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THE IMPACT OF PALESTINIAN TEACHER'S ACCEPTANCE OF USING TECHNOLOGY ON THEIR TEACHING PRACTICES IN LIGHT OF THE CORONA PANDEMIC

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Abstract:

This paper studied the impact of Palestinian teacher's acceptance of using technology on their teaching practices in light of the corona pandemic, twelve teachers are from different education directories in West- Bank. Qualitative methodology was employed in-depth semi-structured interviews to explain how their acceptance of using technology according to a model of technology acceptance (TAM); impact their teaching practices in light of the corona pandemic. Findings shows that Teacher's perception that employing technology is useful in education. These perceptions of usefulness of using technology have been reflected in their practices in all aspect of the educational process: content, communication with students, teaching strategies, assessment methods, and the variety of applications they used. Also employing technology in education is easy, if the teacher possesses the technological skills. They worked to develop themselves in the field of technology and computer applications through self-learning and enrollment in the online workshops and courses, then applying what they had learned during in their practice, continuing to develop themselves, and employing technology after the pandemic. Finally, teacher's acceptance of employing technology in education has been affected by physical and human factors. It is recommended that establishing an integrated plan by the Ministry of Education to include human and physical resources in order to achieve readiness for education in emergencies.

Key words: Corona Pandemic, Technology Acceptance Model (TAM), Perceived of Usefulness (PU), Perceived Ease of Use (PEOU).



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Introduction

The outbreak of a deadly disease called Covid-19 caused by a Corona Virus shook the entire world. The world health organization declared it as a pandemic (Dhawan, 2020). This situation challenged the education system around the world, especially the less economically developed countries (Alipio, 2020). It has negative effects on education including, learning disruptions, and decreased access to education and increased student debts (Onyema et al.,2020). Against the backdrop of the COVID-19 closure, governments and tertiary institutions across the world initiative various policy to continue teaching activities so as to contain the virus, and forced educators to shift to an online mode of teaching overnight (Zhang et al., 2020). This imposes the need for all educational institutions, teachers and learners to adopt technology and improve their digital skills in line with emerging global trends and realities in education. (Zhang et al., 2020; Onyema et al.,2020). Online learning which uses internet access becomes popular since it really supports learning from home, and can help the government to minimize the spread of corona virus. educators should use a variety of strategies to improve online learning. By doing so, it is hoped that the process of teaching and learning by using online course will run smoothly (Yulia, 2020), Although it is being done suddenly, unreadily (Essa et al., 2020). This electronic education can supplement the process of present education, but it cannot be a substitute for the face to face education (Kaur et al., 2020).

There are a number of challenges from the perspectives of learners and academicians to move from offline to online mode of learning, which are: Engaging students and indulging them in teaching-learning progression, developing content that not only covers the curriculum but also engages learners is need of the hour, adoption of online teaching, though laudable during this time. Even learners also find e-teaching boring and less interactive (Sangeeta & Tandon, 2020).

Global investment in ICT to improve teaching and learning in schools have been initiated by many governments. Despite all these investments on ICT infrastructure, equipment and professional development to improve education in many countries, ICT adoption and integration in teaching and learning have been limited (Buabeng-Andoh, 2012; Soni, 2020). Palestine is one of Many countries have long used e-learning in emergency situations in corona pandemic. The researcher concludes that technology is an essential tool to offer educational, psychological, and medical advice or supports to parents, educators and students during and after pandemics. Teachers and learner's acceptance of technology, is an important element in the ability to apply e-learning and distance education in light of the Corona pandemic. There is currently little or no literature on COVID-19 in relation to educational studies (Alipio, 2020), especially in the developed countries.

There are many models was used to investigate the technology acceptance in education, Technological Acceptance Model (TAM), were the most used theories in the analyzed studies(Valverde-Berrocoso et al., 2020). TAM provides an extremely useful theoretical tool in understanding how teachers' technology acceptance level impacts technology integration. it posits that perceived usefulness (PU) and perceived ease of use (PEOU) are the main determinants of the attitudes (AT) towards implementing a new technology (Hakkak et al., 2013). Granić & Marangunić (2019) conducted a meta-analysis and found out that more than 90% of technology acceptance model studies used questionnaire-based field studies. Only three out of 101 TAM papers incorporated qualitative data, such as content analysis. TAM literature reviews simply include little qualitative studies; they rather just focus on statistical findings of the articles to be considered. also, studies that use the TAM to test technology acceptance in the field of education have not fully explored developing countries, especially Palestine

Digital teacher competence and teacher education opportunities to learn digital competence, are instrumental in adapting to online teaching during COVID-19 school closures (König et

al., 2020). The present study used the extended version of TAM to identify PU and PEOU of Palestinian teachers and its impact on their teaching practices, also it will identify: how external factors influencing the acceptance Palestinians teachers during the pandemic. More specifically, the research poses three questions:

- 1) To what extent the perceived usefulness of using technology impact their teaching practices in the corona pandemic?
- 2) How much the perceived ease of use of using technology impact their teaching practices in the corona pandemic?
- 3) How external factors influence the acceptance of using technologies in Palestinians teachers' practices in corona pandemic?

Literature review

The Corona virus has revealed emerging weakness in education systems around the world. It is now clear that society needs flexible and resilient education systems as we face unpredictable futures (Ali, 2020). Teachers should use technology to enhance learning especially during these exceptional times. This section of the article describes the education during covid pandemic around the world, employing technology in education, teacher's acceptance of using technology depending on different versions of technology acceptance models, factors impact teachers' acceptance of using technology in their practices.

