

Evaluating Distance Education at Jerusalem Schools during COVID-19 Pandemic from the Point of View of Students with Physical Disabilities

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Abstract

This study aimed at identifying the evaluation of students with physical disabilities of distance education in Jerusalem schools during the COVID-19 pandemic period. The study sample consisted of (54) students suffering from a physical disability, selected from special education schools and public schools in Jerusalem in the scholastic year 2020/2021. A questionnaire was disseminated to them which consisted of (43) items distributed into five areas: means and techniques, content, interaction, distance learning obstacles, and evaluation. The results of the study revealed that the satisfaction of students with physical disabilities in Jerusalem with regard to distance education in light of the Corona pandemic was at a moderate degree, and that there are no significant differences in the level of students with physical disability satisfaction with distance education in light of the Corona pandemic due to the variable of gender, school or program used in education. The study recommended following reliable evaluation methods in distance education.

Keywords: Distance Education; Jerusalem Schools; COVID-19; Students with physical disabilities

Introduction

The tremendous development in means of communication and contact has created a kind of education called distance education “e-learning”. All the elements of this kind of education differ completely from the elements of face-to-face education, as it heavily relies on the internet and satellites. Distance education is carried out through educational means that are accompanied by changes in the education nature. It has become evident that this kind of education has a great significance for students to continue their learning and for the continuation of the educational process at times of crises.

Sunbullah (2017) [1] confirms that in general, distance education has proved successful in teaching students without disabilities as well as students with disabilities. Baljoun (2015) [2] pointed out that there is a great importance in using educational and technological means in the field of teaching students with disabilities. It is unquestionable that all students with disabilities require the support and assistance of teachers and parents in the educational process. In addition, all students with disabilities, especially those with physical disabilities, need care, as they encounter difficulties in mobility, movement and in the use of distance education methods. This what makes it inevitable for teachers and parents to provide them with support and assistance?

COVID-19 pandemic has an impact on education at the schools of Jerusalem, which necessitated a sudden shift into distance education; in response to the instructions emanating from the World Health Organization (WHO) to limit the outbreak of the virus. However, the response of ordinary students to distance education, and their adaptation to its technological aids, differs from that of students with disabilities. The results of a study carried out by Massengale & Vasquez 2016 [3] showed that students with disabilities suffer from some challenges that prevent them from following up distance learning including the following: access to the Internet, the failure to place a brief summary of distance education, the nature of devices that should be designed in a way that fits with the disability, and the scarcity of training for the people with disabilities.

In addition, during distance education, students with physical disabilities encounter some challenges and obstacles. When comparing the achievement of students without physical disabilities to the achievement of students with physical disabilities as a result of distance education, we find that the achievement of students without physical disabilities is higher, since the devices, networks and programs available for distance education, are originally designed for students without physical disabilities, and so they are more adaptive to the distance education aids than students with physical disabilities (Richardson, 2016) [4].

The difficulties that students with physical disabilities encounter in distance learning at Jerusalem schools may be plentiful and varied, and so, they need to be investigated in order to overcome them. In addition, students with physical disabilities are a group of people that can never be neglected. Based on what has been previously mentioned, this study aims at evaluating distance education at Jerusalem schools during COVID-19 pandemic period from the point of view of students with physical disabilities.

Study Problem

Jerusalem schools are considered an integral part of Palestine. Like the rest of the world, Palestine has been exposed to COVID-19 pandemic in the mid of the second term of the scholastic year 2019/2020. This necessitated a shift from face-to-face education into distance education, in response to the instructions of the World Health Organization. Jerusalem schools have responded to such instructions, as these schools contain a good number of students with physical disabilities, and the experience of distance education being an unplanned experience for them, their teachers and their parents.

The studies that addressed distant education for students with physical disabilities are various. The results of a study carried out by Lersilp & Lersilp (2019) [5] pointed out that students with disabilities suffer from some problems related to text messaging via the means of social media and chatting at face-to-face chatting application; means on which distance education is based. The results of a study carried out by Mikotajewska & Mikotajewska (2018) [6] showed that one of the most important challenges that people with physical disabilities encounter in distance education is the failure to adapt the technologies means to the nature of their mobility impairment.

