate

Domains	Governorate	N	Mean	SD	F	P-value
D1 logistical support	Gaza	161	3.57	0.31	1.243	0.293
	North Gaza	30	3.62	0.32		
	Central Gaza	45	3.59	0.41		
	Khan Younes	43	3.69	0.38		
	Rafah	21	3.53	0.34		
	Total	300	3.59	0.34		
D2 human preparation	Gaza	161	3.38	0.62	0.734	0.247
	North Gaza	30	3.30	0.59		
	Central Gaza	45	3.18	0.69		
	Khan Younes	43	3.49	0.76		
	Rafah	21	3.26	0.66		
	Total	300	3.34	0.66		
D3 distance education infrastructure	Gaza	161	2.95	0.46	0.690	0.784
	North Gaza	30	3.28	0.51		
	Central Gaza	45	3.35	0.49		
	Khan Younes	43	3.10	0.54		
	Rafah	21	3.50	0.39		
	Total	300	3.24	0.63		
D4 the use of E-learning	Gaza	161	3.03	0.56	1.541	0.190
	North Gaza	30	3.02	0.69		
	Central Gaza	45	2.87	0.68		
	Khan Younes	43	3.16	0.55		
	Rafah	21	3.14	0.45		
	Total	300	3.03	0.58		
D5: Student readiness	Gaza	161	3.31	0.64	2.190	0.070
	North Gaza	30	3.31	0.59		
	Central Gaza	45	3.10	0.69		
	Khan Younes	43	3.46	0.67		
	Rafah	21	3.48	0.47		
	Total	300	3.31	0.64		
D6 Obstacles ®	Gaza	161	3.92	0.55	0.549	0.700
	North Gaza	30	4.03	0.40		
	Central Gaza	45	3.92	0.59		
	Khan Younes	43	3.85	0.47		
	Rafah	21	3.91	0.45		
	Total	300	3.92	0.52		
D7: the advantages of distance e-learning	Gaza	161	3.42	0.67	2.160	0.074
	North Gaza	30	3.19	0.73		
	Central Gaza	45	3.24	0.82		
	Khan Younes	43	3.57	0.61		
	Rafah	21	3.52	0.63		
	Total	300	3.40	0.70		
Total	Gaza	161	3.39	0.47	2.198	0.103
	North Gaza	30	3.30	0.49		
	Central Gaza	45	3.26	0.55		
	Khan Younes	43	3.51	0.43		
	Rafah	21	3.44	0.34		
	Total	300	3.41	0.63		

The mean difference of studied domains related to governorate is pointed out in table (4.14). According to the results of the one-way ANOVA test, there is no statistically significant difference between governorates in the mean of the studied domains as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domain as whole ($P > 0.05$).

4.1.1.18 Mean difference of research domains correlated to the fixed internet line at home

Table (4.15): Mean difference of research domains correlated to the fixed internet line at home

Domains	Have a fixed internet line at home	N	Mean	SD	t	P-value
D1: Logistical support	No	23	3.72	0.40	1.900	0.058
	Yes	277	3.58	0.34		
D2: Human preparation	No	23	3.54	0.91	1.701	0.175
	Yes	277	3.33	0.64		
D3: distance education infrastructure	No	23	3.08	0.66	-2.046	0.095
	Yes	277	3.43	0.46		
D4: The use of E-learning	No	23	2.95	0.82	-0.742	0.459
	Yes	277	3.04	0.56		
D5: Student readiness	No	23	3.09	0.92	-1.739	0.083
	Yes	277	3.33	0.61		
D6: Obstacles ®	No	23	3.94	0.73	0.238	0.812
	Yes	277	3.92	0.50		
D7: The advantages of distance E-learning	No	23	3.19	1.00	-1.519	0.130
	Yes	277	3.42	0.67		
Total	No	23	3.57	0.75	-1.107	0.329
	Yes	277	3.39	0.44		

The mean difference of the analyzed domains associated to fixed internet lines at home was displayed in Table (4.15). There is no statistically significant difference between the groups, according to the test findings as those who have fixed internet lines compared to those who haven't in the mean of the studied domain as D1: logistical support, D 2: human preparation, D 3: distance education infrastructure, D 4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domain as a whole ($P > 0.05$).

4.1.1.19 Mean difference of research domains linked to use temporary internet cards

Table (4.16): Mean difference of research domains linked to use temporary internet cards

Domains	Use temporary internet cards	N	Mean	SD	t	P-value
D1: Logistical support	No	241	3.58	0.34	-1.506	0.133
	Yes	59	3.65	0.34		
D2: Human preparation	No	241	3.34	0.65	-0.580	0.733
	Yes	59	3.39	0.72		
D3: distance education infrastructure	No	241	3.10	0.47	1.432	0.260
	Yes	59	3.35	0.50		
D4: The use of E-learning	No	241	3.04	0.57	0.394	0.694
	Yes	59	3.01	0.66		
D5: Student readiness	No	241	3.32	0.61	0.498	0.619
	Yes	59	3.28	0.75		
D6: Obstacles ®	No	241	3.94	0.48	1.226	0.221
	Yes	59	3.84	0.66		
D7: The advantages of distance E-learning	No	241	3.41	0.66	0.479	0.632
	Yes	59	3.36	0.85		
Total	No	241	3.44	0.44	-0.027	0.979
	Yes	59	3.38	0.58		

Table (4.16) showed the mean difference of research domain related to the use of temporary internet cards. The results showed that the average of no statistically significant difference between those who used temporary internet cards or don't use temporary internet cards in the mean of the studied domain as D 1: logistical support, D 2: human preparation, D 3: distance education infrastructure, D 4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domains as a whole ($P>0.05$).

4.1.1.20 Mean difference of research domains linked to their E-learning method

Table (4.17a): Mean difference of research domains linked to their E-learning method

Domains	E-learning method	N	Mean	SD	F	P-value
D1: Logistical support	Laptop	188	3.60	0.32	0.896	0.443
	Computer	3	3.88	0.25		
	Cell phone	97	3.57	0.36		
	Tablet	12	3.60	0.47		
	Total	300	3.59	0.34		
D2: Human preparation	Laptop	188	3.38	0.61	1.659	0.282
	Computer	3	3.25	0.35		
	Cell phone	97	3.26	0.73		
	Tablet	12	3.62	0.67		
	Total	300	3.34	0.66		

Table (4.17b): Mean difference of research domains linked to their E-learning method

Domains	E-learning method	N	Mean	SD	F	P-value
D3: distance education infrastructure	Laptop	188	3.44	0.456	1.667	0.275
	Computer	3	3.73	0.40		
	Cell phone	97	2.97	0.53		
	Tablet	12	3.09	0.33		
	Total	300	3.24	0.63		
D4: The use of E-learning	Laptop	188	3.07	0.55	2.696	0.046*
	Computer	3	3.42	0.71		
	Cell phone	97	2.92	0.62		
	Tablet	12	3.29	0.66		
	Total	300	3.03	0.58		
D5: Student readiness	Laptop	188	3.37	0.59	4.434	0.005*
	Computer	3	3.67	0.37		
	Cell phone	97	3.15	0.72		
	Tablet	12	3.67	0.54		
	Total	300	3.31	0.64		
D6: Obstacles ®	Laptop	188	3.92	0.49	3.153	0.025*
	Computer	3	4.15	0.37		
	Cell phone	97	3.96	0.56		
	Tablet	12	3.49	0.54		
	Total	300	3.92	0.52		
D7: The advantages of distance E-learning	Laptop	188	3.45	0.63	3.604	0.014*
	Computer	3	3.72	0.42		
	Cell phone	97	3.24	0.79		
	Tablet	12	3.81	0.68		
	Total	300	3.40	0.70		
Total	Laptop	188	3.41	0.42	4.939	0.003*
	Computer	3	3.58	0.27		
	Cell phone	97	3.27	0.53		
	Tablet	12	3.72	0.51		
	Total	300	3.41	0.63		

*The mean difference is significant at the 0.05 level.

The mean difference of studied domains related to the E-learning method is pointed out in table (4.17). According to the results of the one-way ANOVA test, there is a statistically significant difference between the E-learning approach and the examined domain's mean as D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domain as a whole ($P < 0.05$). Whereas the analysis revealed no statistically significant difference between the E-learning approach and the analyzed domain's mean as D1: logistical support, D2: human preparation, and D3: distance education infrastructure, ($P > 0.05$).

4.1.1.21 Post-hoc test of the domains with the most significant differences in terms of their E-learning method.

Table (4.18): Post Hoc test of mean difference of D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domain as total related to their E-learning method

Dependent Variable	(I) E-learning method	(J) E-learning method	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
D4: the use of E-learning	Laptop	Computer	-0.35	0.34	0.301	-1.01	0.31
		Cell phone	0.15	0.07	0.042	0.01	0.29
		Tablet	-0.22	0.17	0.195	-0.56	0.12
	Computer	Cell phone	0.50	0.34	0.144	-0.17	1.16
		Tablet	0.13	0.37	0.738	-0.61	0.86
	Cell phone	Tablet	-0.37	0.18	0.037*	-0.72	-0.02
D5: Student readiness	Laptop	Computer	-0.30	0.37	0.419	-1.02	0.42
		Cell phone	0.22	0.08	0.005*	0.07	0.38
		Tablet	-0.30	0.19	0.106	-0.67	0.06
	Computer	Cell phone	0.52	0.37	0.159	-0.20	1.25
		Tablet	-0.01	0.41	0.985	-0.81	0.79
	Cell phone	Tablet	-0.53	0.19	0.006*	-0.91	-0.15
D6 Obstacles ®	Laptop	Computer	-0.23	0.30	0.452	-0.82	0.37
		Cell phone	-0.04	0.06	0.535	-0.17	0.09
		Tablet	0.43	0.15	0.006*	0.13	0.73
	Computer	Cell phone	0.19	0.30	0.539	-0.41	0.78
		Tablet	0.66	0.33	0.049*	0.00	1.32
	Cell phone	Tablet	0.47	0.16	0.003*	0.16	0.78
D7: the advantages of distance e-learning	Laptop	Computer	-0.28	0.40	0.490	-1.07	0.51
		Cell phone	0.20	0.09	0.020*	0.03	0.37
		Tablet	-0.37	0.20	0.072	-0.77	0.03
	Computer	Cell phone	0.48	0.40	0.237	-0.32	1.27
		Tablet	-0.09	0.44	0.835	-0.97	0.78
	Cell phone	Tablet	-0.57	0.21	0.007*	-0.99	-0.16
Total	Laptop	Computer	-0.15	0.24	0.537	-0.61	0.32
		Cell phone	0.12	0.05	0.016*	0.02	0.22
		Tablet	-0.27	0.12	0.029*	-0.50	-0.03
	Computer	Cell phone	0.27	0.24	0.259	-0.20	0.74
		Tablet	-0.12	0.26	0.649	-0.64	0.40
	Cell phone	Tablet	-0.39	0.12	0.002*	-0.63	-0.14
* The mean difference is significant at the 0.05 level.							

Table (4.18) illustrated the Post Hoc test of mean difference in D4: the use of E-learning, D5: Student readiness, D6: Obstacles, and D7: the advantages of distance E-learning and domain as totally related to their E-learning methods. The results showed that the average of D4: the use of E-learning, D5: Student readiness, and D7: the advantages of distance E-learning and domain as total among Cell phones are higher statistically significant compared to Tablets. While the average of D6: Obstacles among Cell phones is inferior statistically significant compared to Tablet ($P < 0.05$). Moreover, the outcomes revealed that the average of D5: Student readiness among Computer is higher significant statistically compared to the Cell phone ($P < 0.05$), and the average of D6: Obstacles among cell phones is lower statistically significant compared to Computers while the average of D6: Obstacles among cell phone higher statistically significant compared to Tablet ($P < 0.05$). Regarding D7: the advantages of distance e-learning, the results showed that Cell phones are lesser significant statistically compared to computers and tablets ($P < 0.05$). The rate of the domain as an overall among laptops is lower statistically significant compared to a Cell phone while the average of the domain as a total among Laptops is higher statistically significant compared to Tablets ($P < 0.05$). However, the findings indicated that there is no statistically significant difference from other studied domains regarding E-learning methods ($P > 0.05$).

4.2 Results for lecturer's perception:

4.2.1 Descriptive statistics lecturer's perception Part

4.2.1.1 Distribution of the sample based on sociodemographic information

The current study was a cross-sectional study with 20 participants. Among the sociodemographic features that were examined gender, age, governorate, university, qualification, professional certificates, academic rank, the practice of E-learning before, experience in dentistry, and academic years of experience.

4.2.1.2 Depending on their socio-demographic information, the distribution of the study population

Table (4.19): Depending on their socio-demographic information, the distribution of the study population

Items		Number	%
Gender	Male	16	80
	Female	4	20
	Total	20	100.0
Age groups	The average age = 41.4 ±6.5 years.		
	40 years or less	9	10.0
	> 40 years	11	67.0
	Total	20	100.0
University	Palestine	12	60
	Al-Azhar	8	40
	Total	20	100.0
Governorate	Gaza	13	65
	North Gaza	2	10
	Middle zone	3	15
	Khan Younes	2	10
	Total	20	100.0
Do you have a fixed internet line at home?	Yes	277	92.3
	No	23	7.7
	Total	20	100
Qualification	Master degree	11	55
	Ph. Degree	6	30
	Board degree	3	15
	Total	20	100
Dental specialties	Orthodontist	3	15
	Endodontist	1	5
	Fixed Prosthodontist	2	10
	Oral and Maxillofacial Surgeon	3	15
	Conservative dentistry specialist	1	5
	Removable Prosthodontist	2	10
	Periodontist	3	15
	others	5	25
Total	20	100	
Academic Rank	Instructor	12	60
	Assistant Professor	7	35
	Associate Professor	1	5
	Total	20	100
Have you practice e-learning before	Yes	20	100
	No	0	0
	Total	20	100
Years of experience in dentistry	Less than 10 years	4	20
	15-10	13	65
	More than 20 years	3	15
	Total	20	100
Academic years of experience	Less than 10 years	7	35
	15-10	8	40
	More than 20 years	5	25
	Total	20	100

Table (4.19) demonstrated that more than fifty percent of the study population (65.0%) were from Gaza, (15.0%) of them were from the Middle zone, (10.0%) of them were from Khan Younis, (10.0%) of them were from North Gaza, and none of them were from Rafah. It also showed that (60.0%) of the study population graduated from Palestine University and (40.0%) of them graduated from Al-Azhar university.

The table also illustrated that (15.0%) of the study population were orthodontists, (15.0%) were oral and maxillofacial surgeons, (15.0%) of them were periodontists, (10.0%) of them were fixed prosthodontists, (10.0%) were removable prosthodontists, (5.0%) of them were endodontists, (5.0%) of them were conservative dentistry specialists, and (25.0%) of them had other certificates. None of the study population was a dental Implantologist or Pedodontics.

Moreover, the table demonstrated that more than fifty percent of the study population (60.0%) were Instructors, while (35.0%) of them were Assistant Professors, and (5.0%) of them were Associate Professors. It also showed that all of the study population (100%) practiced earning before and it was clear from the table that more than fifty percent (65.0%) of the study population have 10-15 years of experience in dentistry, while (20.0%) of them had less than 10 years of experience in dentistry, and (15.0%) of them had more than 20 years of experience in dentistry. The table also showed that (40.0%) of the study population had between 8 to 10 academic years of experience, while (35.0%) had less than 10 academic years of experience and (25.0%) of them had more than 10 academic years of experience.

4.2.1.3 Gender distribution within the research population

According to table (4.20), there are 80% male participants and 20% female participants. That reflects the fact that male lecturers predominate at dentistry colleges. The percentages of lecturers by gender are shown in Figure (4.1).