1. Worldwide education during Corona pandemic

Universities worldwide are moving more and more towards online learning or E- Learning, the staff members should use technology and technological tools to enhance learning especially during these exceptional times. Schools, colleges and universities are moved or moving to online platforms (Senthilkumar & Kumari, 2020; Sahu, 2020). Teachers and students are exposed to new platforms such as Microsoft teams, Google hangouts, Zoom and others (Onyema et al., 2020). In some cases effective Peers, instructor's attitude and availability may promote application (Al-Marroof et al., 2020).

Senthilkumar & Kumari (2020) and Zhang et al. (2020) found many challenges facing moving to online learning in corona pandemic, with regards to class Students who has the necessary devices are attending the online classes properly. With regards to infrastructure challenges teaching fraternity has needed devices for conducting online class, but they feel difficult to access the technology, which means that there are no proper training regards to conduct of online class by the management. They feel difficult to do their recording due to noise distractions. With regards to personal challenges respondents feel difficult to manage family and work, they don't find proper time to groom themselves during the pandemic time. On the other hand, (Baticulon et al., 2020) classify barriers into five categories: technological, individual, local, institutional, and societal barriers. He found that adjusting learning styles, having to fulfill responsibilities at home, and poor communication between teachers and learners are the most frequent difficulties.

Third world countries are facing difficulties in dealing with the scenario of sudden transformation of educational planning, during this pandemic with a weak technical infrastructure, academic inefficiency and lack of resources, but everyone must live with this pandemic; they should not neglect of digital transformation in educational institutions (Mishra et al., 2020). Palestine is one of Many countries have to use e-learning in emergency situations. In the case the outbreak of Corona virus, the emergency remote teaching was not planned in advance and involved a sudden shift from traditional teaching into a remote one in view of emergency situations. Due to unplanned nature of e-Learning in crisis situations, students, parents, teachers and faculty members confront many obstacles in

accommodating and embracing e-Learning in emergency remote teaching. In most cases students complain about the inequality in education and the difficulties in gaining access to educational resources, while faculties complain about students' engagement in emergency remote teaching environment (Affouneh et al., 2020).

Khlaif & Salha (2020) indicated various challenges in the emergency remote teaching during COVID-19 crisis in developing countries including Palestine. These challenges, were the main factors that negatively influenced students' attendance and engagement in online classes, and included the learning environment, quality of digital content, digital inequity, and the violation of digital privacy of students and parents. Although these challenges, middle school teachers' response to school closures in developing countries in times of crisis including Palestine; developed their skills to use emerging technologies and design suitable digital content (Khlaif et al., 2020).

1. Employing technology in education:

The concept of online education technology is a major component of education in the twenty-first century. It is a powerful enabling tool that play a significant role in the teaching and learning process (Chisango et al., 2020), and has made a significant impact on the educational paradigm, and has created a virtual education community (Lee et al., 2018). The increasing use of technology in education has altered teachers' styles from the traditional approach that often indoctrinates knowledge to a more flexible approach where they act more as facilitators, mentors, and motivators to inspire students to participate and learn (Onyema & Deborah, 2019). And has made the process of teaching and learning all the more enjoyable (Maslin et al., 2010).

Also using educational technologies facilitates online education, student-teacher interactions, connection and relationships. It enhances teaching and learning experiences, content creation, course sharing, assessments, and feedback. also the knowledge of technology increases educators' and students' interest, competence, confidence, creativity, employability and output, and also prepares them for the future (Onyema et al., 2020) . Keržič et al. (2019) reported that e-learning is positively perceived to be usefulness when: the teacher engages and participates in his activities in e-courses, and the students 'attitude towards the subject and the performance of the lecturers in the classroom has a direct effect, as well as the acceptance of technology has an indirect effect. The existence of some obstacles that hinder the use of teaching technology by teaching staff members. The most important of these are the lack of necessary equipment and infrastructure, (Issa & Saleh, 2019; Murad , 2014).

Since 10 years ago Shraim & Khlaif (2010) found that both students and teachers in Palestine have positive attitudes towards the usefulness of e-learning methods but that they might not yet be ready to adopt them. There are also many challenges to the implementation of e-learning in Palestine, including the digital devices and technical limitations of the network, lack of e-learning skills, lack of autonomy, poor time management, workload pressure and language. and suggested that best practices need to be developed and implemented by the ministry of education.

2. Teacher's acceptance of using technology

The adoption of educational technology in teaching depends on how well a teacher accepts it (Wong, 2015). Technology acceptance can be defined as a user's willingness to employ technology for the tasks it is designed to support (Smarkola, 2011). There have been various models developed for integrating technology into educational settings, one of which and the most popular is Technology Acceptance Model (TAM). TAM gained popularity across researchers rapidly with the help of empirical support particularly coming from the fields of

education. It provides an extremely useful theoretical tool in understanding how teachers' technology acceptance level impacts technology integration (Aypay et al., 2012).

TAM which have many different versions represent a credible model for facilitating assessment of diverse learning technologies (Ali, 2017). Its applications are classified in four groups based on whether the analysis focus was: factors predicting ; perceived usefulness (PU) and perceived ease of use (PEOU), factors included from other technology acceptance frameworks, variables with potential moderating or controlling effect, and consequent factors which are the attitudes and usage (Angelica et al., 2020). TAM's core variables, perceived ease of use and perceived usefulness, have been proven to be antecedent factors affecting acceptance of learning with technology (Ali, 2017). PU is defined as the degree to which the person believes that using the particular technology would enhance her/his job performance. On the other hand, PEOU is defined as the degree to which the person believes that using the particular technology would be free of effort (Hakkak et al., 2013; Angelica et al., 2020). These two beliefs create a favorable behavioral intention toward using technology that consequently affects its self-reported implementation (Hakkak et al., 2013).