Being specialities in special education, the two researchers observed cases of complaints, confusion and some uncertainty about the feasibility of distance education among students with physical disabilities, their parents and their teachers. Therefore, the two researchers sought to carry out a study to evaluate distance education for students with physical disabilities from their point of view and their parents' point of view. The study problem lies in answering the following questions:

- To what extent are students with physical disabilities satisfied with online distance education during COVID-19 pandemic?
- Are there statistically significant differences at the level of ($\alpha \leq 0.05$) in means of the level of students with physical disabilities satisfaction with online distance education during COVID-19 pandemic that can be attributed to the variables of (gender, school and program used in education)?

Aims

1. Identify the reality of distance education at Jerusalem schools during COVID-19 pandemic from the point of view of students with physical disabilities.
2. Identify the satisfaction of students with physical disabilities of online distance education during COVID-19 pandemic.
3. Identify the difference in the points of view of students with physical disabilities (study subjects) about the reality of distance education at Jerusalem schools during Covid-19 pandemic according to the variables of (gender, school and program used in education).

Study Significance

Theoretical Significance: This study provides additional knowledge and information about distance education, through presenting the experience of students with physical disabilities at Jerusalem schools, as well as demonstration of the challenges they encountered when implementing this kind of education. This study also addressed topics related to physical disabilities from which teachers, parents and students can benefit.

Applied Significance: The study results and recommendations may help teachers and parents in following the appropriate steps to carry out distance education for students with special needs and how to overcome the obstacles and challenges that hinder the success of such kind of education among them. This study also helps those concerned with physical disability, in particular, in terms of providing feedback about distance education for this group of people. This study may generate new research in the field of distance education among students with disabilities, as this study can be applied to other disabilities other than physical disabilities such as visual or hearing disabilities.

Study Limitations

Human Limitations: The study was limited to 54 male and female students with physical disabilities.

Time Limitations: The study was applied in the second term of the academic year 2020/2021.

Place Limitations: The study was implemented at Jerusalem public schools and special education schools.

Study Terminology and Procedural Definitions

Physical Disabilities: A wide range of disabilities and disorders that have an impact in limiting the movement of those affected by them as they impact their organs, muscles, nerves or motor skills (Sharman, 2015) [7].

Physically Disabled Person: An individual suffering from physical disorder that has an impact on the movement of his/her limbs, or the individual who suffers from different kinds of paralysis (cerebral palsy, hemiplegia, quadriplegia, or polynomalities) or who suffers from deformities of the hands or feet, or amputations of one of his/her limbs, and he may use prosthetic devices (Ruqban, al-Habashi, al-Nashshar, 2016) [8].

In this study, a physically disabled student is defined as the student who studies at Jerusalem public schools and special education schools, and who suffers from a disability which forms an obstacle that hinders students from performing their normal physical and motor functions, thus calling for providing specialized services for them.

Distance Education: The process of carrying knowledge to the learner at the learner's place of residence or work instead of the learner's transfer to the educational institution. Distance education is based on the delivery of knowledge, skills and educational materials to the learner through different technical media and methods, where the learner is far away or detached from the teacher. In this regard, technology is used in order to fill the gap between the two parties in a way that mimics the face-to-face contact (UNESCO, 2020) [9].

Procedurally, distance education is defined in this study as: the education of students with physical disabilities during COVID-19 pandemic by using the internet, WhatsApp and Zoom programs, where students receive educational services at their homes from the teachers of Jerusalem public schools and special education schools. The level of distance education was measured using a questionnaire that was prepared for the purposes of this study.

Theoretical Framework

The history of distance education dates back to the 19th century, with the beginnings of the development of means of communication. However, the communications and technology revolution made distance education a dominant form of education, and increased its popularity and use in the 21st century, especially at times of crises. Distance education took different forms, depending on the time in which it was developed, as technologies and teaching methods in this era have affected how distance education is viewed and practiced to make room for different generations of distance education. In addition, distinct educational concepts, methods and practices of distance education have also emerged throughout the journey that distance education has crossed since the 19th century (Saykili, 2018) [10].