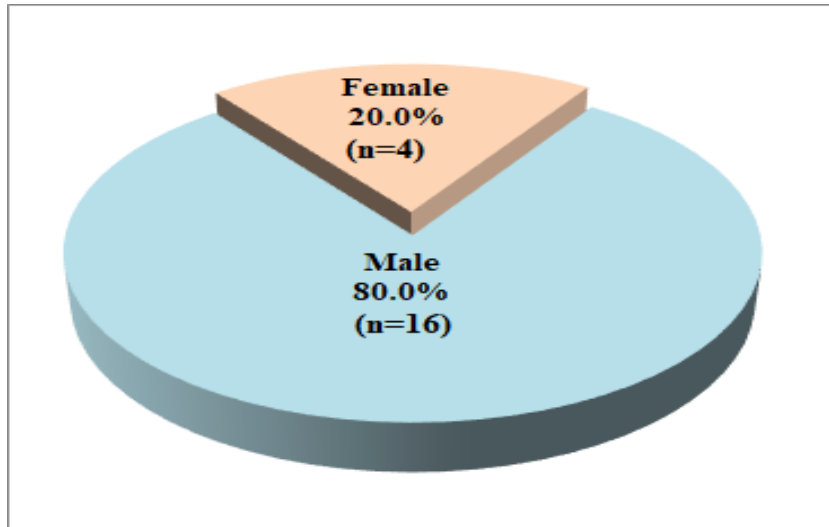


Figure (4.3): Gender distribution within the studied population, which highlighted that 20% of the study population was female and 80% of the participants were male.

4.2.1.4 Age distribution of the participants in the research

Figure (4.5) showed that the highest age groupings of the participants were those who were over 40 (67%) and those who were under 40 (23%). The average age among participants was 41.4 ± 6.5 years.

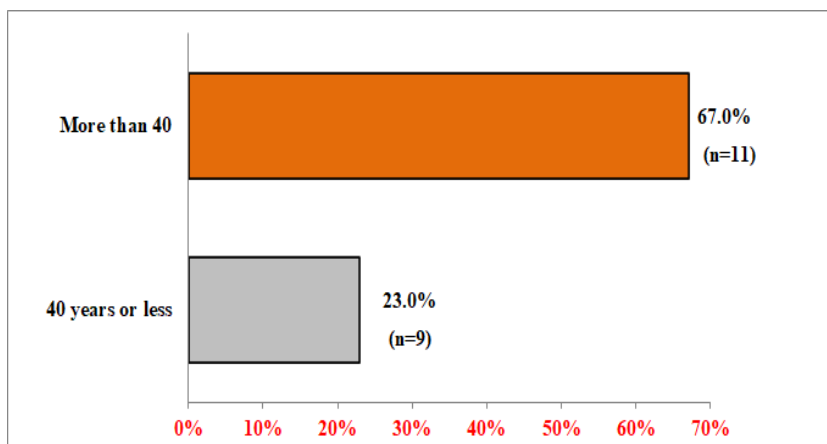


Figure (4.4): Age distribution of the participants in the research

4.2.1.5 Distribution of the study population by qualification-based

According to the distributions of the study population's by academic qualifications, the highest group of the population completed a master's degree (55%) followed by a Ph.D. (30%) and a Board (15%) (Figure 4.6).

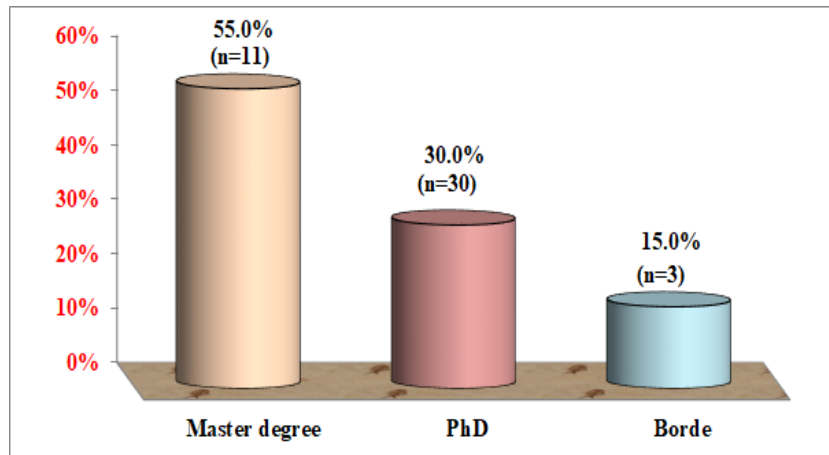


Figure (4.5): Distribution of study population based on academic qualification

4.2.1.6 Mean scores of items calculating the logistical support

Table (4.20): Mean scores of items calculating logistical support

The logistical support items	Mean	SD	WM	t	P-value	Rank
1. There is sufficient funding to support and develop distance education	2.50	0.95	50.00	-2.364	0.029	7
2. The lack of modern software components affects the quality of distance education®	4.40	0.60	88.00	10.466	0.000*	3
3. The lack of human resources, including engineers and assistant technicians, affects the quality of distance education®	4.45	0.76	89.00	8.542	0.000*	2
4. There is a shortage of electronic educational resources®	4.15	0.67	83.00	7.667	0.000*	5
5. Low internet speed affects the efficiency of distance education®	4.75	0.44	95.00	17.616	0.000*	1
6. There is a department to support distance E-learning at the university.	2.15	0.67	43.00	-5.667	0.000*	8
7. There is a unified educational platform at the university for lecturers and students	4.25	0.55	85.00	10.162	0.000*	4
8. The high cost of the Internet affects the application of distance education®	2.7	1.26	66.00	-10.162	0.000*	6
Total	3.67	0.34	73.40	1.064	0.301	

*The mean difference is significant at the 0.05 level.

Table (4.20) summarized the distribution of the study applicants according to their replies about D1: Logistical support. By using a one- sample t- test this table shows that the weighted mean for the overall perceptions around D1: Logistical support 73.4%. Based on the outcomes, the highest item (5) "Low internet speed affects the efficiency of distance

education" with a weighted mean equal 95%. This is similar to the result of students as most lecturers agreed network issues were the most common impeding factor in the conduction of E-learning. This is because the internet speed is not suitable in some areas, which has created a discrepancy in the reception and exchange of information, in addition to the occurrence of power outages in Palestine during the Corona crisis. This is consistent with (Padhi et al., 2021), who conducted an online questionnaire-based cross-sectional study among learners and educators in India, and reported that according to most participants, network issues were the most common impeding factor in E-learning. And similar to the studies of (Ansar et al., 2020), (Samra et al., 2021) & (Mishra et al., 2020).

Followed by item number (3) "The lack of human resources, including engineers and assistant technicians, affects the quality of distance education "with a weighted mean equal to 89%. This is due to the sudden change to online education which throughout this epidemic, is regarded as an emergency and contingency strategy. To implement this strategy, educational institutions need well-thought-out plans, a substantial budget, sufficient technical assistance, and a qualified personnel, this result is consistent with the studies of (Kaliyadan et al., 2010). A study by (Khlaif et al., 2021) shows that poor internet connection and lack of technical support affect digital education in a major way.

FGDs provided answers to the linked questions about the qualitative component of this domain: *"To what extent do lecturers possess the knowledge and electronic capabilities necessary to work remotely"* as the following:

"In order to lessen their burden throughout the changeover, lecturers stressed their need for additional technical support due to the variety of online platforms and tools and the students' having no experience with using them. Lecturer clearly indicated "The technical assistance is required at any interval, both in the course of and outer of work hours, as well as over the phone." Different lecturer said in support of the prior statement. "We (lecturers) require immediate help with technology instantly over telephone calls to achieve better communication."

While the lowest item (6) "There is a department to support distance E-learning at the university "with a weighted mean equal 43%. Followed by item was (1) "There is sufficient

funding to support and develop distance education "with a weighted mean equal to 50%. This result reflects the lack of sufficient support to provide the basics necessary for distance education. According to a study by (Frehywot et al., 2013), developing nations frequently lack the institutional zeal for people and physical resources that is necessary for E-learning to succeed.

Regarding the importance of the funding to maintain the electricity and WiFi connection, "What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study" and its relevancy to support and develop distance education, the lecturer's opinions are as the following:

I believe that there should be a major effort made to fix the electrical and WiFi connectivity issues.", "Because some learners had trouble connecting to the lessons via the Internet. I do not have very high expectations". Another participant said: "Internet dysconnectivity considered the foremost obstacle or trouble that I confronted during the switch to remote educating in the Coronavirus time". One of the participant stated: "This was a terrible experience due to the reality that not every learner has internet access and the connection issue". Another participant stated with annoyance that: " Technical difficulties while teaching in the class had delayed the work".

Followed by item was the number (8) "The high cost of the Internet affects the application of distance education "with a weighted mean equal to 66%. The findings of this study are comparable to those of (Draissi & ZhanYong, 2020), which showed that the enforcement of distance learning in Moroccan universities faced some challenges and difficulties for both lecturers and students during the response to the COVID-19 disease outbreak. In addition, the results are similar to a study done by (Cao et al., 2020), which stated that learners complained around unsteady internet connections and an increased economic load for internet quota in addition to the obstacles posed by infrastructure. Additionally, one-third of the study's participants reported experiencing stress, which may have influenced their perception of the learning methods.

4.2.1.7 Mean scores of items calculating the human preparation

Table (4.21): Mean scores of items calculating the human preparation

The human preparation items	Mean	SD	WM	t	P-value	Rank
1. Faculty members have sufficient capacity to meet the needs of remote teaching in emergency situations?	3.50	0.76	70.00	2.939	0.008*	6
2. Is there a continuous development for faculty members to enable them to teach emergency remotely?	3.10	0.85	62.00	0.525	0.606	7
3. The lecturers' lack of knowledge of the learning and education strategy according to the education and distance E-learning methodology. ®	3.60	0.68	72.00	3.943	0.001*	5
4. There is a problem in the path followed in the preparation, preparation and professional development of academic human resources (all employees in educational institutions) ®	3.65	0.88	73.00	3.322	0.004*	3
5. Faculty members are trained in the use of educational platforms before they are used	3.75	0.85	75.00	3.943	0.001*	2
6. Some faculty members lack modern technical skills in the E-learning process ®.	4.15	0.59	83.00	8.759	0.000*	1
7. There is a difficulty in dealing with educational and educational platforms, their environments and various tools. ®	3.65	1.18	73.00	2.459	0.024*	3
Total	3.63	0.83	72.60	2.308	0.032	

*The mean difference is significant at the 0.05 level.

Table (4.21) summarized the distribution of the study applicants according to their replies about D2: Human preparation, with using a one-sample t-test this table shows the weighted mean for the total perceptions around D2: Human preparation 72.6%. Based on the outcomes, the highest item was (6) "Some faculty members lack modern technical skills in the E-learning process" with a weighted mean equal to 83%, this also reflects the same perception of students with the lecturers as the students and lecturers are significant stakeholders whose opinions should be taken into account when implementing the digital learning strategy. According to the experience of the lecturers and students, the results of the present study are comparable to (Shearer et al., 2020) study. Three qualities of a teacher control over technology, teaching approach, and attitude toward technology are responsible for the overall effectiveness of an e-learning deployment.

The model of approval of technology asserts that in terms of attitude, technology will be adopted if it has two qualities in the eyes of the user: perceived usability and convenience of use (Al-Qaysi et al., 2020). Consequently, it is likely that a teacher or student will reject or demonstrate resistance to its use if they believe that technological innovation is not advantageous to them. According to the current research, neither teachers nor students were familiar with the tools required to support online education, which explains the opposition experienced at the beginning of the lockdown.

Others didn't find the technology useful because they didn't use it often in education and it wasn't widely used before the pandemic. During a focus group discussion, the following point came up:

“In my personal technological experience, it can be difficult to distinguish between a system's utility and its user-friendliness. Both instructors and students need to be able to use an e-learning system as quickly and easily as possible”.

Followed by item number (5) "Faculty members are trained in the use of educational platforms before they are used "with a weighted mean equal to 75%. (Ma et al., 2021) demonstrated that teachers with prior experience using technological devices had higher self-reported online learning efficacy. Ma and colleagues come to the conclusion that instructors only experience the effects of technological problems when they are unfamiliar with other forms of technology. In addition, the result is similar to the studies of (Corry & Stella, 2018), (Presno, 1998), teachers' self-efficacy, motivation, and confidence would all be raised by improving educational and online environments. Educating instructors in the use of computers and other technical tools is one strategy to improve the quality of online

educational situations. According to Robinia and Anderson (2010), knowing this improved teachers' levels of mastery of the internet-based situation and their capacity to oversee the online classroom.

While the lowest item (2) "Is there continuous development for faculty members to enable them to teach emergency remotely" with a weighted mean equal to 62%. This identified the time-consuming aspects of digital platforms, an inability of understanding of online educational concepts, the absence of interaction between the instructors and the students, and the technological challenges that are currently being faced by instructors who use online platforms to promote educating are some of the issues that should be conducted for participants which need solutions, this finding are similar to the study of (Richter & Idleman, 2017). (Robinia & Anderson, 2010) reported having previously taught online and having certified lecturers with the knowledge and abilities to use online tools and resources in an effort to boost student involvement and motivation. In order to maintain faculty development, professionalism, and high levels of qualification, it is required to prepare training courses regularly.

FGDs responded to questions "What is main reason or big obstacle from the lecturer's - student's point of view for the lack of success of distance study?" " The participants stated as the following:

All come to an agreement that lecturers have to get brief programs and courses: " In our opinion, instructors ought to take quick courses and gain knowledge of running online classrooms and understand the types of tests and exams that students will require and assess them appropriately," One of the participants said: "a lack of experience as a result of the emergency and the rapid transition to distance education, which had an impact on the quality of information students received, as well as a lack of technical support and solutions for all faculty members' challenges".

All of these findings come back to the lecturers' and students' perceptions of their usefulness. Lecturers and students should demonstrate dedication to and affirmative view toward systems for distance learning in order to be prepared for the deployment (Martin et al., 2020). Thus, the overall implementation of online learning is hindered by the failure of lecturers and students to comprehend how the system functions across various devices. According to the study (Zalat et al., 2021) revealed that a majority of the participants in the online courses were more difficult for students than in-person tests in traditional classroom exams, according to the study, which was either agreed upon or highly agreed with. In contrast to

essay questions in a classroom context, online tests are typically completed quickly and allow the assessment of numerous students at once with multiple questions. This may account for this view.

Followed by item was the number (1) "Faculty members have sufficient capacity to meet the needs of a remote teaching in emergencies?" With a weighted mean equal 70%. This outcome is congruent with (Zalat et al., 2021), who reported as due to its versatility, some researchers prefer using online teaching and learning techniques. On the other hand (Hannafin et al., 2003) stated that others believe that informal assessments, as opposed to interactive and observant ones, are more difficult for teachers to conduct in an online classroom.

When asked if the topic of the training programs had been sufficiently covered in FGDs, their thoughts were as follows:

In order for participants to "switch over to online learning," additional professional development training for online education and blended learning should be made available, if they prerequisite to and provide education proficiencies online. More precisely, the participants desired knowledge by online teaching best practices or strategies based on research. During an interview, a participant inquired, "What do the findings of the research imply about the qualities of effective online instruction? How can participation in online learning be increased? That is the first thing that comes to brain." One more participant asserted: "Required preparing and groundwork for the next semester tracks should be executed." And the following comment said, it has also been proven that it is necessary to provide the Department of Education Technology.