TAM posits the main determinants of the attitudes (AT) towards implementing a new technology are: perceived usefulness (PU) and perceived ease of use (PEOU) are (Hakkak et al., 2013; Angelica et al., 2020). While Granić & Marangunić (2019) suggested that the user's motivation can be explained by three factors: perceived ease of use, perceived usefulness and attitude toward using, and these attitudes of a user toward the technology was a major determinant of whether the user will actually use or reject this technology. Attitude was central to behavioral intentions and usage behaviors, partially mediated the effects of exogenous constructs on behavioral intentions, and had a direct influence on usage behaviors (Dwivedi et al., 2019).

Wong (2015) found that pre service teachers had a positive attitude towards the use of educational technology, and perceived usefulness is more influential than perceived ease of use. But Tarhini et al. (2015) found that perceived ease of use was not a significant predictor of attitude towards use of technology in education. Sánchez-Mena et al. (2017) emphasized that perceived usefulness influences in a direct and positive way teachers' intention to use educational video games, and perceived ease of use indirectly influence intentions through perceived usefulness. Also school teachers had a positive attitude towards the adoption of technologies and were ready to integrate ICTs in teaching and learning but they lacked the requisite ICT skills (Chisango et al., 2020).

One goal of modern education must be to prepare students for life in a digital world. this requires a suitable use of digital media in the classroom, which depends especially on how much teacher accept it (Mayer & Girwidz, 2019). Baz (2016) reported that student teachers have highly positive attitudes towards the use of technology in language learning and teaching because of its convenience, time-saving feature, and improving learner engagement. Also Smarkola (2011) found that student teachers and experienced teachers believe that it is important to learn to use computers as a tool to integrate computer applications into the classroom. there is a strong intention among high school teachers to use novel technology. Also Radovan & Kristl (2017) found that the crucial factor for learning management system acceptance by university teachers is the immediate social influence at work, but the formation of the learning process largely depends on the characteristics of the learning management system tools and the perceived usefulness of the application.

3. Factors impact teachers' acceptance of using of technology in their practices

According to the TAM, the two main determinants, PU and PEOU, are affected by external and context-dependent factors, these factors are: anxiety, content quality, experience,

facilitating conditions, individual innovativeness, perceived enjoyment, self-efficacy, service quality, social norm (Hakkak et al., 2013; Angelica et al., 2020). Ward(2017) added that external variables have also been cited as indirect factors affecting behavioral intention, which is also known as antecedents of PEOU and PU. Common ones include computer self-efficacy (EFF), subjective norms (SN), and facilitating conditions (FC). Another external factor is age, it was found to moderate the effect of teachers' perceived ease of use on perceived usefulness of educational video game(Sánchez-Mena et al., 2017).

Although technology is an important vehicle in education, and teachers are willing to adopt technology in teaching and learning, there are barriers that are hindering the adoption of technology in classrooms. First one, Attitudes: Some teachers are holding onto traditional methods of teaching and view technology as disruptive in the classroom. (Chisango et al., 2020). another one, Lack of technology training skills: some teachers are not sufficiently technologically oriented for them to adopt it in teaching and learning (Buabeng-Andoh, 2012). Also, technological infrastructure: Some schools do not have adequate ICT infrastructure and this results in learners not being exposed to technology. Finally, Connectivity: Some schools face challenges of electricity supply and internet connection that make it difficult for teachers to use ICTs always in teaching and learning (Chisango et al., 2020).

Smarkola (2011) demonstrate that the significant predictors of teachers' behavioral intention to use novel technology, which is personal and environment-related factors affect novel technology adoption was: performance expectancy, anxiety, attitude toward using technology, and facilitating conditions. Perceived ease of use is found to be rely heavily on facilitating conditions rather than computer self-efficacy (Wong, 2015). Sangeeta & Tandon (2020) Added that performance expectancy, and facilitating conditions had a positive impact on behavioral intention as well as attitude. While Noh et al.(2014) found that Computer self-efficacy and personal innovativeness in information technology are very important as predictors of readiness acceptance of technological innovation. Also, effort expectancy failed to drive teachers' adoption to online teaching, and the social influence had insignificant relationship with attitude but significant relationship with behavioral intention. While attitude had a significant impact on behavioral intention as well as actual use. Also applying e-learning includes some challenges, such as the lack of teacher's online teaching skills, online preparation for lesson plans because it takes too long, lack of adequate support from technical teams, pressure in the use of online educational platforms, and an inadequate ICT infrastructure. In addition to the lack of: appropriate e-learning policies, technical and educational competencies and the training of e-teachers and e-learners, e-learning theory to support the practice of e-learning, and sustainability issues, negative perceptions towards e-learning, quality issues, (Kibuku et al., 2020 & Soni, 2020). Alqahtani & Rajkhan (2020) confirmed that the most influencing factors in e-learning success during the Corona pandemic are technology management and support from the administration, increasing students 'awareness of using e-learning systems, and demanding a high level of information technology from trainers, students and educational institutions.

Methodology:

This study aims to investigate the impact of acceptance of using technology on twelve Palestinian teacher's practices in the corona pandemic in different directories which has common characteristics of Palestinian teachers. A qualitative approach was used for data collection and analysis. Semistructured interviews were used for data collection.