It used to be thought that smart phones, computers, and internet networks were a technology specialized for communication, chatting, and access to forums. Nevertheless, the educational institutions made use of this technology by adapting it to preserve education in some circumstances. Hence, site dedicated to schools and universities have been created, and smartphones, computers and the internet have begun to be considered as educational tools and a main source of self-learning and education (Koumi,2006) [11].

Distance education is a kind of online education presented by using modern electronic technologies to approach whatever is concerned with the educational materials out of the borders of a traditional classroom. The most common terms used to express and describe distance education are: e-learning, and computerized e-learning. Distance education takes the form of an online interactive course, in which students can interact with teachers, and receive tasks and assignments (Hetsevich, 2017) [12].

Basilaia & Kvavadze (2020) [13] look at e-learning as an organized process that aims to achieve educational outcomes using technologies that provide sound, image, movies and interaction between the learner and the content and educational activities at a time that is appropriate for the learner.

Distance education provides many benefits and advantages that make it outperform traditional educational methods. Ferreiman (2014) [14] mentioned them as follows: Distance education reduces costs, as it saves the costs of building new classrooms for educational courses and seminars. In addition, distance education makes it unnecessary for students to go to schools and educational centers, thus reducing transportation costs. Distance education is available for all individuals of different age groups, where they can benefit from online courses and acquire new skills and experiences away from the traditional school restrictions. Distance education is flexible, being not linked to a specific time, and so individuals can learn at the time that suits them most. Distance education increases learning and reduces waste of time, as futile interactions between students are cancelled, through reducing chatting, and excessive questions that waste time. In this way, the amount of what a student learns increases without any disruptions or obstacles. Distance education makes education more structured and neutral, in addition to evaluating tests in a neutral and fair way, and following up the achievements of each student accurately and Distance education is environmentally friendly, as there is no use of papers and pens that may harm the environment when disposing of them.

Having many advantages for distance education does not mean that it is void of disadvantages. Hetsevich 2017 [12], has identified the following disadvantages of distance education: Distance education greatly relies on technology. Although distance education is available to all individuals, many of them may not have PCs or a network access to online learning. Distance education is somewhat subjective which raise a difficulty with motivation, since some people may find it difficult to motivate themselves, or organize their work on their own and Distance education causes isolation and loneliness among students because students deal with their PCs instead of directly communicating and interacting with each other.

For students without disabilities, distance education may cause some problems that they can overcome, while it causes a great challenge for students with disabilities as disability is accompanied with difficulties and challenges. Because of that, the number of students with disabilities who register in online training courses is too small, and their disability is too limited to define the amount and quality of procedures to be adopted to support them. Therefore, those who work in distance education have to construct the learning environments that are appropriate to the needs of students with disabilities. (Rodrigo, Tabuenca, Rodrigo, Tabuenca, 2020) [15].

Physical disability constitutes a great challenge to those suffering from it as it generally impacts school achievement in a way or another. A physically disabled person is an individual whose movement and vital activity are impaired because of a dysfunction, deformity, disability or disease that affects his/her muscles, joints or bones in a way that limits his/her normal function. Disability may extend to include voluntary and involuntary muscles. A movement originates from the contraction of one muscle and the relaxation of the other muscle that is corresponding to it. This means is, that it originates from the difference existing between the forces of attraction and push (Muhammad, 2012) [16].

Al-Obaid & Shaye 2014 [17], define physically disabled people as the people for whom a disability deprives them from the ability to normally perform their physical and motor functions which requires providing specialized service for them.

Based on the previous definitions, we find that physical disability may constitute difficulties in practicing some life skills; therefore, students with physical disabilities encounter challenges and hardships during distance education. When comparing the achievement of students without physical disabilities to the achievement of students with physical disabilities as a result of distance education, we find that the achievement of students without physical disabilities is higher, since the devices, networks and programs available for distance education, are originally designed for students without physical disabilities, and so they are more adaptive to the distance education aids than students with physical disabilities (Richardson, 2014) [18].

Despite the difficulties that students with physical disabilities encounter while receiving distance education; COVID-19 pandemic did not provide any other alternative for the education of this group of students. The novel coronavirus disease 2019 (COVID-19), originated in Wuhan city of China. The rapid spread of COVID-19 all over the world has sent schools and universities into lockdown, which had an impact on education. The universities and schools canceled all campus educational activities, as well as taking intensive measures to protect all students and staff members from the highly infectious disease, as well as getting into switching to distance education or (e-learning). However, all these measures have affected students' mental health, in terms of how information is received, and in restricting some teaching strategies that require direct social interaction (Sahu, 2020) [19].