4.2.1.8 Mean scores of items measuring the distance education infrastructure

Table (4.22a): Mean scores of items measuring the distance education infrastructure

The distance education infrastructure items	Mean	SD	WM	t	P-value	Rank
1. Infrastructure sufficient to meet the needs of distance education in emergency situations?	2.45	0.83	49.00	-2.979	0.008	6
2. The inadequacy of modern electronic devices to implement distance education®	3.85	0.59	77.00	6.474	0.000*	2

Table (4.22b): Mean scores of items measuring the distance education infrastructure

The distance education infrastructure items	Mean	SD	WM	t	P-value	Rank
3. Weak technological infrastructure necessary for the implementation of distance education®	2.00	0.56	40.00	-7.958	0.000*	9
4. Various sources of electrical energy are available at the university	4.15	0.37	83.00	14.038	0.000*	1
5. There are different sources of electrical energy in the home	3.25	1.16	65.00	0.960	0.349	5
6. Obsolete technological devices and equipment®	3.60	0.64	72.00	5.252	0.000*	4
7. There is a national educational platform for the benefit of all educational institutions with all their affiliates.	2.30	0.92	46.00	-3.390	0.003	7
8. Difficulty in dealing with educational and educational (commercial) platforms with their different environments and tools.®	2.25	0.55	45.00	-6.097	0.000*	8
9. The technical support team is able to solve the technical problems that students face	3.70	0.57	74.00	5.480	0.000*	3
Total	3.06	0.69	61.22	0.717	0.482	

* The mean difference is significant at the 0.05 level.

Table (4.22) summarized the distribution of the study applicants according to their replies about D3: Distance education infrastructure. With using a one-sample t- test this table displays that the weighted mean for the overall insights around D3: Distance education infrastructure was 61.22%. Based on the outcomes, the highest item was (4) "Various sources of electrical energy are available at the university" with a weighted mean equal to 83%, researchers have also found out that electricity is a major issue that could hinder the effectiveness of e-learning programs. In a study (Dhawan, 2020) on the factors that influence the implementation of distance education in India country universities, the author explains that widespread power outages it has been challenging to adopt online learning in India because it disrupts the participants. In the same way, (Bringula et al., 2021) believe that the majority of administrations in the developing world resisted to improve electrical power connections hence that every single learner could experience as few disorders as possible, making electricity a major concern for e-learning implementation, confirming our findings. Similar to other studies such as those (Baroudi & Helder, 2021) & (Mahmood, 2020).

Followed by the item number (2) "The inadequacy of modern electronic devices to implement distance education "with a weighted mean equal 77%. While the lowest item number (3) " Weak technological infrastructure necessary for the implementation of distance education "with a weighted mean equal to 40%. This reflects due to a lack of appropriate tools designed to support distant learning, neither lecturers nor students can effectively communicate abroad in the conventional educational setting. Similar to our findings (Ahmad et al., 2022) conducted research on Sulaimani Campus and found that a lack of electronic devices in the classroom is one of the key factors affecting good learning in a classroom environment. According to (Carter et al., 2021), (Niemi & Kousa, 2020) and (Serhan, 2021), both faculty and students had difficulty acclimating to modern technology. access to the internet was one of the biggest issues, and there were numerous other technical issues as well. All of these difficulties are to be predicted due to the university's quick adoption of technology and faculty unfamiliarity with the new technologies. Additionally, faculty members need time to become familiar with the new teaching methods because implementing them in that short amount of time was challenging.

Followed by item was the number (8) "Difficulty in dealing with educational and educational (commercial) platforms with their different environments and tools" with a weighted mean equal 45%. Then followed by item was the number (7) "There is a national educational platform for the benefit of all educational institutions with all their affiliates." with a weighted mean equal to 46%. Refers to the absence of a comprehensive, collective educational platform for educational institutions and universities, which has the advantage of its presence that it gives easiness in educational transactions between students and lecturers. It served as the primary platform for actual-time lecture discussions by both students and lecturers. Additionally, several lecturers videoed their lectures in advance with the help of educational technologists at institutions to ensure that students could access the material whenever it suited them. According to new research conducted by (Baroudi & Shaya, 2022) regarding the majority of participants (87%) stated that they had difficulty locating the appropriate online tools to evaluate students' learning because they were unfamiliar with the platforms and applications used by online educational institutions.

Regarding the lecturer's point of view about the question "What do you dislike the most about E-learning?" They express that as following:

Despite their best efforts, they rarely found the ideal technology to interest students, challenge them, and encourage involvement despite searching for online programs to conduct online training. In that regard, the lecturer stated, “I had trouble explaining the material to students who weren't accustomed to it in an unfamiliar manner.” Another participant said: “I had trouble teaching my students about new platforms, and I also had trouble setting up an online class because we weren't used to the many different technologies and platforms.”

Another lecturer mentioned, “The primary challenge or issue I encountered during COVID-19 was developing the internet-based activities and content, maintaining students' enthusiasm in the subject, and ensuring they submitted the required assignments.”

Followed by item was the number (1) "Infrastructure sufficient to meet the needs of distance education in emergency situations?" with a weighted mean equal to 49%. This outcome is also referred to the reality that online learning requires distance communication and computer competencies, which are competencies that faculty members have not trained in, which is why he created difficulties in understanding messages and instructions from the first time, and some faculty members are not trained to deal with computers and smart phones (Fidalgo et al., 2020).

4.2.1.9 Mean scores of items calculating the use of E-learning

Table (4.23a): Mean scores of items calculating the use of E-learning

the use of E-learning	Mean	SD	WM	t	P-value	Rank
1. I feel good about using distance education in light of this current crisis	2.90	1.33	58.00	-0.335	0.741	8
2. The university provides me with everything I need to communicate the scientific content of the curriculum through the university website	3.45	0.94	69.00	2.131	0.046	4
3. There is a strong interaction between the lecturer and the students through distance education.	2.35	0.99	47.00	-2.942	0.008	10
4. You can monitor students' performance remotely, guide and provide guidance.	2.65	0.99	53.00	-1.584	0.130	9

Table (4.23b): Mean scores of items calculating the use of E-learning

the use of E-learning	Mean	SD	WM	t	P-value	Rank
5. Allocate some practical applications that students must master in order to develop their applied skills	3.15	0.93	63.00	0.719	0.481	5
6. Multimedia is used during your explanation of the educational content through the distance education site.	3.70	0.86	74.00	3.621	0.002	2
7. Distance education helps present info in a range of layouts (video, PowerPoint, PDF, and Word).	4.10	0.72	82.00	6.850	0.000*	1
8. Students submit their assignments "electronically "on time	3.50	1.19	70.00	1.876	0.076	3
9. You can evaluate students well through distance education.	2.20	1.24	44.00	-2.886	0.009	11
10. Suggestions were made to the competent authorities to develop distance education to meet the current challenges	3.15	1.04	63.00	0.645	0.527	5
11. The process of evaluating assignments and tests for students is easy and convenient	3.10	1.21	62.00	0.370	0.716	7
12. I believe that the process of evaluating students through distance education is a fair process and reflects the true level of students.	1.80	1.01	36.00	-5.339	0.000*	12
Total	3.00	0.63	60.08	0.030	0.977	

*The mean difference is significant at the 0.05 level.

Table (4.23) summarized the distribution of the study applicants according to their replies about D4: The use of E-learning. The table below shows the results of a one-sample t test, showing that the weighted mean for all insights about D4: The use of E-learning 60.08%. Based on the outcomes, the maximum item (7) "Distance education helps present info in a multiplicity of layouts (video, PowerPoint, PDF, and Word)." with a weighted mean 82%, followed by the item (6) " Multimedia is used during your explanation of the educational content through the distance education site" with a weighted mean equal 74%. This result is consistent with the studies done by (Chadwick and McLoughlin, 2020) reported that among other technologies, multimedia presentations and interactive modeling were most frequently used for practical tasks. This might be because they are tools that are more dependable for both teachers and students. The lecturers can edit, modify, and correct videos at any moment, and students can watch them at any time.

While the lowest item (12) "I believe that the process of evaluating students through distance education is a fair process and reflects the true level of students" with a weighted mean equal to 36%, we had a great time teaching online, but we had no influence over the academic progress of the students. All of the other teachers who teach in all subject areas have acknowledged the poor quality of the students' coursework. As a result, the main problem was the absence of continual student supervision.

Regarding the *"What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study?"* the participant said as the following:

"In the event that there are questions to participate for students, all students will participate in the answers and there is no appropriate and fair evaluation system for students".

Followed by item the number (9) "You can evaluate students well through distance education" with a weighted mean equal 44%. These outcomes are consistent with (Altawalbeh & Al-Ajlouni, 2022), as they stated it was challenging to monitor the attendance of learners, weak connectivity to the internet, and the fact that some students were unable to attend the lecture due to poverty were additional challenges. Because they are connected to the university registration department and secured by the university's technology internet organization, the teaching technologies are used for a variety of purposes, including exams and quizzes.

Concerning the lecturers and supervisors opinions about *"What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study?"* they expressed as the following:

"Differentiating between instructions and assigning tasks based on the needs and learning styles of their students was one area in which lecturers struggled". One participant mentioned, *"It was challenging for me to utilize the discussion boards on the internet to connect with students who were having difficulty learning or needed extra assistance, much alone to differentiate between the advancing in accordance with individuals' skills and limitations."* Because of this, the teachers who participated took it upon themselves to improve their technical proficiency by seeing film projects and participating online courses about using and implementing internet platforms.

4.2.1.10 Mean scores of items calculating the Student Readiness

Table (4.24): Mean scores of items calculating the Student Readiness

The Student Readiness	Mean	SD	WM	t	P-value	Rank
1. Students have ability to use different computer programs	3.71	0.86	74.20	3.621	0.002*	1
2. Have the ability to use online platforms efficiently	3.70	0.80	74.00	3.907	0.001*	2
3. Students have the ability to work collaboratively	3.30	0.98	66.00	1.371	0.186	5
4. Students have the skill of self-learning	2.85	1.04	57.00	-0.645	0.527	10
5. Students interact with lecturers on a regular basis	2.30	0.80	46.00	-3.907	0.001*	11
6. Ability to handle electronic courses	3.15	0.99	63.00	0.679	0.505	7
7. Students have the possibility to use the university's electronic platform effectively	3.30	1.13	66.00	1.189	0.249	5
8. The ability to actively participate in the transformation from a recipient to a partner in knowledge.	3.00	1.12	60.00	0.000*	1.000	9
9. Possesses the ability to use different learning websites and resources.	3.50	1.00	70.00	2.236	0.038*	4
10. Ability to switch between blended learning methods and techniques	3.10	1.07	62.00	0.418	0.681	8
11. The university's E-learning system is easy to use	3.55	1.10	71.00	2.238	0.037*	3
Total	3.22	0.80	64.45	1.252	0.226	

*The mean difference is significant at the 0.05 level.

Table (4.24) summarized the distribution of the study applicants according to their replies about D5: Student readiness. With using a one- sample t- test this table shows that the weighted mean for the overall insights about D5: Student readiness 64.45%. Based on the outcomes, the highest item (1) "Students have ability to use different computer programs" with a weighted mean equal to 74.2%, this may be because each person's experience is unique and depends on a variety of characteristics, including age, the capacity to acquire novel technologies, knowledge with technology, and a desire in technology. Because of the varying expectations, experiences, and abilities of each student, adequate preparation and ongoing support are required to assist the students. Teachers can help students collaborate more intelligently by adopting strategies to encourage this variety. (Altowairik, 2021).

Followed by item (2) " Have ability to use online platforms efficiently "with a weighted mean equal to 74%. This result is attributed to the faculty participants sending the students lessons that achieve part of the courses, as the university does not have pre-prepared software and computerized lessons to be used in emergency situations and there are lessons that don't always feature interactive exercises, making the students the only audience and preventing them from participating in e-learning.

FGDs provided answers to the queries pertaining to the qualitative aspect of this area: "To what extent do students possess the knowledge and electronic capabilities necessary for remote e-learning", the participants responded in addition to its relevance to the e-learning system:

"Every department should have an instructional technology division that collaborates with the curriculum department to give access to a variety of internet-based resources, offer professional development in the areas of best practices and tech integration, and to be able to assist their lecturers and students in an emergency period".

While the lowest item (5) "Students interact with lecturers on a regular basis "with a weighted mean equal to 46%, The outcomes of this question point out that the field of learners' interaction with e-learning considering that Corona expanded to a medium extent and that some e-learning activities only saw average to weak interactions between them. This consequence is due to the reality that the students were not familiar with e-learning, as the Corona pandemic imposed on them e-learning suddenly and without prior training activities. This is consistent with a study by (Bettinger et al. 2017) demonstrates that, in some respects, online learning may not compete with other types of learning, such as the interactive knowledge-building that occurs between students and teachers. These results are also consistent with a study by (Helland et al., 2022) also supports this conclusion, as approximately 22.9% of students stated that teachers should better utilize interactive learning opportunities in digital education.

Regarding the lecturer's point of view about the "*How can the obstacles to the application of distance education be reduced?*" they express that as following:

“I asked my students to work independently and in small groups to keep their interest in the course high. This helped them see online learning as similar to traditional education and made them more committed to their education”.

Another participant stated, “In order to ensure that students are able to interact with the learning material & have right of entry to it at any interval, teachers must receive sufficient training in selecting the appropriate software”.

Followed by item was the number (4) "Students have the skill of self-learning "with a weighted mean equal 57%. This result is due to the lecturers relying on sending scientific files and papers related to the curriculum and encouraging the student to study the instructional materials, which lessens the requirement for the students to ask inquiries and make queries when using e-learning. This result is steady with (Cheng et al., 2021) who reported only 41.44% of students were satisfied with the outcomes from self-learning using the corona virus online educational mode.

4.2.1.11 Mean scores of items calculating the obstacles

Table (4.25a): Mean scores of items calculating the obstacles

The obstacles ®	Mean	SD	WM	t	P-value	Rank
1. Online exams do not show the real level of students.	4.50	0.61	90.00	11.052	0.000*	7
2. Inability to distinguish students from each other	4.41	0.60	88.20	10.466	0.000*	10
3. There was no real control over students' performance through E-learning.	4.42	0.50	88.40	12.457	0.000*	9
4. The spread of cheating in remote electronic exams	4.81	0.41	96.20	19.615	0.000*	1
5. Some lecturers do not have sufficient experience in preparing various electronic exams.	4.40	0.50	88.00	12.457	0.000*	11
6. Students' answers to tests and exams are very similar among students.	4.55	0.51	91.00	13.581	0.000*	5
7. Some students face difficulties in dealing with electronic programs.	3.65	0.81	73.00	3.577	0.002*	18
8. It is difficult for the teacher to follow up on all students because some of them boycotted distance education.	4.00	0.79	80.00	5.627	0.000*	15
9. Some topics need interactive methods and explanations with students.	4.45	0.51	89.00	12.704	0.000*	8
10. Spending a lot of time in front of the computer answering student inquiries	4.40	0.50	88.00	12.457	0.000*	11

The obstacles ®	Mean	SD	WM	t	P-value	Rank
11.Existing student assessment tools do not consider distance education.	3.95	0.76	79.00	5.596	0.000*	16
12.Lack of students' motivation for distance learning.	4.21	0.52	84.20	10.258	0.000*	13
13.Lack of pre-made self-learning materials for emergencies.	4.20	0.62	84.00	8.718	0.000*	14
14.Poor ability to raise and deliver required activities and duties.	3.90	0.85	78.00	4.723	0.000*	17
15.Some courses are difficult to teach remotely to students	4.65	0.49	93.00	15.079	0.000*	3
16.The practical application of some skills is missing through distance E-learning	4.80	0.41	96.00	19.615	0.000*	2
17.It is difficult for students to acquire practical and technical skills through teaching at a distance	4.60	0.60	92.00	11.961	0.000*	4
18.Lecturers find it difficult to communicate information to students in purely practical courses through distance education	4.55	0.76	91.00	9.131	0.000*	5
Total	4.36	0.33	87.11	18.503	0.000*	

Table (4.25b): Mean scores of items calculating the obstacles

*The mean difference is significant at the 0.05 level.