1. Participants:

Twelve school teachers; three males and 9 females, whom the researcher offered to participate in the research, and expressed a desire to do so. All had more than 10 years of

experience in teaching. In the findings, the teachers are referred to by the following fictive names:

- Jamila: BA in pure mathematics, MA in statistics. she has worked as a teacher for 17 years, taught grades 7-8 in the Salfit Education Directorate, taught for one year at Al-Dammam University in Saudi Arabia, and part-time lecturer at Al-Quds Open University.
- Amal: a mathematics teacher for 9-12 grades in the Directorate of Education in Ramallah and Al-Bireh. She has 14 years of teaching experience. She holds a pure mathematics BA from Birzeit University, and an educational qualification diploma from the National Training Institute of the Palestinian Ministry of Education.
- Samar: a technology teacher in the Ramallah and Al-Bireh Directorate of Education. She holds a diploma in educational training, the experience is 21 years. she has received various trainings.
- Rania: a mathematics teacher for the eleventh grades of Tawjihi in the Directorate of Education in South Hebron, 19 years of teaching experience, holder of a pure mathematics bachelor's degree from Hebron University, and a master's degree in applied mathematics from Palestine Polytechnic University, in 2019 she obtained a fellowship in education Professional from Harvard University in graduate studies, seeking to self-develop in education.
- Madeleine: a mathematic teacher, had BA & MA in Mathmatic education. secondary school teacher in the Ramallah and Al Bireh Education Directorate. 21 years teaching experience.
- Mai: BA in Geography and Political Science, a secondary school geography teacher in the Ramallah and Al-Bireh Education Directorate. 11 years teaching experience.
- Noha: BA degree in primary education, MA in educational administration, 19 years of experience, studying grades 1-4 in the Ramallah and Al-Bireh Education Directorate, specializing in first-grade education.
- Faten: BA in English Language, MA in Translation and Linguistics, English language teacher for the secondary level in the Directorate of Education in Ramallah and Al-Bireh. 21 years teaching experience.
- Ahmed: holds MA in mathematics, he is a mathematics teacher for the secondary stage in the Directorate of Education in Ramallah and Al-Bireh, with 13 years teaching experience.
- Raed: holds MA in physics, a high school physics teacher in Tulkarm Education Directorate, with 11 years teaching experience.
- Iman: holds a BA in English, is an English language teacher at the secondary level in the Directorate of Education in Ramallah and Al-Bireh, with 19 years of teaching experience.
- Waseem: holds a BA in Applied Mathematics and MA in Mathematics Teaching Methods and Arts, a teacher in the South Hebron Directorate for grades 10-12, 11 years teaching experience.

2. Interview procedure

The criteria determined the participants' selection is their willingness to participate in a long interview, Where I presented the idea of participation to teachers from different directorates, and they were among those whom I met by virtue of my work as a supervisor in the Palestinian Ministry of Education. Interviews were conducted in Arabic, using zoom and Microsoft teams after an agreement with the interviewees on the appropriate time for them, and lasted approximately 30-50 seconds. The interview protocol was sent to the participant one a day before the interview, first I made two interviews, then set question. The interviews were recorded and transcribed in Arabic.

3. Data analysis

A thematic analysis was used for data analysis. It is defined as a qualitative analytic method for coding, categorizing, analyzing, and reporting patterns (themes).

Finding

The findings represent the themes that emerged from the different readings of the semi-structured interviewees' as follows.

- perceived usefulness of using technology impact teaching practices in the corona pandemic

The Palestinian teachers agreed in the sample of the study that employing technology in education is very beneficial. As it is a helpful and supportive factor for the teacher; as Wassim said, "I see it as another image of the teacher", while Amal said, "It does not substitute for the teacher's explanation". The use of technology is attracting students and stimulating their motivation towards learning. It is also contributing in the development of teacher their teaching methods, so teachers Amal reported, "It is a change in the atmosphere of the class, and the teacher does not continue to teach.". Employing special programs for some subjects such as mathematics will help students in imagining some concepts, so Madeleine emphasized that: "The use of technology has a great impact as it contributes to student's imagination of concepts. there are topics if we present them using programs this facilitate students understanding of the concept". Ahmed said too: "There are concepts in mathematics. If I were to explain them without using the GeoGebra program, such as explaining concept in three-dimensional shapes, the use of GeoGebra brings the concept closer to students". Jamila reported that: "technology has a great impact on developing skills and diversifying the methods of the teacher" This was confirmed by May: "technology provides Visual images, vides, and help the teacher to break the breaks modularity if the class". The employment of simulation programs provides students with an opportunity to train, and this was confirmed by the teacher, Wasim, "It gives them more training opportunities through the simulation program"

To satisfy benefits of using technology, Noha reported: "The use of technology should be planned, studied and purposeful".

Angelica et al.(2020) defined the PU as the degree to which person belives that using aprticular technology will enhance their performance. Teachers' perceptions of usefulness of using technology have been reflected in their practices with regard to all aspects of the educational process during the Corona pandemic, as it has had an impact on their treatment with content, the communication ways with their students, teaching strategies, assessment methods, and the various applications they use.

Teachers have worked during the pandemic since its beginning to cover the educational content of the curricula they are studying, especially for the twelfth-grade students who will sit for a ministerial exam in this subject. Rania confirmed that, "At the beginning, I was frank, my concern was Tawjehi students. I'm teaching Tawjehi and the material was not finished., as it was the rest of the working month before the pandemic. I has moved directly to the Zoom platform, and began to complete the course with my students, and I was asked by the Directorate of Education to shoot videos of review sessions for Tawjehi students", and this is what Ahmed confirmed, "I am a tawjehi teacher, I tried to communicate with my students in any way to finish the course " This interest in covering content was not limited to twelfth grade students, but rather included other classes, considering these subjects are cumulative and foundational for students in the following grades, as Amal reported, "I worked so that the student should not miss any subject, since I am teaching mathematics, and it is a basic subject. It is essential for students to the upper grades, so I worked to complete the course with the students in any way ". Samar confirmed this by saying, "I worked to finish the subject material for grade 11 students especially, since it is a necessary subject for the twelfth grade".