What raises concern is that COVID-19 pandemic has suddenly placed a great challenge on the educational systems, without giving the educational institutions adequate time to plan, besides suspension of direct interaction between teachers and students and forcing them to search for alternatives for teaching and learning. Therefore, the new teaching methods relied on raising students' independence and on making parents bear the responsibility for educating their children. In addition, the additional homework sent by teachers has increased the burden of teachers, parents and students. Educators hastened to provide e-learning platforms or databases, as a rapid response to the interruption of education at the educational institutions (Yong & Draissi, 2020) [20].

As well as Palestine territories exposed to COVID-19 pandemic suddenly, and it hindered students with physical disabilities to learn face to face while their number can't be ignored. According to the expanded definition of the World Health Organization and the Washington Group for Disability Statistics, the prevalence of disability in the Palestinian territories is about 7%, and it is the same in both the West Bank and the Gaza Strip. According to the narrow definition, this percentage in the Palestinian territories was 2.7%. 2.9% in the West Bank and 2.4% in the Gaza Strip. It reached 2.9% among males compared to 2.5% among females in the Palestinian Territories (Palestinian Central Bureau of Statistics, 2020) [21].

Yulia 2020 [22], considers the possibility of making use of the experience of distance education during COVID-19 pandemic, an experience rich in ideas, strategies, devices and methods that supported distance education. Nevertheless, the education of students with disabilities was negatively affected by distance education, because from the beginning, the exerted efforts were directed mostly to compensate for the educational loss resulting from the disruption of students without disabilities from schools at the onset of COVID-19 pandemic, without being directed to adapt distance education to students with disabilities.

There are some indications showing that distance education may not effectively achieve educational goals, the same that face-to-face education does. Evaluation of distance education is less reliable, and the quality standards of education are different and low in distance education, but distance education becomes inevitable in emergency situations (Hodges, Moore, Lokee, Tust & Bond, 2020) [23].

Basilaia & Kvavadze (2020) [13] confirm that the experience of shift from education at schools into online learning during the outbreak of COVID-19 pandemic in Georgia was successful. The system and skills acquired by teachers, students and school administration in the post-epidemic period can be beneficial in different situations, such as with those with special needs who need additional hours.

From what has been previously mentioned, there are advantages and disadvantages to distance education, as well as having difficulties and obstacles to distance education among students with disabilities. The current study aims to evaluate distance education at Jerusalem schools during COVID-19 pandemic from the point of view of students with physical disabilities.

Previous Studies

Some of the studies that addressed variables similar to the variables of this study have been viewed. These studies are arranged chronologically from the oldest to the newest as follows:

Mikołajewska & Mikołajewski (2011) [24] conducted a study aimed at investigating the extent to which the available opportunities are being exploited, including e-learning as a part of the concept of the disabled person's integrated IT environment. The study emphasized that the number of disabled people increased, According to the World Health Organization (WHO); there are about 650 million people with disabilities worldwide. The main factor can help them to overcome their own limitations is education. The Polish Government Plenipotentiary for Disabled People showed in 2009 that only 5.9% of disabled Poles had a degree, and only 21.4% were employed, which reflects the marginalization of the disabled from the rest of Polish society. While Distance learning may offer hope for them.

Nganji (2012) [25] study referred to a lot of difficulties that face disabled students in higher education when they try to accessing learning resources when e-learning systems are inaccessible, and try to identify some disabilities encountered in higher education, the result unveiled that as most e-learning systems are not designed favourably to meet the needs of disabled students, the recommendations of disabled students on designing disability-aware systems were presented and It is hoped that designers and developers of e-learning systems would turn to disabled students' recommendations in order to design more inclusive systems.