Table (4.25) summarized the distribution of the study applicants according to their replies to D6: Obstacles ®. Using a one-sample t- test this table shows that the weighted mean for the overall insights around D6: Obstacles ® 87.11%. Based on the outcomes, the maximum item was the number (4) " The spread of cheating in remote electronic exams" with a weighted mean equal to 96.2%, which is attributed to the challenge of ensuring that students are not cheating throughout online assessments and of monitoring how lecturers are taking it as they have to change the assessment types to fit online mode, as reported in the study of (Kearns, 2012). Additionally, similar to other studies (Raaheim et al., 2018) as stated applying assessments online on those courses designed for face-to-face learning is a challenging task. Both faculty and students are unsure of how to handle outstanding assignments, projects, and other continuous assessments. Furthermore, 58.8% of students expressed concern regarding the online exam results due to students' potential dishonesty (Amir et al., 2020). This result is due to the weak interaction of faculty members with evaluation activities, as faculty members do not have specified programs to regulate students' application of exams, for example.

Regarding the “*What do you dislike the most about E-learning?*” the participants responded as the following:

“Using illegal methods by some students to provide cheating options in exams and electronic answers as copy and pasting unblocking programs”. An additional participant said: *“Acceptance by students of their dependence on others for electronic exam answers”*.

Item number (16) " The practical application of some skills is missing through distance E-learning "with a weighted mean equal to 96%. The findings showed that the methods used to facilitate practical activities online differed significantly from one another and that the closure of the university had a negative impact on the facilitation of practical work. This is congruent with (Huber & Helm, 2020) who reported faculty members' interest in the theoretical aspect rather than the practical aspect applied, this is due to the belief of some faculty members that students should stay in their homes and not conduct procedures. The practical aspect is only after they return to the university's dental laboratories and clinics. Additionally, in accordance with the findings of (Yilmaz et al., 2020).according to academics, remoteness teaching can be utilized in selected courses or courses' theoretical components, but it won't work in the practical ones. A study by (Alqahtani et al., 2021) showed that more than half of respondents thought that online learning was much or somewhat less effective in balancing practical and theoretical experience, which is in consistent with our findings.

Concerning, the discussions about “*What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study*”, their opinions were as the following:

“The practical aspect is not clear and needs to participate in the clarification with the lecturers and supervisors”

While the lowest item (7) "Some students face difficulties in dealing with electronic programs" with a weighted mean equal to 73%, This result reflects the good experience of students with the different electronic programs, but this finding is in contrast to the results of (Baloran, 2020), who reported that due to the fact that the students were not familiar to e-learning, as the Corona pandemic imposed on them e-learning suddenly and without prior

training some activities. As that the work on distance education by faculty members at universities came suddenly, which made them send focused and deep information, avoiding details, exercises, and assignments, which made the educational materials sometimes dry and boring for students.

Regarding the “*How can the obstacles to the application of distance education be reduced?*” the participants responded as the following:

“Lack of sufficient communication skills and the speed of electronic writing, especially in online exams. So, students’ needs developing technology-related skills and conduct educational courses for the use of specialized electronic software”. Another participant stated: *“Giving courses and preparing on programs, scientific research, and distance education considered obligatory to diminish the technical issues”.*

Followed by item was the number (14) “Poor ability to raise and deliver required activities and duties.” with a weighted mean equal to 78%. This reflects the attaching educational materials is limited due to the low levels of file uploading in Internet services. This is consistent with a study by (Gressman & Peck, 2020), the interaction of faculty members is governed by the constant accessibility of the Internet service, which is fragmentary support that prevents professors from interacting with students in the case of a service disruption or restricts their capacity to quickly react to inquiries from students concerning the educational materials.

Regarding the question “*According to your point of view, e-learning can be relied upon in all scientific courses?*” they express that:

One lecturer said, *“Students are not participating in the online activities or debates because they do not consider online education properly. As a result, lecturers thought that in-person instruction in a classroom setting would always prevail over online instruction.*

One of the participants stated: *“Students are less paid attention to learning when there is not much oversight at the house or an expectation of responsibility from the lecturer.”* One of the lecturers expressed: *“Regression in the student's scientific ability due to the remote evaluation's lack of seriousness and authenticity, whether in theoretical or practical courses”.*

In item number (5) “Some lecturers do not have sufficient experience in preparing various electronic exams” with a weighted mean equal to 88%. This reflects a lack of prior experience of lecturers that affects overall performance in online education mostly at the beginning of online teaching. This result matches up with a prior investigation by (Devica, 2015), which found that lecturers lack relevant experience, which makes them less self-assured about online education. Also, the result is consistent with a study by (Lee and Tsai, 2010) explained that, in light of teachers were more likely to be worried by the predicted difficulties of delivering lessons online than by a lack of expertise due to the fact that they had not created the essential online approaches.

4.2.1.12 Mean scores of items measuring the advantages of distance E-learning

Table (4.26a): Mean scores of items measuring the advantages of distance E-learning

the advantages of distance E-learning	Mean	SD	WM	t	P-value	Rank
1. It helps in employing modern technologies in teaching	3.75	1.07	75.00	3.135	0.005	5
2. Helps to update and develop distance-learning methods.	3.90	1.02	78.00	3.943	0.001	2
3. An advanced and important technical system to meet the challenges of the times	3.95	0.89	79.00	4.790	0.000*	1
4. Assists in employing modern teaching strategies	3.80	0.95	76.00	3.760	0.001	4
5. Helps achieve distance learning goals	3.50	1.15	70.00	1.949	0.066	9
6. It leads to the development of students' self-learning skills	3.70	1.13	74.00	2.774	0.012	6
7. This technology provides the student with an atmosphere of privacy.	3.45	1.05	69.00	1.917	0.070	10
8. Helps in acquiring new skills in the field of computer.	3.85	0.88	77.00	4.344	0.000*	3
9. E-learning gives the student a space of scientific freedom	3.55	1.15	71.00	2.146	0.045	7
10. It helps in exchanging experiences and information among students	3.55	1.15	71.00	2.146	0.045	7
11. Helps develop scientific thinking skills	3.30	1.08	66.00	1.241	0.230	11
12. E-learning helps provide programs that simulate reality	3.30	1.08	66.00	1.241	0.230	11
13. It increases the interaction between the teacher and the student.	3.15	1.04	63.00	0.645	0.527	14
14. It increases the student's enthusiasm for learning.	2.55	1.10	51.00	-1.831	0.083	17

Table (4.27b): Mean scores of items measuring the advantages of distance E-learning

the advantages of distance E-learning	Mean	SD	WM	t	P-value	Rank
15. Effective system in the educational process.	2.85	1.18	57.00	-0.567	0.577	15
16. Distance education contributes to saving time and effort for students.	3.25	1.16	65.00	0.960	0.349	13
17. Distance education contributes to saving time and effort for faculty members	2.65	1.42	53.00	-1.099	0.286	16
18. Distance education contributes to improving the quality of sciences for students.	2.25	1.16	45.00	-2.881	0.010	18
Total	3.35	0.90	67.00	1.748	0.097	

*The mean difference is significant at the 0.05 level.

Table (4.26) summarized the distribution of the study applicants according to their replies about D7: The advantages of distance E-learning. By using a one -sample t- test this table displays that the weighted mean for the whole insights about D7: The advantages of distance E-learning 67%. Based on the outcomes, the uppermost item (3) "An advanced and important technical system to meet the challenges of the times that having a weighted mean of 79%, The findings supported the idea that technological advancements increase employee productivity and enhance the workplace. However, the adoption of new technology and digital work systems significantly improves both the working environment and the productivity of human resources. These findings are in line with those of a study on Saudi Arabian university staff conducted by Abdulrahim & Mabrouk (2020), which showed that the technology process of work has a substantial impact on raising worker productivity by upgrading their skills. Also, the same response from the educators in another study (Francom et al., 2021) is that the technologies are improved in distance learning methods.

Followed by item number (2) " Helps to update and develop distance learning methods “with a weighted mean equal to 78%. The outcomes of this item are comparable to those of the study by (Basilaia, Kvavadze, 2020), that found that transitioning from classroom instruction to distance learning throughout the outbreak of the coronavirus epidemic in the state of Georgia was effective and that the system and skills gained by teachers, students, and school administration can be beneficial. In many situations in the post-pandemic time, such as individuals with special requests who require extra hours, by improving the efficacy of group instruction, by boosting student becoming independent, and by helping them learn new

skills. In contrast with the disadvantages that have been shown a study done by (Altawalbeh & Al-Ajlouni, 2022) stated, Following up with the students proved challenging due to issues with enrollment, poor internet connections, and the fact that some of the poorer students were unable to access the course of study.

While the lowest item (18) "Distance education contributes to improving the quality of sciences for students" with a weighted mean equal to 45%. Reflects the interaction of faculty members is governed by the internet service's ongoing availability, which is a discontinuous service that creates faculty members stop work together with students in the occurrence of a service disturbance or limits their capability to respond simply to learners' inquiries around the educational material. Attaching educational materials is limited due to the low levels of file uploading in Internet services.

Followed by item was the number (14) "It increases the student's enthusiasm for learning" with a weighted mean equal to 51%. According to the lecturers and students, every lesson was created and delivered in a unique way based on the preferences of the particular instructors and their level of readiness for ERL. According to (Schultz, 2020), the students encountered lectures that were either uninteresting or monotonous as an alternative of engaging as well as quality webinars.

4.2.1.13 Distribution of the study applicants around an investigated topic depending on their response

Table (4.28): Distribution of the study applicants around an investigated topic depending on their response

Studied domain	Mean	SD	WM	t	P-value	Rank
D1: Logistical support	3.67	0.34	73.40	8.797	0.000*	2
D2: Human preparation	3.63	0.83	72.60	2.308	0.032*	3
D3: Distance education infrastructure	3.06	0.69	61.22	0.717	0.482	6
D4: The use of E-learning	3.00	0.63	60.08	0.030	0.977	7
D5: Student readiness	3.22	0.80	64.45	1.252	0.226	5
D6: Obstacles ®	4.36	0.33	87.11	18.503	0.000*	1
D7: The advantages of distance E-learning	3.35	0.90	67.00	1.748	0.097	4
Total	3.47	0.65	69.40	4.77	0.000*	

*Significant at $P \leq 0.05$; $P > 0.05$: Not significant; ®: reverse domain; **WM**: weighted mean; **SD**: standard deviation & **t**: One sample t-test.

Table (4.27) summarized the distribution of the study applicants according to their replies around the impact of E-learning on the perspectives of students and lecturers in dental faculties within the Gaza Strip's Coronavirus outbreak. With the using of one-sample t -test this table displays that the weighted mean for the whole insights about the impact of E-learning on the perspectives of students and lecturers in dental faculties within the Gaza Strip's Coronavirus pandemic outbreak was 69.4%. Based on the outcomes, the highest domain was (6) "**D6: Obstacles** ®" with a weighted mean 87.11%, indicating that the participants reported a number of difficulties and problems, such as poor internet connections and unfamiliarity with new technologies and instructional methods. These results are in the line with other studies as (Abbasi et al., 2020), (Avunduk, 2021) & (Dost et al., 2020), in which evidence suggests that due to the abrupt and complete changeover during Coronavirus pandemic, both students and lecturers experienced a number of issues, including having no ability to readily adjust to technology, poor time management, an inadequate level of communication, or inadequate support services, which ultimately led to unhappiness with distance education.

Followed by the domain number (1) "**D1: Logistical support** "with a weighted mean equal to 73.4%. This indicates that integrating technological tools and resources with the purpose of promoting growth and improving training and education. This result corresponds to (Bakia et al., 2012), which is reported to be distinct e-learning primarily acquired popularity from teaching in person due to its adaptability when it comes to education delivery and resource access. Moreover, the majority of the research points out that students usually have favorable perceptions of distance education (Burac et al., 2019), (Lochner et al., 2016), despite the fact that students occasionally encountered technical difficulties and believed that conventional education improved the way they processed information (Alsaaty et al., 2016).

While the lowest domain was the number (4) "**D4: The use of E-learning** "with a weighted mean equal to 60.08%. Our analysis is consistent with earlier studies in terms of the drawbacks of distance education (Sadeghi, 2019), (Dhull, 2017) & (Nazarlou, 2013), where teachers lack the skills necessary to keep pupils engaged in this type of learning, and they also lack experience doing so, making it easy for students to become distracted and lose focus. Moreover, the amount of time that students are able to concentrate while they are learning online is also affected by environmental factors like noise from family or neighbors and a lack of adequate learning space.

4.2.1.14 The gender-related researched domains' mean difference

Table (4.29): The gender-related researched domains' mean difference

Domain	Gender	N	Mean	SD	t	P-value
D1: Logistical support	Male	16	3.69	0.34	0.483	0.635
	Female	4	3.59	0.36		
D2: Human preparation	Male	16	3.78	0.47	0.365	0.720
	Female	4	3.45	0.55		
D3: Distance education infrastructure	Male	16	3.01	0.37	-1.080	0.295
	Female	4	3.22	0.20		
D4: The use of E-learning	Male	16	2.96	0.62	-0.569	0.576
	Female	4	3.17	0.73		
D5: Student readiness	Male	16	3.28	0.71	0.680	0.505
	Female	4	2.98	1.17		
D6: Obstacles ®	Male	16	4.36	0.32	0.240	0.813
	Female	4	4.32	0.42		
D7: The advantages of distance E-learning	Male	16	3.47	0.87	1.162	0.261
	Female	4	2.89	0.97		
Total	Male	16	3.42	0.40	0.489	0.631
	Female	4	3.77	0.58		

* $P \leq 0.05$: Significant, $P > 0.05$: Not significant; ®: reverse domain; **N**: number of the subjects; **SD**: standard deviation; & **t**: independent t-test.

Table (4.28) displayed the gender-related researched domains' average difference. The outcomes showed that there is no statistical significance difference between females and males in an average D1: logistical support, D2: Human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6 Obstacles, D7: the advantages of distance E-learning and domain as a total ($P > 0.05$). The previous results can be explained that both parties are aware of the importance of using education and distance learning according to the education and e-learning strategy because it reduces time and effort and develops learners' self-learning skills. We can return this result to the fact that virtual education and distance learning environments - based on the strategy of teaching and e-learning and/or teaching and online learning and/or education and mobile learning - are non-biased, because it takes into account the difference of sex, and does not tend to one type at the expense of the other; This is a natural result because these strategies/systems/platforms are designed on a scientific and objective basis regardless of the medium or environment in which you work or the person you use and deal with. As well as for the possibility of use at the simple and advanced levels. However, Turkyilmaz et al. (2019) found no difference in the use of digital tools among male and female students in previous research.

4.2.1.15 Age-related mean differences of the researched domains

Table (4.30): Age-related mean differences of the researched domains

Domains	Age	N	Mean	SD	t	P-value
D1: Logistical support	40 years or less	9	3.68	0.29	0.137	0.893
	More than 40	11	3.66	0.39		
D2: Human preparation	40 years or less	9	3.78	0.44	0.173	0.865
	More than 40	11	3.44	0.51		
D3: Distance education infrastructure	40 years or less	9	3.09	0.37	0.352	0.729
	More than 40	11	3.03	0.34		
D4: The use of E-learning	40 years or less	9	3.14	0.70	0.864	0.399
	More than 40	11	2.89	0.57		
D5: Student readiness	40 years or less	9	3.32	0.96	0.501	0.623
	More than 40	11	3.14	0.67		
D6: Obstacles ®	40 years or less	9	4.27	0.35	-1.039	0.313
	More than 40	11	4.42	0.31		
D7: The advantages of distance E-learning	40 years or less	9	3.27	0.93	-0.373	0.713
	More than 40	11	3.42	0.91		
Total	40 years or less	9	3.35	0.47	0.364	0.720
	More than 40	11	3.54	0.41		

* $P \leq 0.05$: Significant, $P > 0.05$: Not significant; ®: reverse domain; **N**: number of the subjects; **SD**: standard deviation; & **t**: independent t-test.