In order to be able to complete the academic content, teachers began to communicate with their students using their previous experiences in employing technology in education. The simplest things were to communicate with students through closed Facebook groups or via Messenger. In the beginning, the matter was limited to sending students worksheets and test samples for training on them, especially for the twelfth-grade students. To be content enrichment materials for students to solve and send their solution to the teacher, and provided them with feedback. With the extension of the crisis, the teachers began preparing digital content through the PowerPoint program, filming PDF, videos and sending them to students in order to understand the material. Amal said: "I was preparing videos to explain the material through PowerPoint, where I used to prepare the slides and use the pen in PowerPoint to explain". Teachers began to search for other ways to communicate with students through the use of applications, which they can implement synchronous meeting. The teacher's attempts to communicate with their students had an impact on the teaching strategies. They employed the e-learning strategy by implementing synchronous meeting with students through various platforms such as Zoom, Microsoft Teams and Google Meet. This also included asynchronous meeting by employing the Teams platform and implementing virtual classes in Google and the e-School platform. Teachers provided students with assignments, students would solve them and send solutions to their teachers. Amal has reported, "I used to send the students the material and activities through the Google Class application, and the students would solve the activities and send me pictures of their solution. I used to correct and discuss the students through Messenger" She added: "Google Class is a million times better than Messenger, as it includes a schedule, appointments that facilitates the follow-up of students." The asynchronous meetings were not limited to providing students with assignments, but rather they provided students with explanatory videos prepared by teachers, and this is what Rania reported: "I was recording Videos for review sessions for twelfth grade students".

Some teachers adopted the flipped classroom strategy by providing students with videos related to the subject, then discussing specific tasks during the synchronous meeting on the Zoom and Teams platform. In addition to employing the project-based learning strategy in order to avoid indoctrination, Samar reported: "a theoretical explanation of the material is not useful, the material must be converted into projects. I employed the project -based learning strategy in teaching by assigning students to implement a practical project and the students' projects were discussed".

Some teachers of scientific disciplines such as mathematics and physics have adopted a simulation-based learning, by employing virtual programs and laboratories such as phet, crocodile, and GeoGebra. Ahmed confirmed this, "I used the GeoGebra program to explain the 3D concepts". And Jamila added "I used GeoGebra a lot to draw functions and teach students the concept of geometric transformations".

Teachers did not neglect the evaluation aspect during the pandemic period, as they assigned students to assignments through multiple platforms and provided students with feedback. The levels of tasks that the teachers built varied. Some of them assigned the students to tasks that included solving problems, and students were informed of the evaluation criteria. Samar explained that, saying: "I employed project- based learning by assigning students to implement a practical project such as a simple building, using environmental resources. Then the student's projects were discussed". And she was expelled "The evaluation method differed according to the subject. I used to do competitions. I told them we want to work on the networks, an explanatory video, and I explained the evaluation criteria for the students". Teachers worked on preparing electronic tests, and this is what Faten confirmed: "I used to employ electronic assessment methods through interactive worksheets and interactive and electronic tests".

The applications and platforms that teachers employed during the pandemic period varied according to the purpose of use. The purposes were: communicate with students, applying appropriate teaching strategies for the current stage, hold synchronous meetings, and providing students with assignments. These applications include Facebook, Zoom, Microsoft teams, Google tools, and E- School. As for building digital content, teachers have employed programs such as Bancy, Camtasia, Web tools. Also, simulation programs like: GeoGebra, Adobe Flash, Fleming PDF, and virtual labs such as Phet and Crocodile, and Java and platforms such as Edmodo, Linoit and Quizzes. Waseem reported that: "I do simulation models through Adobe Flash for some math concepts", and Faten said, "The wekelet app is a wonderful and interactive application so that I can add an image, a video, or a text". They used Google and Microsoft Forms to build electronic tests.

Some teachers paid attention to the psychological side of students, they tried the psychological side of students, due to isolation as a result of closure and social distancing, so Rania explained: "I was keen on working to empty myself for the students through implementing home projects and involving parents. I was not limited to teaching female student's mathematics". And Samar added "During the month of Ramadan, electronic competitions were conducted through web tools. The student's participation per day reached 900 participants. That is, I carried out non-systematic activities to support the psychological side of the student".

- Perceived ease of use of using technology impact teaching practices in the corona pandemic:

Hakkak et al.(2013) and Angelica et al.(2020) defined PEOU as the degree of the person believes that using the particular technology would be effort- free. Teachers believe that employing technology in education is easy if the teacher possesses technological skills. Jamila said: "According to the teacher's experience and how he uses these technological technologies", and Amal saw that: "It is easy to employ technology in education, perhaps because I have technological skills". Mai confirmed that: "In order to be able to use the applications, he needs to have the basics of dealing with the computer". In addition to the teacher's desire and motivation to employ technology, Iman reported: "Teaching technology is easy for anyone who wants, I taught a 59-year-old teacher", and Rania added that: "The employment of technology in education requires conviction, effort and double faith". And Faten emphasized that saying: "The employment of technology in education is easy, if the teacher wants to do so ". Likewise, employing technology is easy if it is planned and focused on priorities, as Samar said: "It needs planning. So, we focus on priorities. The most important thing is to focus on what is required, we do not want to use several programs and counted things". Waseem combined motivation and possession of skills by saying: "It depends on the teacher's capabilities and characteristics. If this teacher has the competencies, desire and motivation, then employing technology will be easy". But Raed said that: "the use of technology requires teacher efforts to prepare, when I prepare for the first time, Preparing the synchronous electronic class is difficult. when I prepare the class, it takes me three to four hours to prepare and design the PowerPoint, but I get tired for one time".