Table (4.29) presented the difference in the mean of studied domains linked to age groups. The results demonstrated that no statistically significant difference exists between those aged 40 years or less and 40 years and more in the average of D1: logistical support, D2: Human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6 Obstacles, D7: the advantages of distance E-learning and domains as an overall ($P > 0.05$).

4.2.1.16 Mean difference of research domains related to their Governorate

Table (4.31): Mean difference of research domains related to their Governorate

Domains	Governorate	N	Mean	SD	F	P-value
D1: Logistical support	Gaza	13	3.61	0.33	0.514	0.678
	North Gaza	2	3.75	0.53		
	Middle zone	3	3.88	0.43		
	Khan Younes	2	3.69	0.09		
	Total	20	3.67	0.34		
D2: Human preparation	Gaza	13	3.66	0.38	1.445	0.267
	North Gaza	2	3.50	0.10		
	Middle zone	3	3.10	0.84		
	Khan Younes	2	3.14	0.40		
	Total	20	2.76	0.47		
D3: Distance education infrastructure	Gaza	13	3.02	0.33	2.830	0.072
	North Gaza	2	3.61	0.08		
	Middle zone	3	3.04	0.28		
	Khan Younes	2	2.78	-		
	Total	20	3.06	0.35		
D4: The use of E-learning	Gaza	13	2.81	0.43	3.231	0.050
	North Gaza	2	4.00	1.06		
	Middle zone	3	3.31	0.75		
	Khan Younes	2	2.83	0.35		
	Total	20	3.00	0.63		
D5: Student readiness	Gaza	13	3.12	0.85	1.583	0.233
	North Gaza	2	4.32	0.45		
	Middle zone	3	3.15	0.38		
	Khan Younes	2	2.91	0.39		
	Total	20	3.22	0.80		
D6: Obstacles ®	Gaza	13	4.46	0.33	1.438	0.269
	North Gaza	2	4.19	0.12		
	Middle zone	3	4.19	0.27		
	Khan Younes	2	4.08	0.35		
	Total	20	4.36	0.33		
D7: The advantages of distance E-learning	Gaza	13	3.06	0.94	2.121	0.138
	North Gaza	2	4.53	0.51		
	Middle zone	3	3.63	0.03		
	Khan Younes	2	3.67	0.31		
	Total	20	3.35	0.90		
Total	Gaza	13	3.72	0.41	2.672	0.082
	North Gaza	2	3.49	0.40		
	Middle zone	3	3.05	0.23		
	Khan Younes	2	2.93	0.08		
	Total	20	2.87	0.43		

* $P \leq 0.05$: Significant, $P > 0.05$: Not significant; ®: reverse domain; **N**: number of the subjects; **SD**: standard deviation & **F**: one-way ANOVA.

The mean difference of studied domains linked to governorate is pointed out in table (4.30). According to the results of the one-way ANOVA test, there is no statistically significant difference between governorates in the mean of the studied domains as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and the domain as a whole ($P > 0.05$).

4.2.1.17 Mean difference between research areas related to the university

Table (4.32): Mean difference between research areas related to the university

Domains	University	N	Mean	SD	t	P-value
D1: Logistical support	Palestine	12	3.67	0.25	-0.033	0.974
	Al-Azhar	8	3.67	0.46		
D2: Human preparation	Palestine	12	3.55	0.45	0.461	0.650
	Al-Azhar	8	3.75	0.53		
D3: Distance education infrastructure	Palestine	12	2.96	0.27	-1.511	0.148
	Al-Azhar	8	3.19	0.42		
D4: The use of E-learning	Palestine	12	2.76	0.36	-2.421	0.026
	Al-Azhar	8	3.38	0.77		
D5: Student readiness	Palestine	12	3.15	0.69	-0.480	0.637
	Al-Azhar	8	3.33	0.97		
D6: Obstacles ®	Palestine	12	4.34	0.33	-0.211	0.835
	Al-Azhar	8	4.38	0.35		
D7: The advantages of distance E-learning	Palestine	12	3.29	0.73	-0.376	0.711
	Al-Azhar	8	3.44	1.15		
Total	Palestine	12	3.24	0.30	-0.799	0.435
	Al-Azhar	8	3.66	0.57		

* The mean difference is significant at the 0.05 level.

Table (4.31) displayed the mean difference of studied domains related to the university. The results showed that the average of D4: the use of E-learning in Palestine university is low statistically significant compared to Al-Azhar ($P < 0.05$). While according to the table, there is not a statistically significant difference between Palestine and Al-Azhar university in others studied domains such as D1: logistical support, D2: Human preparation, D3: distance education infrastructure and D5: Student readiness, D6: Obstacles, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.18 The mean difference between their qualification-related study domains

Table (4.33): The mean difference between their qualification-related study domains

Domains	Qualification	N	Mean	SD	F	P-value
D1: Logistical support	Master degree	11	3.65	0.38	0.095	2.670
	PhD degree	6	3.67	0.30		
	Board degree	3	3.75	0.38		
	Total	20	3.67	0.34		
D2: Human preparation	Master degree	11	3.74	0.46	0.481	0.637
	PhD degree	6	2.95	0.56		
	Board degree	3	3.43	0.22		
	Total	20	2.76	0.47		
D3: Distance education infrastructure	Master degree	11	2.91	0.35	0.378	0.717
	PhD degree	6	3.15	0.22		
	Board degree	3	3.41	0.28		
	Total	20	3.06	0.35		
D4: The use of E-learning	Master degree	11	3.07	0.48	0.213	0.832
	Ph. degree	6	2.82	0.42		
	Board degree	3	3.14	1.41		
	Total	20	3.00	0.63		
D5: Student readiness	Master degree	11	3.02	0.61	0.513	0.856
	PhD degree	6	3.36	1.06		
	Board degree	3	3.70	0.84		
	Total	20	3.22	0.80		
D6: Obstacles ®	Master degree	11	4.32	0.36	0.312	0.384
	PhD degree	6	4.47	0.31		
	Board degree	3	4.24	0.27		
	Total	20	4.36	0.33		
D7: The advantages of distance E-learning	Master degree	11	3.34	0.87	0.663	0.632
	PhD degree	6	3.01	0.93		
	Board degree	3	4.06	0.75		
	Total	20	3.35	0.90		
Total	Master degree	11	2.84	0.40	0.613	0.496
	PhD degree	6	3.79	0.44		
	Board degree	3	3.14	0.54		
	Total	20	2.87	0.43		

* $P \leq 0.05$: Significant, $P > 0.05$: Not significant; ®: reverse domain; **N**: number of the subjects; **SD**: standard deviation & **F**: one-way ANOVA.

Table (4.32): displayed the mean difference of studied domains interrelated to the qualification. According to the results of the one-way ANOVA test, there is no statistically significant difference between qualification rank and the average of the research domains as D1: logistical support, D2: human equipment, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.19 The mean difference between the subjects they studied for their professional certifications

Table (4.34a): The mean difference between the subjects they studied for their professional certifications

Domains	Professional Certificates	N	Mean	SD	F	P-value
D1: Logistical support	Orthodontist	3	3.71	0.07	1.285	0.335
	Endodontist	1	4.13	-		
	Fixed Prosthodontist	2	3.56	0.27		
	Oral and Maxillofacial Surgeon	3	3.75	0.33		
	Conservative dentistry specialist	1	4.13	-		
	Removable Prosthodontist	2	3.94	0.27		
	Periodontist	3	3.42	0.07		
	others	5	3.50	0.47		
	Total	20	3.67	0.34		
D2: Human preparation	Orthodontist	3	2.57	0.25	1.888	0.159
	Endodontist	1	3.43	-		
	Fixed Prosthodontist	2	2.43	0.40		
	Oral and Maxillofacial Surgeon	3	3.05	0.36		
	Conservative dentistry specialist	1	3.71	-		
	Removable Prosthodontist	2	2.71	0.40		
	Periodontist	3	2.48	0.30		
	others	5	2.69	0.53		
	Total	20	2.76	0.47		
D3: Distance education infrastructure	Orthodontist	3	3.11	0.33	1.249	0.350
	Endodontist	1	3.33	-		
	Fixed Prosthodontist	2	2.72	0.39		
	Oral and Maxillofacial Surgeon	3	3.04	0.34		
	Conservative dentistry specialist	1	3.00	-		
	Removable Prosthodontist	2	3.44	0.31		
	Periodontist	3	3.26	0.42		
	others	5	2.84	0.26		
	Total	20	3.06	0.35		
D4: The use of E-learning	Orthodontist	3	2.75	0.51	1.476	0.264
	Endodontist	1	4.08	-		
	Fixed Prosthodontist	2	3.04	0.53		
	Oral and Maxillofacial Surgeon	3	3.11	0.13		
	Conservative dentistry specialist	1	2.58	-		
	Removable Prosthodontist	2	3.54	1.71		
	Periodontist	3	3.31	0.10		
	others	5	2.55	0.25		
	Total	20	3.00	0.63		
D5: Student readiness	Orthodontist	3	3.12	0.10	2.379	0.090
	Endodontist	1	3.27	-		
	Fixed Prosthodontist	2	2.18	1.29		
	Oral and Maxillofacial Surgeon	3	3.67	0.29		
	Conservative dentistry specialist	1	3.45	-		
	Removable Prosthodontist	2	4.36	0.39		
	Periodontist	3	3.55	0.71		
	others	5	2.73	0.71		
	Total	20	3.22	0.80		

Table (4.33b): The mean difference between the subjects they studied for their professional certifications

Domains	Professional Certificates	N	Mean	SD	F	P-value
D6: Obstacles ®	Orthodontist	3	4.59	0.28	0.562	0.773
	Endodontist	1	4.06	-		
	Fixed Prosthodontist	2	4.53	0.59		
	Oral and Maxillofacial Surgeon	3	4.39	0.29		
	Conservative dentistry specialist	1	4.50	-		
	Removable Prosthodontist	2	4.19	0.12		
	Periodontist	3	4.17	0.15		
	others	5	4.33	0.45		
Total	20	4.36	0.33			
D7: The advantages of distance E-learning	Orthodontist	3	3.35	0.53	1.590	0.229
	Endodontist	1	3.67	-		
	Fixed Prosthodontist	2	2.56	1.49		
	Oral and Maxillofacial Surgeon	3	3.26	0.06		
	Conservative dentistry specialist	1	3.61	-		
	Removable Prosthodontist	2	4.56	0.47		
	Periodontist	3	3.57	0.61		
	others	5	2.99	1.25		
Total	20	3.35	0.90			

* The mean difference is significant at the 0.05 level.

Table (4.33) revealed the mean difference between the research domains that were the professional certificates. According to the results of the one-way ANOVA test, there is no statistically significant difference between professional certificates in the mean of the researched domains as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.20 Mean difference between related study domains to their academic rank

Table (4.35a): Mean difference between related study domains to their academic rank

Domains	Academic Rank	N	Mean	SD	F	P-value
D1: Logistical support	Instructor	12	3.69	0.39	0.130	0.879
	Assistant Professor	7	3.66	0.30		
	Associate Professor	1	3.50	-		
	Total	20	3.67	0.34		
D2: Human preparation	Instructor	12	3.71	0.44	0.140	0.870
	Assistant Professor	7	2.84	0.57		
	Associate Professor	1	3.71	-		
	Total	20	2.76	0.47		
D3: Distance education infrastructure	Instructor	12	2.97	0.40	1.226	0.318
	Assistant Professor	7	3.14	0.20		
	Associate Professor	1	3.44	-		
	Total	20	3.06	0.35		

Table (4.34b): Mean difference between related study domains to their academic rank

Domains	Academic Rank	N	Mean	SD	F	P-value
D4: The use of E-learning	Instructor	12	3.21	0.67	2.782	0.090
	Assistant Professor	7	2.60	0.34		
	Associate Professor	1	3.42	-		
	Total	20	3.00	0.63		
D5: Student readiness	Instructor	12	3.15	0.75	0.397	0.679
	Assistant Professor	7	3.25	0.95		
	Associate Professor	1	3.91	-		
	Total	20	3.22	0.80		
D6: Obstacles ®	Instructor	12	4.31	0.35	0.553	0.585
	Assistant Professor	7	4.46	0.32		
	Associate Professor	1	4.22	-		
	Total	20	4.36	0.33		
D7: The advantages of distance E-learning	Instructor	12	3.47	0.94	0.291	0.751
	Assistant Professor	7	3.20	0.91		
	Associate Professor	1	2.94	-		
	Total	20	3.35	0.90		
Total	Instructor	12	2.91	0.47	0.254	0.778
	Assistant Professor	7	2.78	0.39		
	Associate Professor	1	3.99	-		
	Total	20	2.87	0.43		

* The mean difference is significant at the 0.05 level.

Table (4.34) revealed the mean difference between the research domains that were academic rank. There was no statistically significant difference between academic rank in the mean of the studied domain, according to the one-way ANOVA test as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles®, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.21 Mean difference between their years of dental experience and the researched domains

Table (4.36a): Mean difference between their years of dental experience and the researched domains

Domains	Years of experience in dentistry	N	Mean	SD	F	P-value
D1: Logistical support	Less than 10	4	3.59	0.52	0.117	0.891
	10-15	13	3.69	0.32		
	More than 20	3	3.67	0.26		
	Total	20	3.67	0.34		
D2: Human preparation	Less than 10	4	4.50	0.38	0.940	0.410
	10-15	13	2.86	0.45		
	More than 20	3	2.67	0.68		
	Total	20	2.76	0.47		

Table (4.35b): Mean difference between their years of dental experience and the researched domains

Domains	Years of experience in dentistry	N	Mean	SD	F	P-value
D3: Distance education infrastructure	Less than 10	4	2.83	0.58	1.054	0.370
	10-15	13	3.12	0.27		
	More than 20	3	3.07	0.28		
	Total	20	3.06	0.35		
D4: The use of E-learning	Less than 10	4	3.35	1.07	1.082	0.361
	10-15	13	2.86	0.51		
	More than 20	3	3.17	0.14		
	Total	20	3.00	0.63		
D5: Student readiness	Less than 10	4	3.20	1.12	0.016	0.984
	10-15	13	3.21	0.79		
	More than 20	3	3.30	0.64		
	Total	20	3.22	0.80		
D6: Obstacles ®	Less than 10	4	4.35	0.34	0.528	0.599
	10-15	13	4.32	0.31		
	More than 20	3	4.54	0.47		
	Total	20	4.36	0.33		
D7: The advantages of distance E-learning	Less than 10	4	3.24	1.62	0.100	0.905
	10-15	13	3.42	0.75		
	More than 20	3	3.20	0.42		
	Total	20	3.35	0.90		
Total	Less than 10	4	3.84	0.83	0.032	0.968
	10-15	13	3.89	0.33		
	More than 20	3	2.83	0.20		
	Total	20	2.87	0.43		

Table (4.35) displayed the mean difference between the studied domains in relation to experience years in dentistry. The one-way ANOVA test revealed that, in the mean of the research domain, there is no statistically significant difference in years of experience in dentistry as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D6: Obstacles, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.22 Mean difference of researches domains interrelated to their academic years of experience

Table (4.37): Mean difference of researches domains interrelated to their academic years of experience

Domain	Academic years of experience	N	Mean	SD	F	P-value
D1: Logistical support	Less than 8	7	3.55	0.39	0.767	0.480
	8-10	8	3.69	0.35		
	More than 10	5	3.80	0.23		
	Total	20	3.67	0.34		
D2: Human preparation	Less than 8	7	3.67	0.58	0.275	0.763
	8-10	8	2.75	0.46		
	More than 10	5	3.89	0.37		
	Total	20	2.76	0.47		
D3: Distance education infrastructure	Less than 8	7	2.98	0.35	0.765	0.481
	8-10	8	3.01	0.42		
	More than 10	5	3.22	0.18		
	Total	20	3.06	0.35		
D4: The use of E-learning	Less than 8	7	2.75	0.67	1.229	0.317
	8-10	8	3.25	0.67		
	More than 10	5	2.97	0.42		
	Total	20	3.00	0.63		
D5: Student readiness	Less than 8	7	2.68	0.80	3.139	0.069
	8-10	8	3.55	0.57		
	More than 10	5	3.47	0.81		
	Total	20	3.22	0.80		
D6: Obstacles ®	Less than 8	7	4.37	0.42	2.333	0.127
	8-10	8	4.20	0.15		
	More than 10	5	4.58	0.31		
	Total	20	4.36	0.33		
D7: The advantages of distance E-learning	Less than 8	7	2.97	1.19	1.046	0.373
	8-10	8	3.63	0.68		
	More than 10	5	3.44	0.66		
	Total	20	3.35	0.90		
Total	Less than 8	7	3.65	0.57	1.693	0.214
	8-10	8	3.04	0.33		
	More than 10	5	3.91	0.20		
	Total	20	3.87	0.43		

Table (4.36) displayed the mean difference between the researched domains in relation to the years of academic experience. The one-way ANOVA test revealed that the mean of the studied domain does not statistically differ by academic years of experience as D1: logistical support, D2: human preparation, D3: distance education infrastructure, D4: the use of

E-learning, D5: Student readiness, D6: Obstacles, D7: the advantages of distance E-learning and domains as a whole ($P > 0.05$).