Teachers have worked to develop themselves in the field of technology and computer applications through self-learning, Iman reported that, saying: "I will search if I have any difficulty to implement". And Waseem confirmed that, saying: "I'm currently learning programming languages in order to design simulation applications to employ it in distance education". while Amani said: "I explicitly, ask Google". Also, they ask their colleagues for help in using applications, that what Iman reported: "I was communicated with colleagues who have a Microsoft Palestine expert certificate to inquire from them about some of the things, that I have a problem with applying them". They also used to attend courses and

workshops that are offered by various parties online. And the teachers were committed to the training provided by the Palestinian Ministry of Education on designing distance education, computer applications and the TEAMS platform.

- The future usage behavior for employing technology in education

PU and PEOU create a favorable behavioral intention toward using technology that consequently affects its self-reported implementation (Hakkak et al., 2013). Teachers confirmed the need to continue using technology to achieve readiness in the event of an emergency by students and teachers. This is what Jamila confirmed: "I will continue to employ technology in education after the end of the pandemic, and I will continue to hold electronic meetings, even weekly for my students, so that our students remain ready when any emergency occurs". And Samar confirmed that: "I am continuing to use technology and electronic meetings between teachers and students, so that it becomes a pattern for teachers and students, and a normal matter for parents".

Some teachers see the need for schools to move towards e-learning and the need to develop possessing technological skills. So, Rania said: "The base of education will be technology and its possession". Teachers also stated that they would continue their work on developing themselves, so Amal assured: "I will continue to search for everything new in technology and applications related to my specialization". Teachers assert the need to integrate e-learning with the face to face learning through the continuity by holding weekly meetings for students, and using platforms to provide them with tasks. And to be supportive of face to face education, as Iman said: "To continue using technology that supports face education". Technology is a necessity make education an effective process, Mai said: "To make education an interactive and creative process, technology must be complemented of the educational process". Faten emphasized continuity, by saying: "We learned something new, that we are supposed to continue".

- External factors influence the acceptance of using technologies in Palestinian teachers' practices in corona pandemic:

There are multiple factors that affected teacher's acceptance of using technology in education during the pandemic. Which was a hindrance for some and a motivation for others. This is what Rania confirmed, saying: "Sometimes it affected negatively and positively and it made me look for alternative solutions". These factors fall into two categories: physical factors and human factors. The physical factors that affected teacher's acceptance to employ technology in education included: infrastructure, motivation, availability of educational platforms, applications, and time. As for the human factors, they are represented in the development of the capabilities of teachers and students, teacher's anxiety, preparation and training for teachers, and acceptance of parents and students. As well as the policies of the Ministry of Education.

Physical factors have affected teacher's acceptance of technology varying according to school, student environments and the capabilities of teachers themselves to own technological tools. This is confirmed by Raed: "For example, in our school, out of 24 teachers, there are only five teachers who have personal computers, and they use it in designing education and in electronic preparation". Some schools provided computers for teachers, Jamila said, "The principal worked to provide a computer for each teacher". Some students and teachers have suffered from the availability of internet service and computers for them, and there are some schools that are not equipped with computers, internet and display devices. Rania said: "The percentage of students who own computers was 25% and the percentage of students who own smart phones is 95%. As a teacher, I have children in Schools and universities. I have only one computer and we have 4 smart phones". Noha

added, "There are many colleagues who do not have access to the Internet due to the salary crisis". This has an impact on the quality of e-learning, as Madeleine said: "We can say that the infrastructure does not serve e-learning". The lack of educational platforms at the beginning of the pandemic affected the acceptance of teachers of technology using, as they initially resorted to holding limited free synchronous meetings through zoom, and then the Palestinian Ministry of Education approved the Microsoft Teams platform, and free accounts were created for each student and teacher. This is a need demanded by teachers, Waseem said: "I hope the Ministry of Education will provide the programs that teachers use for free".

Also, the time factor had an important role in influencing teacher's acceptance of technology. Teachers were facing a problem in organizing the appropriate time for them and their students to communicate, and holding synchronous meetings at the beginning. So, Samar said: "The time was influential factor, I have a family, when I communicate with my students, scribbling time, will kill desire, what is the time that suits me and my students". Some teachers talked about the motivation factor. Samar said: "I'm a teacher employing e-learning and exert effort, but I was treated like others". And she added: "These factors have weakened her determination and enthusiasm at times, but I continued on the part of a professional and professional honesty for the sake of the students". There was encouragement from the educational supervisors and school directors for teachers to employ technology, so Jamila confirmed that, saying, "My supervisor has always encouraged me to use technology".

The teachers reported that the human factors that influenced their acceptance of technology employment, these factors were represented in the policy of the Palestinian Ministry of Education, as there was no clear policy for education in emergencies before. Mai described the ministry's policy: "The ministry is swinging and wobbly, unfortunately ... it was not previously planned or alternative emergency plans. ". but Waseem said: "the ministry had previously provided some training courses that included the use of technology, and encouraged teachers to employ technology in education through deliberate initiatives". The Ministry's policy was reflected on the schools, that began planning and training for the administration of education in light of the emergency period, and there are schools that carried out additional training for teachers. The ministry set out to work on developing teacher's capabilities and providing educational platforms. Teachers were trained to design distance education, use some computer applications, and provide educational platforms. In addition to broadcasting video lessons through the Palestine Educational Channel. Some teachers criticized this training, Samar said: "This training was late and it was not useful for her because I possess these skills. I would have preferred that the training be conducted at levels."

Teachers' anxiety has varied in their acceptance of the technology using in education. The reasons for this concern varied, including concern about disconnect of internet or electricity, the failure of teachers and students to use computer applications. Amal said "I was sometimes anxious because the technology was not easy to use by students". The abilities of students and teachers in the use of technology varied, for students according to the age group, as high school students had awareness and acceptance of using technology in education and possessing skills. Some teachers had trained his students on using these applications. This is what Amal said, "I was training them to use the application". Some schools also conducted training for students on using educational platforms during the beginning of the new school year, and some teachers found that students were not proficient in using educational platforms such as E-School, and could not send assignments to teachers, so they trained them. As for the parents, some of them accepted the employment of distance e-learning, while others preferred the face to face education, and teachers attributed that to the weak financial resources for the family, this is what Samar confirmed by saying: "The infrastructure and availability of computer equipment was one of the

influencing factors. As for students, they have an acceptance for that. Attendance is 60% during synchronous meetings".

Discussion

This study aimed to study the impact of Palestinian teacher's acceptance of using technology on their teaching practices in light of the corona pandemic, Ali (2020) suggested that staff members should use technology and technological tools to enhance learning especially during these exceptional times. The Palestinian teachers in the sample of the study agreed that employing technology in education is very beneficial. As it is a helpful and supportive factor for the teacher. Also, it is attracting students and stimulating their motivation towards learning. Maslin et al.(2010) emphasized that, the use of technology has made the process of teaching and learning all the more enjoyable. And Sangeeta & Tandon (2020) found that engaging students and indulging them in teaching-learning progression. it is also contributing in the development of teacher their teaching methods. And with (Onyema & Deborah, 2019) that, increasing use of technology in education has altered teacher's styles from the traditional approach that often indoctrinates knowledge to a more flexible approach where they act more as facilitators, mentors, and motivators to inspire students to participate and learn. Employing special programs for some subjects such as mathematics will help students in imagining some concepts, and provides students with an opportunity to train. To satisfy benefits of using technology should be planned, studied and purposeful.

Teachers' perceptions of usefulness of using technology have been reflected in their practices with regard to all aspects of the educational process during the Corona pandemic, as it has had an impact on their treatment with content, the communication ways with their students, teaching strategies, assessment methods, and the various applications they use. Which agree with (Onyema et al., 2020) founds, technology enhances teaching and learning experiences, content creation, course sharing, assessments, and feedback. also, the knowledge of technology increases educators' and students' interest, competence, confidence, creativity, employability and output, and also prepares them for the future.

Teachers have started from the begging of the pandemic since its beginning to cover the educational content of the curricula they are studying, especially for the twelfth-grade students who will sit for a ministerial exam in this subject. Also, this interest in covering content was not limited to twelfth grade students, but rather included other classes, considering these subjects are cumulative and foundational for following grades. To achieve the complete the academic content, teachers began to communicate with their students using their previous experiences in employing technology in education. They were started to communicate with students through closed Facebook groups or via Messenger, and sending worksheets and test samples for training on them. With the extension of the crisis, the teachers began preparing digital content through the PowerPoint program, filming PDF, videos and sending them to students in order to understand the material. Teachers started to search for other ways to communicate with students through the use of applications, which they can implement synchronous meeting. As Senthilkumar & Kumari (2020) & Sahu (2020) found that schools, colleges and universities are moved or moving to online platforms.

The teacher's attempts to communicate with their students had an impact on the teaching strategies. They employed the e-learning strategy by implementing synchronous meeting with students through various platforms such as Zoom, Microsoft Teams and Google Meet. This also included asynchronous meeting by employing the Teams platform and implementing virtual classes in Google and the e-School platform. And this agree with (Yulia, 2020) founds that the educators should to use variety of strategies to improve online

learning. By doing so, it is hoped that the process of teaching and learning by using online course will run smoothly. Also (Onyema et al. (2020) confirmed that, they are motivated to go online, so teachers and students are exposed to new platforms such as Microsoft teams, Google hangouts, Zoom and others. In some cases effective Peers', instructors' attitude and availability may promote application like google meet as a tool for learning through the pandemic period (Al-Marroof et al., 2020). Teachers provided students with assignments, students would solve them and send solutions to their teachers. The asynchronous meetings were not limited to providing students with assignments, but rather they provided students with explanatory videos prepared by teachers. Also teachers employ flipped classroom strategy by providing students with videos related to the subject, then discussing specific tasks during the synchronous meeting on the Zoom and Teams platform. Sánchez-Mena et al.(2017) emphasized that perceived usefulness influences in a direct and positive way teacher's intention to use educational video games. In addition to employing the project-based learning strategy in order achieve active learning.

Some teachers have adopted a simulation-based learning, by employing virtual programs and laboratories such as phet, crocodile, and GeoGebra. Teachers did not neglect the evaluation aspect during the pandemic period, as they assigned students to assignments through multiple platforms and provided students with feedback. The levels of tasks that the teachers built varied. Teachers worked on preparing electronic tests. The applications and platforms that teachers employed during the pandemic period varied according to the purpose of use. The purposes were: communicate with students, applying appropriate teaching strategies for the current stage, hold synchronous meetings, and providing students with assignments. These applications include Facebook, Zoom, Microsoft teams, Google tools, and E- School. As for building digital content, teachers have employed programs such as Bancy, Camtasia, Web tools. Also, simulation programs like: GeoGebra, Adobe Flash, Fleming PDF, and virtual labs such as Phet and Crocodile, and Java and platforms such as Edmodo, Linoit and Quizzes. They used Google and Microsoft Forms to build electronic tests. Some teachers paid attention to the psychological side of students, they tried the psychological side of students, due to isolation as a result of closure and social distancing.