4.2.1.23 Mean difference between the examined domains and participant types

Table (4.38): Mean difference between the examined domains and participant types

Domain	The type of participants	N	Mean	SD	t	P-value
D1: Logistical support	Lecturer	20	3.67	0.34	0.957	0.339
	Students	300	3.59	0.34		
D2: Human preparation	Lecturer	20	3.63	0.83	-0.370	0.523
	Students	300	3.38	0.88		
D3: Distance education infrastructure	Lecturer	20	3.06	0.69	1.513	0.131
	Students	300	3.24	0.93		
D4: The use of E-learning	Lecturer	20	3.00	0.63	-0.209	0.834
	Students	300	3.03	0.58		
D5: Student readiness	Lecturer	20	3.22	0.80	-0.602	0.548
	Students	300	3.31	0.64		
D6: Obstacles ®	Lecturer	20	4.36	0.33	3.676	0.000*
	Students	300	3.92	0.52		
D7: The advantages of distance E-learning	Lecturer	20	3.35	0.90	-0.291	0.771
	Students	300	3.40	0.70		
Total	Lecturer	20	3.47	0.65	-1.053	0.873
	Students	300	3.41	0.66		

* The mean difference is significant at the 0.05 level.

Table (4.37) displayed the mean difference between researched domains in relation to the participants' type. The results showed that the lecturers have a higher statistically significant average of obstacles compared to students ($P \leq 0.05$). Despite the fact that there is not a statistically significant difference between lecturers and students in an average of D1: logistical support, D2: Human preparation, D3: distance education infrastructure, D4: the use of E-learning, D5: Student readiness, D7: the advantages of distance E-learning and domain as a total ($P > 0.05$).

4.3 Discussion

The findings of this investigation, which was conducted in the country of Palestine and featured a one-of-a-kind scenario in which numerous individuals are experiencing a time of emergency, may inspire Middle Eastern decision makers, particularly in nations such as also dealing with the COVID-19 crisis, unstable and unnatural situations. In this case study,

an especially difficult scenario for delivering quality education in the current conditions due to the combination of the usual social stress and pandemic restrictions.

Everyone involved in the educational process, from the teaching staff to the students and their families, experienced significant shock and discomfort as a result of the switch from in-person learning to online learning. The shock that the COVID-19 pandemic caused in higher education institutions by the quick transition to online learning in many countries (Affouneh et al. 2020), (Almaiah et al. 2020) & (Gürler et al. 2020). We were forced to educate without the use of untraditional resources on very short notice, which left us with few options. However, Students lacked the tools necessary to function well in unusual situations, for example, learning via the internet, and conditions were not the same in all nations (Jung, 2014) & (Pedró, 2020). Emergency distance education is not totally online, but it still necessitates more time management and self-control than in-person instruction because there is less physical interaction and more computer-based activities (Ramírez and Rodríguez 2020).

The current data showed that the COVID-19 pandemic lockdown affected the academic performance of most participants to varying degrees and only a small percentage of participants reported that the pandemic had no effect on their academic performance. This is in agreement with previous studies, which reported that the COVID-19 pandemic has had a profound impact on medical, dental, and veterinary students (Iyer et al., 2020; Mahdy, 2020; Rose, 2020).

The only remaining option was to be innovative in a distance learning setting when multidisciplinary techniques and clinical settings were abandoned and learning as we know it was interrupted.

Educating medical skills in practice has become the greatest difficulty as online learning is still widely regarded as primitive and its practical implementation is unclear. While maintaining the primary benefit of studying via the internet during the corona virus outbreak is the learning process without breaching social distance, it is a costly learning mode that requires technology, facilities, and equipment (Khalaf et al., 2020). The internet system, teachers' and students' laptops, and using these digital equipment' technology are all part of the equipment and facilities needed for learning. The country's socioeconomic conditions, dental school budgets, and dental students' financial capacity, as well as other factors like

teachers' and students' motivations, may all have an impact on these factors (Singal et al., 2021),(Brumini et al., 2014).

This pandemic's potential effects on higher education have received little attention. According to one study, confinement to COVID-19 may boost students' academic achievement (OECD, 2022). The researcher came to the conclusion that the quarantine changed students' learning tactics to a routine that was more effective and productive and involved them more. In opposition to their results, almost all of our students reported lower levels of engagement with distant learning and a sense of missing out on crucial educational opportunities, notably practical classes.

This could be because the previous study was about basic science education, whereas dentistry requires extensive clinical experience and practice. One comparative survey administered to professional dental students indicated that students experienced increased levels of stress and stated that clinical education suffered from the pandemic (Garcia et al., 2022). This new approach to education is not without its challenges, and it absolutely is not suitable for all courses. Additionally, According to our participants, conservative dentistry was most impacted as a subspecialty. This may be because of their more than adequate clinical openness in the past scholastic year bringing about a higher feeling of certainty and skill. One study that conducted Students' clinical exposure was, in fact, the most crucial component influencing their preparedness, according to group conversations with them. This was done in order to comprehend the factors that contribute to a confident graduation (Hattar et al., 2021).

In an emergency or not, it will be easier to continue providing online classes to learners if higher education institutions have a better understanding of the aspects that influence the use of online learning in an emergency time. There was not enough time for lecturers who were to learn and/or create efficient online pedagogical strategies, one must be inexperienced with online teaching. Numerous teachers had a little degree of solace whereas progressing to internet education (Birch and Lewis, 2020), (Huang et al., 2020) & (Tang, 2020). Learners and instructors alike wish become widely accustomed to the online situation following this transition. They might prepared to utilize open instructive assets (OERs) and this will improve the probability of their utilization later on (Racero et al., 2020). OERs should be used even after the pandemic is over because they are useful tools that can enhance online, hybrid, or in-person learning. Teachers can utilize their imagination to customize education,

produce the substance further important, or adjust it to the nearby setting or explicit students' wants (Ruipérez-Valiente et al., 2020).

According to epidemiology specialists, the coronavirus pandemic's second and third waves are predictable. Throughout history, numerous outbreaks of viruses and illnesses have been fought by humans. There will be another pandemic in the future, even after this COVID-19 pandemic. As dental professionals and instructors, we should make a framework to handle what is happening. Much effort needs to be done, such as building online allocutions, developing virtual reality gadgets for virtual instruction online and creating an online test system, making assessments online, and creating the pandemic situation's requirements for dental education will be a key factor in determining future requirement.

Chapter Five

Conclusion and Recommendations

5.1 Conclusion

Taking into consideration the deadly COVID-19 and in its endeavor to avoid its spread governments worldwide have put in place stringent measures such as national lockdowns and social distancing initiatives. Because of these restrictions, many higher education institutions and universities have chosen online education to stop the spread of the Coronavirus. All of the participants said that even though doing remote instruction and learning in an emergency, they experienced digital inequality, it increased their strain and anxiety due to the fact that they were unsure of when a crisis state would occur would end and they would return to normal learning. The current study's participants agreed that the corona virus outbreak had varying degrees of an effect on dental learning. According to the student's answers, the future of dentistry education will be characterized by the integration of physical and online learning. On the other hand, dental education practical courses must continue to be based on real-world experiences, particularly the residency option, that supports learners comprehend practice scenarios. As a result, dental schools need to develop their skills now in order to react to the corona virus emergency situation and subsequent crises, along with to the requirements of forthcoming dental teaching. Last but not least, meeting the standard for dental education necessitates high-quality education.

5.2 Recommendations

In light of the results of the study, we can make the following recommendations and suggestions:

- Improving the e-learning infrastructure and equipping the necessary resources and supplies, so that all educational options are available in the event of crises to prevent work stoppage in all areas of higher educational institutions in Palestine.
- Training the academic staff and students on the university's e-learning platforms. This is in addition to motivating them to produce learning materials with the scientific content of high quality and efficiency to be uploaded to this platform.

- Stimulating the national human cadres who are specialized in the field of information and communication technology to actively participate in enriching scientific research in this vital field.
- The establishment of educational and digital learning resource centers in institutions, and various educational, and providing all the needs of its educational cadres, including hardware, software, and teaching and learning materials, to move towards development, creativity, and innovation.
- Further study to measure the output of e-learning after the COVID-19 pandemic offered and how it affects the standard of dental services given.

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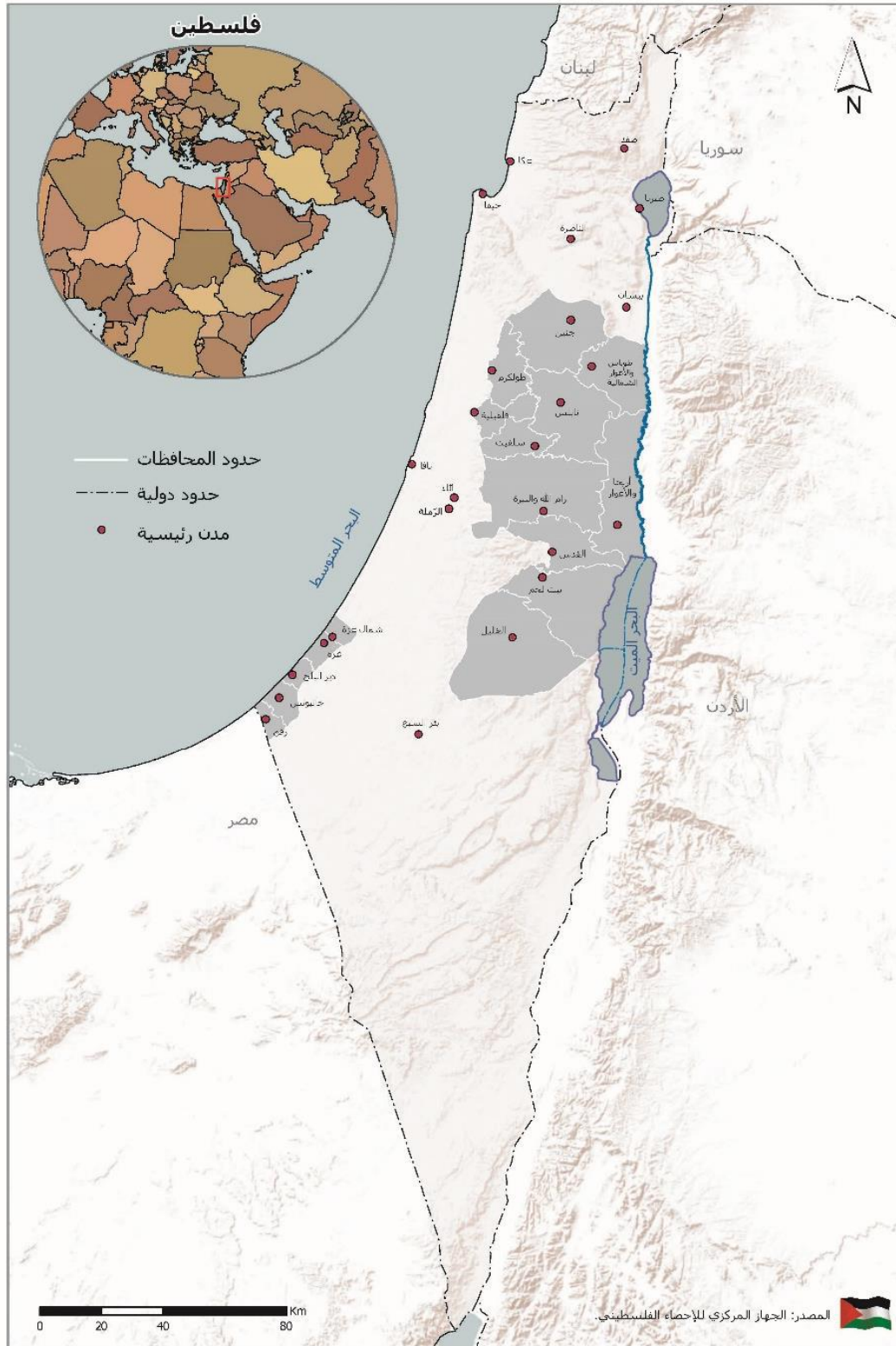
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Annexes

Annex (1): Study activities time table


Activity	Duration	2	3	4	5	6	7	8	9	10
Review literature and tool development	1 month									
Tool validation and piloting	1 month									
Data collection	2 months									
Data entry	2 months									
Data analysis	1 months									
Report writing	2 months									
Dissemination										

Annex (2): Map of Palestine



Source: PCBS (2021)

Annex (3): Sample size

		Sample size calculator
What margin of error can you accept? <small>5% is a common choice</small>	<input type="text" value="5"/> %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, v amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	<input type="text" value="95"/> %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-n you would expect that for one of the questions (1 in 20), the percentage of people who answer yes v answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? <small>If you don't know, use 20000</small>	<input type="text" value="684"/>	How many people are there to choose your random sample from? The sample size doesn't change
What is the response distribution? <small>Leave this as 50%</small>	<input type="text" value="50"/> %	For each question, what do you expect the results will be? If the sample is skewed highly one way know, use 50%, which gives the largest sample size. See below under More information if this is
Your recommended sample size is	247	This is the minimum recommended size of your survey. If you create a sample of this many people correct answer than you would from a large sample where only a small percentage of the sample re

Annex (4): Ethical approval: Helsinki Committee

**المجلس الفلسطيني للبحوث الصحي**
Palestinian Health Research Council

تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

Helsinki Committee
For Ethical Approval

Date: 07/02/2022 **Number: PHRC/HC/1048/22**

Name: Mohammed Ramadan Shamia **الاسم:**

We would like to inform you that the committee had discussed the proposal of your study about: **نفيدكم علماً بأن اللجنة قد ناقشت مقترح دراستكم حول:**

The Impact of E-learning on Students and Lecturers perspectives in Dental Colleges during the COVID-19 Pandemic in Gaza strip

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/1048/22 in its meeting on 07/02/2022 **و قد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه**

Signature

Member **Member**

Chairman

Genral Conditions:-

1. Valid for 2 years from the date of approval.
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed.

Specific Conditions:-



E-Mail: pal.phrc@gmail.com

Gaza - Palestine **غزة - فلسطين**
شارع النصر - مقترق العيون

Annex (5): Al-Quds University letter to Palestine and Al-Azhar University

Al-Quds University
Jerusalem
School of Public Health



جامعة القدس
القدس
كلية الصحة العامة

التاريخ: 2022/4/18

حضرة الدكتور/ محمود المعجمي المحترم
نائب رئيس الجامعة للشؤون الأكاديمية - جامعة فلسطين

تحية طيبة وبعد،،،

الموضوع: مساعدة الطالب محمد رمضان شامية


نشكر لكم دعمكم الدائم لمسيرة العلم والتعليم وخصوصاً دعم كلية الصحة العامة وطلابها، ونود إعلامكم بأن الطالب المذكور أعلاه يقوم بعمل بحث كمتطلب للحصول على درجة الماجستير في السياسات وإدارة الصحة- مسار الجودة وسلامة المريض بعنوان:

"The Impact of E-learning on Students and Lecturers Perspectives in Dental Colleges during the COVID-19 Pandemic in Gaza strip"

وعليه نرجو من سيادتكم التكرم بالموافقة على تسهيل مهمة الطالب في إنجاز هذا البحث حيث أن عينة الدراسة هم أعضاء الهيئة التدريسية ومطلبة المستوى الثالث والرابع والخامس للتحقين بكلية طب الأسنان في جامعة فلسطين. علماً بأنه سيتم جمع البيانات من خلال استبانة تم إعدادها من قبل الطالب.

و اقبلوا فائق التحية و الاحترام،،،




د. بسام أبو حمد
منسق عام برامج الصحة العامة
فرع غزة

د. محمد
د. حسان
لا مانع
جيهان محمد
15/4/2022
سنة
- القدس -



الماريخ: 2022/4/18

حضرة الدكتور/ حازم ميلاد المحترم
عميد كلية طب الأسنان - جامعة الأزهر

تحية طيبة وبعد،،،

الموضوع: مساعدة الطالب محمد رمضان شامية

نشكر لكم دعمكم الدائم لمسرة العلم والتعليم وخصوصاً دعم كلية الصحة العامة وطلابها، ونود إعلامكم بأن الطالب المذكور أعلاه يقوم بعمل بحث كمنطلب للحصول على درجة الماجستير في السياسات وإدارة الصحة-مسار الجودة وسلامة المريض بعنوان:

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و اقبلوا فائق التحية و الاحترام،،،

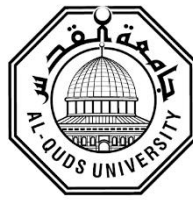



د. بسام أبو حمد
مسئق عام برامج الصحة العامة
فرع غزة

مع الموافقة
14/6/2022
سعد

- شكرا -

Annex (6): Questionnaire in English



Peace, mercy and blessings of God. and yet,,

I am the researcher\ Mohammed Ramadan Shamia, I am conducting this research study to fulfill the requirement for the master's degree in policies and health management, track quality, and patient safety in Public Health College at Al-Quds University. As the study entitled "**The impact of e-learning on the Perspectives of students and Lecturers in Dental faculties during the COVID-19 pandemic in the Gaza Strip.**"

Therefore, the researcher puts in your hands the attached questionnaire, which includes a set of paragraphs that represent the impact of e-learning in light of the Corona pandemic in Palestinian universities from the point of view of faculty members and students in dental faculties in the Gaza Strip.

We request you to read it and mark (√) in front of the appropriate answer paragraph, and your participation in this study is voluntary, with an emphasis on the confidentiality of your data and your personality, and that it will not be used except for scientific research purposes only.

Thank you for your cooperation in the service of the scientific process.

Yours sincerely

Give consent

Researcher:

Mohamed Ramadan Hassan Shamia

A questionnaire about students' perceptions about the impact of e-learning on the perspectives of students and lecturers in dental faculties during the COVID-19 pandemic in the Gaza Strip.

Serial number: (.....) for the use of the researcher

First: Personal Information:

1. **Name:**.....

2. **Gender:** Male Female

3. **Date of Birth:**

4. **Academic level:**

i. Third level

ii. Fourth level

iii. Fifth level

5. **University name:**

University of Palestine

Al-Azhar University

6. **Address:**

Governorate: Gaza

North Central

Khan Yunis

Rafah

7. **Do you have a fixed internet line at home:**

Yes

No

8. **Do you use temporary internet cards: :**

Yes

No

9. **Your e-learning medium:**

Laptop

Personal Computer

Mobile

Tab

Second Section: Questionnaire Paragraphs:

Please put a tick (√) in the appropriate place:

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
D1: The first dimension: Logistical Support						
1.	There is sufficient funding to support and develop distance education					
2.	The lack of modern software components affects the quality of distance education					
3.	The lack of human resources, including engineers and assistant technicians, affects the quality of distance education					
4.	There is a shortage of electronic educational resources					
5.	Low internet speed affects the efficiency of distance education					
6.	There is a department to support distance e-learning at the university.					
7.	There is a unified educational platform at the university for lecturers and students					
8.	The high cost of the Internet affects the application of distance education					
D2	The second dimension: Human Preparation	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Faculty members have sufficient capacity to meet the needs of remote teaching in emergency situations?					
2.	Is there a continuous development for faculty members to enable them to teach emergency remotely?					
3.	The lecturers' lack of knowledge of the teaching and learning strategy based on the teaching and distance e-learning methodology.					
4.	There is a problem in the path followed in the preparation, preparation and professional development of academic human resources (all employees in educational institutions)					

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5.	Faculty members are trained in the use of educational platforms before they are used					
6.	Some faculty members lack modern technical skills in the e-learning process					
7.	There is a difficulty in dealing with educational and educational platforms, their environments and various tools.					
D3	The third dimension: distance education infrastructure	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Infrastructure sufficient to meet the needs of distance education in emergency situations?					
2.	The inadequacy of modern electronic devices to implement distance education					
3.	Weak technological infrastructure necessary for the implementation of distance education					
4.	Various sources of electrical energy are available at the university					
5.	There are different sources of electrical energy in the home					
6.	Obsolete technological devices and equipment					
7.	There is a national educational platform for the benefit of all educational institutions with all their affiliates.					
8.	Difficulty in dealing with educational and educational (commercial) platforms with their different environments and tools.					
9.	The technical support team is able to solve the technical problems that students face					

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
D4	The fourth dimension: The use of e-learning	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	I feel good about using distance education in light of this current crisis					
2.	The university provides me with everything I need to communicate the scientific content of the curriculum through the university website					
3.	There is a strong interaction between the lecturer and the students through distance education.					
4.	You can monitor students' performance remotely, guide and provide guidance.					
5.	Allocate some practical applications that students must master in order to develop their applied skills					
6.	Multimedia is used during your explanation of the educational content through the distance education site.					
7.	Distance education helps present information in a variety of formats (video, PowerPoint, PDF, and Word).					
8.	Students submit their assignments "electronically" on time					
9.	You can evaluate students well through distance education.					
10.	Suggestions were made to the competent authorities to develop distance education to meet the current challenges					
11.	The process of evaluating assignments and tests for students is easy and convenient					
12.	I believe that the process of evaluating students through distance education is a fair					

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	process and reflects the true level of students.					
D5	Fifth Dimension: Student Readiness:	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Students have the ability to use different computer programs					
2.	Have the ability to use online platforms efficiently					
3.	Students have the ability to work collaboratively					
4.	Students have the skill of self-learning					
5.	Students interact with lecturers on a regular basis					
6.	Ability to handle electronic courses					
7.	Students have the possibility to use the university's electronic platform effectively					
8.	The ability to actively participate in the transformation from a recipient to a partner in knowledge.					
9.	Possesses the ability to use different learning websites and resources.					
10.	Ability to switch between blended learning methods and techniques					
11.	The university's e-learning system is easy to use					
D6	The sixth dimension: Obstacles	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	Online exams do not show the real level of students.					
2.	Inability to distinguish students from each other					
3.	There was no real control over students' performance through e-learning.					
4.	The spread of cheating in remote electronic exams					
5.	Some lecturers do not have sufficient experience in					

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
	preparing various electronic exams.					
6.	Students' answers to tests and exams are very similar among students.					
7.	Some students face difficulties in dealing with electronic programs.					
8.	It is difficult for the teacher to follow up on all students because some of them boycotted distance education.					
9.	Some topics need interactive methods and explanations with students.					
10.	Spending a lot of time in front of the computer answering student inquiries					
11.	Existing student assessment tools do not consider distance education.					
12.	Lack of students' motivation for distance learning.					
13.	Lack of pre-made self-learning materials for emergencies.					
14.	Poor ability to raise and deliver required activities and duties.					
15.	Some courses are difficult to teach remotely to students					
16.	The practical application of some skills is missing through distance e-learning					
17.	It is difficult for students to acquire practical and technical skills through teaching at a distance					
18.	Lecturers find it difficult to communicate information to students in purely practical courses through distance education					
D7	The seventh dimension: The advantages of distance e-learning	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1.	It helps in employing modern technologies in teaching					

.No	Items	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2.	Helps to update and develop distance learning methods.					
3.	An advanced and important technical system to meet the challenges of the times					
4.	Assists in employing modern teaching strategies					
5.	Helps achieve distance learning goals					
6.	It leads to the development of students' self-learning skills					
7.	This technology provides the student with an atmosphere of privacy.					
8.	Helps in acquiring new skills in the field of computer.					
9.	E-learning gives the student a space of scientific freedom					
10.	It helps in exchanging experiences and information among students					
11.	Helps develop scientific thinking skills					
12.	E-learning helps provide programs that simulate reality					
13.	It increases the interaction between the teacher and the student.					
14.	It increases the student's enthusiasm for learning.					
15.	Effective system in the educational process.					
16.	Distance education contributes to saving time and effort for students.					
17.	Distance education contributes to saving time and effort for faculty members					
18.	Distance education contributes to improving the quality of sciences for students.					

Annex (7): Questionnaire in Arabic:



السلام عليكم ورحمة الله وبركاته. وبعد،،

أنا الباحث / محمد رمضان حسن شامية أقوم بإجراء هذا البحث كمتطلب رئيسي من متطلبات الحصول على شهادة الماجستير في برنامج السياسات والإدارة الصحية مسار الجودة وسلامة المريض في كلية الصحة العامة بجامعة القدس ابوديس ، حيث أن الدراسة والتي بعنوان " أثر التعليم الإلكتروني على وجهات نظر الطلاب والمحاضرين في كليات طب الأسنان خلال جائحة كوفيد 19 - في قطاع غزة"

"The impact of e-learning on the perspectives of students and lecturers in dental faculties during the COVID-19 pandemic in the Gaza Strip"

لذا يضع الباحث بين أيديكم الاستبانة المرفقة المتضمنة مجموعة من الفقرات التي تمثل أثر التعليم الإلكتروني في ظل جائحة كورونا في الجامعات الفلسطينية من وجهة نظر أعضاء هيئة التدريس والطلبة في كليات طب الأسنان في قطاع غزة .

راجيا منكم قراءتها والتأشير بعلامة (√) أمام فقرة الإجابة الملائم لكم ، كما أن مشاركتك في هذه الدراسة طوعية ، مع التأكيد على سرية البيانات وشخصيتك وعدم استخدامها إلا لأغراض البحث العلمي فقط ، شاكرا تعاونكم خدمة للمسيرة العلمية.

وتفضلوا بقبول فائق الاحترام والتقدير ،،

الباحث:

محمد رمضان حسن شامية

إقرار بالموافقة

استبانة تصور المحاضرين حول أثر التعليم الإلكتروني على وجهات نظر الطلاب والمحاضرين في

كليات طب الأسنان خلال جائحة كوفيد-19 في قطاع غزة

الرقم التسلسلي: (.....) لاستخدام الباحث

أولاً: المعلومات الشخصية:

1. الاسم:
2. الجنس: ذكر أنثى
3. تاريخ الميلاد:
4. المؤهل العلمي:
 1. بكالوريوس
 2. بورد
 - ماجستير
 - دكتوراه
5. شهادات تخصصية:

زراعة أسنان تقويم علاج عصب تركيبات سنوية ثابتة طب اسنان الاطفال

جراحة وجه وفكين علاج تحفظي تركيبات سنوية متحركة علاج أمراض لثة

أخرى
6. الرتبة الأكاديمية: معيد محاضر أستاذ مساعد أستاذ مشارك أستاذ دكتور
7. سنوات الخبرة في طب الأسنان: سنة
8. سنوات الخبرة في العمل الأكاديمي: سنة
9. هل مارست التعليم الإلكتروني من قبل: نعم لا
10. اسم الجامعة:

جامعة فلسطين جامعة الازهر
11. العنوان: المحافظة: غزة الشمال الوسطى خان يونس رفح

استبانة تصور الطلاب حول أثر التعليم الالكتروني على وجهات نظر الطلاب والمحاضرين في كليات

طب الأسنان خلال جائحة كوفيد-19 في قطاع غزة

الرقم التسلسلي: (.....) لاستخدام الباحث

أولاً: المعلومات الشخصية:

1. الاسم:
2. الجنس: ذكر . أنثى
3. تاريخ الميلاد:
4. المستوى الدراسي: المستوى الثالث المستوى الرابع المستوى الخامس
5. الجامعة:
 - جامعة فلسطين
 - جامعة الأزهر
6. العنوان: المحافظة: غزة الشمال الوسطى خان يونس رفح
7. هل لديك خط انترنت ثابت في المنزل: نعم لا
8. هل تستخدم بطاقات الانترنت المؤقتة: نعم لا
9. وسيلة التعليم الالكتروني لديك: لاب توب كمبيوتر الجوال تاب

القسم الثاني: فقرات الاستبانة:

يرجى وضع إشارة (√) في المكان المناسب:

الرقم	الفقرات	موافق بشدة	موافق	محايد	غير موافق	غير موافق بشدة
البعد الأول: الدعم اللوجستي						
1.	هناك التمويل الكافي لدعم وتطوير التعليم عن بعد					
2.	عدم توفر مكونات البرمجيات الحديثة يؤثر على جودة التعليم عن بعد					
3.	نقص الموارد البشرية من المهندسين والفنيين المساعدين يؤثر على جودة التعليم عن بعد					
4.	يوجد نقص في الموارد التعليمية الإلكترونية					
5.	تؤثر سرعة الإنترنت الضعيفة على كفاءة التعليم عن بعد					
6.	يوجد قسم لدعم التعليم الإلكتروني عن بعد في الجامعة.					
7.	يوجد منصة تعليمية موحدة في الجامعة للمحاضرين والطلبة					
8.	التكلفة العالية للإنترنت تؤثر على تطبيق التعليم عن بعد					
البعد الثاني: التجهيزات البشرية						
1.	أعضاء هيئة التدريس لديهم القدرة الكافية لتلبية احتياجات التدريس عن بعد في حالات الطوارئ؟					
2.	هناك تطوير مستمر لأعضاء هيئة التدريس لتمكينهم من تدريس الطوارئ عن بعد؟					
3.	قلة دراية المحاضرين باستراتيجية التدريس والتعلم القائمة على منهجية التدريس والتعلم الإلكتروني عن بعد.					
4.	يوجد مشكلة في المسار المتبع في الإعداد والتهيئة والتطوير المهني للموارد البشرية الأكاديمية (جميع العاملين في المؤسسات التعليمية)					
5.	يتم تدريب أعضاء هيئة التدريس على استخدام المنصات التعليمية قبل استخدامها					
6.	يفتقر بعض أعضاء هيئة التدريس إلى المهارات الفنية الحديثة في عملية التعليم الإلكتروني					

					يوجد صعوبة في التعامل مع المنصات التعليمية والتعليمية وبيئاتها وأدواتها المختلفة.	7.
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	البعد الثالث: البنية التحتية للتعليم عن بعد	
					البنية التحتية كافية لتلبية احتياجات التعليم عن بعد في حالات الطوارئ؟	1.
					عدم كفاية الأجهزة الإلكترونية الحديثة لتطبيق التعليم عن بعد	2.
					ضعف البنية التحتية التكنولوجية اللازمة لتطبيق التعليم عن بعد	3.
					تتوفر مصادر مختلفة للطاقة الكهربائية في الجامعة	4.
					تتوفر مصادر مختلفة للطاقة الكهربائية في البيت	5.
					تقادم في الأجهزة والمعدات التكنولوجية	6.
					يوجد منصة تعليمية وطنية لصالح جميع المؤسسات التعليمية بكافة منتسبيها.	7.
					صعوبة التعامل مع المنصات التعليمية والتعليمية (التجارية) وبيئاتها وأدواتها المختلفة.	8.
					يتمكن فريق الدعم الفني من حل المشكلات الفنية التي تواجه الطلاب	9.
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	البعد الرابع: استخدام التعليم الإلكتروني	
					أشعر بالرضا باستخدام التعليم عن بعد في ظل هذه الأزمة الحالية	1.
					توفر لي الجامعة كل ما أحتاجه لتوصيل المحتوى العلمي للمناهج من خلال موقع الجامعة	2.
					يوجد تفاعل قوي بين المحاضر والطلبة من خلال التعليم عن بعد.	3.
					يمكنك مراقبة أداء الطلاب عن بعد وإرشادهم وتقديم التوجيهات لهم.	4.
					تخصيص بعض التطبيقات العملية التي يجب على الطلاب إتقانها من أجل تطوير مهاراته التطبيقية	5.
					تستخدم الوسائط المتعددة أثناء شرحك للمحتوى التعليمي من خلال موقع التعليم عن بعد.	6.