The adoption of educational technology in teaching depends on how well a teacher accepts it (Wong, 2015). Teachers believe that employing technology in education is easy if the teacher possesses technological skills and motivation to employ technology. Likewise, employing technology is easy if it is planned and focused on priorities. (Soni, 2020) Also applying e-learning includes some challenges, such as the lack of teacher's online teaching skills, online preparation for lesson plans. So, Teachers have worked to develop themselves in the field of technology and computer applications through self-learning. As Onyema et al.(2020) recommended, this imposes the need for all educational institutions, teachers and learners to adopt technology and improve their digital skills in line with emerging global trends and realities in education. Also, they ask their colleagues for help in using applications, and used to attend courses and workshops that are offered by various parties online. Khlaif et al.(2020)found that, middle school teachers' response to school closures in developing countries in times of crisis including Palestine; developed their skills to use emerging technologies and design suitable digital content.

Teachers confirmed the need to continue using technology to achieve readiness in the event of an emergency by students and teachers. Wong (2015) found that pre service teachers had a positive attitude towards the use of educational technology, and perceived usefulness is more influential than perceived ease of use. And Tarhini et al. (2015) found that perceived ease of use was not a significant predictor of attitude towards use of technology in education. While the participant, saw the need for schools to move towards e-learning and the need to develop possessing technological skills. Tarhini et al. (2015) found that

perceived ease of use was not a significant predictor of attitude towards use of technology in education

Teachers assert the need to integrate e-learning with the face to face learning through the continuity by holding weekly meetings for students, and using platforms to provide them with tasks. And to be supportive of face to face education. And this agree with Kaur et al. (2020) founds ,that electronic education during the pandemic can supplement the process of present education, but it cannot be a substitute for the face to face education.

There are multiple factors that affected teacher's acceptance of using technology in education during the pandemic. These factors fall into two categories: physical factors and human factors. The physical factors that affected teacher's acceptance to employ technology in education included: infrastructure, motivation, availability of educational platforms, applications, and time. As for the human factors, they are represented in the development of the capabilities of teachers and students, teacher's anxiety, preparation and training for teachers, and acceptance of parents and students. As well as the policies of the Ministry of Education. And success of online education depends on factors including, good internet connections, learning software, digital skills, Online education platforms, availability and access to technology (Onyema et al., 2020). On the other hand, (Baticulon et al., 2020) classify barriers into five categories: technological, individual, local, institutional, and societal barriers.

Physical factors have affected teacher's acceptance of technology varying according to school, student environments and the capabilities of teachers themselves to own technological tools. Some students and teachers have suffered from the availability of internet service and computers for them, and there are some schools have weak infrastructures for using technology. These factors impact on the quality of e-learning. The lack of educational platforms at the beginning of the pandemic affected the acceptance of teachers of technology using, then the Palestinian Ministry of Education approved the Microsoft Teams platform, and free accounts were created for each student and teacher. Governments need to ensure the availability of reliable communication tools, high-quality digital academic expertise, and promote technology-supported learning for students to bridge the inequalities that arose in the education system before and after the pandemic (Mishra et al., 2020)

The teachers reported that the human factors that influenced their acceptance of technology employment, these factors were represented in the policy of the Palestinian Ministry of Education, as there was no clear policy for education in emergencies before, and there are schools that carried out additional training for teachers and student about Teams platform. So Faculty members should embrace technology and pay careful attention to student experiences to make the learning rich (Sahu, 2020).

Conclusion

The research findings about the impact of Palestinian teacher's acceptance of using technology on their teaching practices in light of the corona pandemic shows that, Teacher's perception of employing technology is useful in education. These perceptions of usefulness of using technology have been reflected in their practices in all aspect of the educational process: content, ways of communication with students, teaching strategies, assessment methods, and the various applications they used. Also employing technology in education is easy, if the teacher possesses the technological skills. They worked to develop themselves in the field of technology and computer applications through self-learning and enrollment in the online workshops and courses, then applying what they had learned in their practice while the fluctuation in school attendance. Teachers were continuing to develop themselves, and they expressed that they would continue to employ technology after the

pandemic. The teacher's acceptance of employing technology in education has been affected by physical and human factors. These factors fall into two categories: physical factors and human factors. The physical factors that affected teacher's acceptance to employ technology in education included: infrastructure, motivation, availability of educational platforms, applications, and time. As for the human factors, they are represented in the development of the capabilities of teachers and students, teacher's anxiety, preparation and training for teachers, and acceptance of parents and students. As well as the policies of the Ministry of Education.

The researcher concluded that Palestinian's teachers have the ability for self-learning and to build professional learning societies. The Palestinian teacher became convinced of the importance of possessing technological skills and employing them in education, and he was able to penetrate digital knowledge and with rooms of it what he wanted. I believe that the Palestinian educational system, in light of this pandemic, has a good platform to start from in the digital transformation of the educational system.

It is recommended that establishing an integrated plan by the Ministry of Education to include human and physical resources in order to: maintain continuity, achieve readiness for emergencies, occurs, and to keep pace with the digital transformation in education systems. so that work is done on training teachers, preparing infrastructure and developing curricula by strengthening them in activities that employ technology so that we can employ it remotely. And Teachers take responsibility for developing themselves. Also Conducting future studies aimed in the responses of students and parents towards employing technology in education in light of the pandemic.

That technology continues to be supportive and complementary to face education.

Developing an action plan by the Ministry of Education that includes human and material cadres in order to maintain continuity, prepare for emergencies in the future and to keep pace with the digital transformation in education systems.

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