					يساعد التعليم عن بعد بعرض المعلومات بصيغة متعددة (فيديو، بوربوينت، PDF، وورد)	7.
					يرسل الطلاب الواجبات المطلوبة منهم "إلكترونيًا" في الوقت المحدد	8.
					يمكنك تقييم الطلاب بطريقة جيدة من خلال التعليم عن بُعد.	9.
					قدمت اقتراحات للجهات المختصة لتطوير التعليم عن بعد لمواجهة التحديات الحالية	10.
					عملية تقييم الواجبات والاختبارات للطلبة تتم بسهولة ويسر	11.
					اعتقد ان عملية تقييم الطلبة من خلال التعليم عن بعد هي عملية عادلة وتعكس المستوى الحقيقي للطلبة.	12.
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	البعد الخامس: جهوزية الطلبة:	
					يمتلك الطلبة القدرة على استخدام برامج الكمبيوتر المختلفة مثل:(أوفيس - الزووم- قارئ المستندات PDF)	1.
					لديهم القدرة على استخدام منصات الإنترنت والمودل او اليوبينار بكفاءة	2.
					يمتلك الطلبة القدرة على العمل بشكل تعاوني	3.
					يمتلك الطلبة مهارة التعلم الذاتي	4.
					يتفاعل الطلبة مع المحاضرين باستمرار	5.
					القدرة على التعامل مع الدورات الإلكترونية	6.
					لدى الطلبة الإمكانية لاستخدام منصة الجامعة الإلكترونية بشكل فعال	7.
					القدرة على المشاركة الفعالة للتحويل من متلقي إلى شريك في المعرفة.	8.
					يمتلك القدرة على استخدام مواقع ومصادر التعلم المختلفة.	9.
					القدرة على التبديل بين أساليب وطرق التعلم المدمج	10.
					نظام التعلم الإلكتروني في الجامعة سهل الاستخدام	11.
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	البعد السادس: المعوقات	
					لا تُظهر الاختبارات الإلكترونية المستوى الحقيقي للطلاب.	1.
					عدم المقدرة من تميز الطلاب عن بعضهم البعض	2.

					3. لم تكن هناك رقابة حقيقية على أداء الطلبة من خلال التعليم الإلكتروني.
					4. انتشار حالات الغش في الامتحانات الإلكترونية عن بعد
					5. لا يمتلك بعض المحاضرين الخبرة الكافية في تحضير الامتحانات الإلكترونية المختلفة.
					6. إجابات الطلبة على الاختبارات والامتحانات متشابهة جدًا بين الطلاب.
					7. يواجه بعض الطلاب صعوبات في التعامل مع البرامج الإلكترونية.
					8. يصعب على المعلم متابعة جميع الطلاب بسبب مقاطعة بعضهم للتعليم عن بعد.
					9. تحتاج بعض الموضوعات إلى طرق تفاعلية وشروحات مع الطلاب.
					10. قضاء الكثير من الوقت أمام الكمبيوتر للرد على استفسارات الطلاب
					11. لا تأخذ أدوات تقييم الطلاب الحالية في الاعتبار التعليم عن بعد.
					12. قلة الدافع لدى الطلاب للتعلم عن بعد.
					13. عدم وجود مواد التعلم الذاتي المعدة مسبقًا لحالات الطوارئ.
					14. ضعف القدرة على رفع وتقديم الأنشطة والواجبات المطلوبة.
					15. بعض المساقات يصعب تدريسها عن بعد للطلبة
					16. التطبيق العملي لبعض المهارات مفقود من خلال التعليم الإلكتروني عند بعد
					17. يصعب على الطلبة اكتساب المهارة العملية والفنية من خلال التدريس عن بعد
					18. يجد المحاضرين صعوبة في توصيل المعلومات للمساقات العملية البحتة للطلبة من خلال التعليم عن بعد
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة	البعد السابع: مزايا التعليم الإلكتروني عن بعد
					1. يساعد في توظيف التقنيات الحديثة في التدريس
					2. يساعد على تحديث وتطوير أساليب التعلم عن بعد.
					3. نظام تقني متطور ومهم لمواجهة تحديات العصر
					4. يساعد في توظيف استراتيجيات التدريس الحديثة

					يساعد في تحقيق أهداف التعلم عن بعد	5.
					يؤدي الى تنمية مهارات التعلم الذاتي لدى الطلاب	6.
					توفر هذه التقنية للطلاب جواً من الخصوصية.	7.
					يساعد في اكتساب مهارات جديدة في مجال الحاسب الآلي.	8.
					يمنح التعلم الإلكتروني للطلاب مساحة من الحرية العلمية	9.
					يساعد في تبادل الخبرات والمعلومات بين الطلاب	10.
					يساعد على تنمية مهارات التفكير العلمي	11.
					يساعد التعلم الإلكتروني في توفير برامج تحاكي الواقع	12.
					يؤدي إلى زيادة التفاعل المشترك بين المعلم والطالب.	13.
					يزيد من حماس الطالب للتعلم.	14.
					نظام فعال في العملية التعليمية.	15.
					يساهم التعليم عن بعد في توفير الوقت والجهد للطلاب.	16.
					يساهم التعليم عن بعد في توفير الوقت والجهد لأعضاء هيئة التدريس	17.
					يساهم التعليم عن بعد في تحسين جودة الطلاب العلمية.	18.

Annex (8): Qualitative part of questionnaire - Arabic

الجزء الثاني الأسئلة النوعية (المجموعات البؤرية)

الأخوة الزملاء الكرام/ أرحب بكم جميعا في هذه الجلسة (المجموعة البؤرية) لمعرفة آرائكم وملاحظاتكم وتوصياتكم بخصوص أثر التعليم الإلكتروني في ظل جائحة كورونا في الجامعات الفلسطينية من وجهة نظر أعضاء هيئة التدريس والطلبة في كليات طب الأسنان في قطاع غزة . وهي محور دراستي للحصول على درجة الماجستير في الصحة العامة (سياسات وإدارة صحية) ونؤكد على سرية البيانات وشخصيتكم وعدم استخدامها إلا لأغراض البحث العلمي فقط , ويسعدني مشاركتكم والأخذ برأيكم في المحاور التالية:-

- حسب خبراتكم ما هي أكثر الأمور التي تعجبك في التعلم الإلكتروني؟
- ما هي أكثر الأشياء التي لا تعجبك في التعلم الإلكتروني؟
- كيف يمكن التقليل من معوقات تطبيق التعليم عن بعد؟
- ما مدى امتلاك المحاضرون المعرفة والامكانيات الالكترونية اللازمة للعمل عن بعد؟
- مدى امتلاك الطلاب المعرفة والامكانيات الالكترونية اللازمة للدراسة عن بعد؟
- ماهو السبب الرئيسي او العائق الكبير من وجهة نظر المحاضر - الطالب لعدم نجاح الدراسة عن بعد؟
- كيف كان التعامل مع المساقات التي تحتوي على ممارسة عملية لاكتساب الخبرة الفنية؟
- حسب وجهة نظرك هل يمكن الاعتماد على التعليم الإلكتروني في جميع المساقات العلمية؟
- كيف يمكن تحسين دور الجامعة في تحسين التعلم الإلكتروني للمحاضرين؟

Annex (9): Qualitative parts

Dear Colleagues / welcome to you all in this session (focus group) to hear and know your opinions and recommendation regarding the impact of e-learning in light of the Corona pandemic in Palestinian universities from the point of view of faculty members and students in dental faculties in the Gaza Strip. Which is core of my studies to obtain a master's degree in public health (Health Policy and Management) and we assure the confidentiality of the data and your identity and not to use it except for scientific research purposes only. I am glad to share your opinion in the following domain.

- *What do you like the most about E-learning?*
- *What do you dislike the most about E-learning?*
- *How can the obstacles to the application of distance education be reduced?*
- *To what extent do lecturers possess the knowledge and electronic capabilities necessary to work remotely?*
- *To what extent do students possess the knowledge and electronic capabilities necessary for distance learning?*
- *What is the main reason or the big obstacle from the lecturer's - student's point of view for the lack of success of distance study?*
- *How was the course dealing with practical exercises to gain technical experience?*
- *According to your point of view, e-learning can be relied upon in all scientific courses?*
- *How can the university's role in improving e-learning for lecturers be improved?*

Annex (10): List of experts validated the tool

1.	Dr. Abdel Hamid El Bilbeisi	PhD in Clinical Nutrition Department- Faculty of Pharmacy
2.	Dr. Ahmed Aldalu	Dean of Faculty of Pharmacy -Palestine University
3.	Dr. Jamal Naim	PhD in Orthodontics- Faculty of Dentistry- Palestine University
4.	Dr. Eiad Almasri	Head of the Information Technology Department at the University of Palestine
5.	Dr. Hazem Melad	Dean of Faculty of Dentistry- PhD in OMFsurgery, Al Azhar University,Gaza
6.	Dr. Wasseem Mushtha	PhD, Faculty of Dentistry, Al Azhar University,Gaza
7.	Dr. Abdullah Moamer	Academic affairs at the University of Palestine
8.	Dr. Osama Jaber	Vice Dean, College of Dentistry- Palestine University

Annex (11): Estimated budget

Item	Unit	Expected USD	Comments
Study tools	Questioner	100	
Transportation	3 months	250	250*2
Training workshop	For data collectors	50	Refreshments
Photocopy papers		300	
Data Collectors	350 x 5 USD for questionnaires	1750	
Data entry & Analysis		600	
Dissemination of results	Refreshments	50	
Copy of final report	15 copy x 15 USD	225	
Total		3325 USD	Expected to be less or more

عنوان الدراسة: دراسة حول أثر التعليم الإلكتروني على وجهات نظر الطلاب والمحاضرين في كليات طب الأسنان خلال جائحة كوفيد-19 في قطاع غزة.

إعداد: محمد رمضان حسن شامية

إشراف: د. يوسف عوض

ملخص الدراسة

الهدف من الدراسة هو تحديد تأثير التعلم الإلكتروني على مواقف الطلاب والمحاضرين في كليات طب الأسنان خلال جائحة COVID-19 في قطاع غزة.

صممت هذه كدراسة وصفية تحليلية مقطعية ، وبلغ حجم العينة المختارة 300 طالبًا شاركوا من طلاب البكالوريوس في طب الأسنان في المراحل التعليمية المختلفة في المستويات الثالثة والرابعة والخامسة في جامعة فلسطين وجامعة الأزهر في قطاع غزة. تم اختيار المشاركين من خلال عينة طبقية تناسبية. تم جمع البيانات الكمية من خلال استبيان ذاتي تم تطويره من قبل الباحث ، بالإضافة إلى ذلك ، تم إجراء أربع مناقشات جماعية مركزة مع 34 مشاركًا تم اختيارهم بشكل مقصود من مستويات تعليمية مختلفة باستخدام استبيان مقابلة شبه هيكلية. كان معدل الاستجابة 100٪. كانت الموثوقية الإجمالية عالية. (Cronbach's alpha 0.892) تم إدخال البيانات وتحليلها باستخدام برنامج SPSS للبيانات الكمية بينما تم استخدام التقنيات الموضوعية المفتوحة لتحليل البيانات النوعية.

توصلت الدراسة إلى أن المتوسط الكلي لأبعاد الدراسة ل 300 طالب كان (3.41 7/7 = 68.20٪) لجميع المجالات مما يدل على أن تصورهم جيد عن التعلم الإلكتروني. أعلى متوسط كان حول مجال "البعد 6: العقبات" (3.92 7/6 = 78.4٪) مما كشف أن التصور العام لهذا المجال كان سلبياً ، وأقل متوسط كان البعد 4: "استخدام التعلم الإلكتروني" (3.24 7/3 = 64.8٪). أظهرت نتائج الدراسة الخاصة بالطلاب أن متوسط الطلاب الذكور أعلى دلالة إحصائية مقارنة بالإناث في متوسط البعد الأول: الدعم اللوجستي ، البعد الرابع: استخدام التعلم الإلكتروني ، البعد الخامس: جهوزية الطالب ، البعد السابع: مزايا التعلم الإلكتروني عن بعد والمجال ككل. (P < 0.05) بينما أظهر الجدول عدم وجود فروق ذات دلالة إحصائية في المجالات الأخرى المدروسة مثل البعد الثاني: التجهيزات البشرية ، والبعد الثالث: البنية التحتية للتعليم عن بعد ، والبعد السادس: المعوقات. (P > 0.05) ويمكن تفسير هذه النتيجة بصغر حجم العينة للذكور المشاركين ، والذي بلغ 70 طالبًا مقابل 230 طالبة.

أظهرت نتائج الدراسة الخاصة بالطلاب وجود فروق ذات دلالة إحصائية بين أسلوب التعلم الإلكتروني في متوسط المجال المدروس كُبعد 4: استخدام التعلم الإلكتروني ، البعد 5: جهوزية الطلبة ، البعد السادس: عقبات ، البعد السابع: مزايا التعلم الإلكتروني عن بعد والمجال ككل. (P < 0.05) بينما أظهر الاختبار عدم وجود فروق ذات دلالة إحصائية بين أسلوب التعلم الإلكتروني في متوسط المجال المدروس كُبعد الأول: الدعم اللوجستي ، والبعد الثاني: التجهيزات البشرية ، والبعد الثالث: البنية التحتية للتعليم عن بعد (P > 0.05) .

كما توصلت الدراسة إلى أن المتوسط الكلي لأبعاد الدراسة ل 20 محاضراً كان (3.47 7/7 = 69.4٪) لكافة المجالات مما يدل على أن تصورهم جيد عن التعلم الإلكتروني. كان أعلى متوسط حول "البعد 6: عقبات" المجال (4.36 7/6 = 87.1٪) ، وكشف أن التصور العام لهذا المجال كان إيجابياً ، وكان أدنى متوسط هو "البعد 4: استخدام التعلم الإلكتروني" (3.00 4/7 = 60٪) ، و "البعد 3: البنية التحتية للتعليم عن بعد" (3.06 7/3 = 61.22٪).

وبناءً على النتائج التي تم التوصل إليها يوصي الباحث ببرامج إعداد المحاضرين وبرامج التطوير المهني لأعضاء هيئة التدريس بما في ذلك الدورات والبرامج الخاصة بالتعليم عن بعد ، وشرح آلياته ، وطرق التعلم ، وطرق التقييم ، والاختبارات في التعليم عن بعد. كما أوصت الباحثة بضرورة تثقيف المجتمع المحلي وتغيير تصوره تجاه خريجي وطلاب التعليم عن بعد من خلال منحهم الثقة والافتتاح بقدراتهم وكفاءتهم.