Richardson (2016) [4] carried out a study that aimed to identify the advantages of face-to-face education versus online educational support in distance education in terms of priorities, performance and pass rates among students with disabilities. This study examined the experiment of students taking the same courses in human sciences through distance education, when the traditional educational support (using limited face-to-face sessions along with some telephone and e-mail contact) or online (using a combination of computer through conferences and e-mail). The results showed that considering the choice between face-to-face educational supports versus online educational support, both students with disabilities and students without disabilities selected online support instead of direct support. There were no statistically significant differences in terms of the reasons which the students with and students without disabilities presented for selecting online support, instead of face-to-face support, although there was a tendency among students with disabilities to indicate that a disability or chronic illness is a reason for selecting online support. Both students with disabilities and students without disabilities obtained similar grades in their courses, and both students with disabilities and students without disabilities were similarly equal in passing their courses, regardless whether they had selected the direct support or the online support. However, there was tendency among students with disabilities to achieve lower success rate than nondisabled students who had received face-to face support, while the success rate of students who had received online support was higher than that of nondisabled students.

Naumova, Vytovtova, Mitiukov, & Zulfugarzade, 2017 [26] carried out a study that aimed to develop a model of distant learning educational methods for students with disabilities using e-learning methodologies. The study relied on the results of the studies conducted at Udmurt State University with the help of the Russian Humanitarian Scientific Fund (project 14-16-18004). E-learning educational methods for the students with special educational needs were developed, approved and implemented in educational process. Features of training and educational activity motivation were revealed, as well as revealing the attention span, time history of the efficiency of work and personal relations, properties distinguishing logical thinking and the coping behavior. Integrated educational methods of training were developed to match the features of students with disability, in addition to using the technology that includes both traditional and innovative methods of training. It was proved that applying active methods of training in the educational process increases educational motivation and improves the personal relations that positively influence the process of professional adaptation in modern society.

Mikotajewska & Mikotajewska 2018 [6], carried out a study that aimed to investigate the effect of distance education on the education of students with physical disabilities, since education is a factor that helps them to overcome many problems. The study sample consisted of (7) centres for the rehabilitation of physically disabled students, and examined the distance learning programs that were adopted for educating them. The study revealed that the nature of the programs and the nature of the physical disability play a decisive role in educating students with physical disabilities, and that the programs and devices used in distance education should vary according to the type of physical disability.

A qualitative study was conducted by Rice, 2018 [27], to uncover strategies course designers adopted in order to meet accessibility standards and promote literacies online for all students, especially students with disabilities. Three strategies emerged as findings: (1) composing clear expressions of learning objectives, (2) promoting personalized and contextualized learning, and (3) planning for visual and audio representation of concepts. The course designers showed understanding of students' ability to access the internet and learning. They were less adept at addressing the interplay between literacies and accessibility features that promote literacies.

Pappas *et al*, 2018 [28], carried out a study that aimed to analyse the cognitive characteristics of deaf adults, as well as the way they learn better, in order to develop an innovative and user-friendly e-learning platform, which will be adapted to the educational needs of the target group. The study sample consisted of 53 deaf or hard-of-hearing adults. The results showed that the participants prefer the continuous content of e-learning modules, which offer comprehension questions during the sessions, as well as practice exercises after their completion. Furthermore, participants had positive attitudes towards the use of special graphics and explanatory video clips.

Lersilp & Lersilp 2019 [5], carried out a study to uncover the effectiveness of using information technology for communication and learning among students with hearing disabilities at secondary school for students with hearing disabilities. The information technology used in this study included information devices such as mobile phones, smartphones, and tablets. The study sample consisted of 192 students with a hearing disability. A questionnaire was used for data-collection. The results showed that most of these students suffer from problems when using chat applications (Messenger, Facebook, Line) and face-to-face conversation apps. Furthermore, most of these students contacted people with hearing problems by sending messages through Facebook, Line and face-to-face applications. The main reasons why they used information technology was for convenience and general conversation, but most of them agreed that information technology devices contributed to their participation in various activities, including conversations with their relatives and friends on social media.

Sahu 2020 [19], carried out a study to identify the impact of closing universities due to COVID- 19 pandemic on education and mental health of students and academic staff. The research highlights the potential impact of COVID-19 outbreak on students' education and mental health. The study concluded that the universities should implement a number of measures to slow the spread of the virus, students and staff should receive regular information through emails and the health and safety of students and staff should be the top priority. Moreover, proper counselling services should be available to support the mental health of students. In addition, the authorities should bear the responsibility of ensuring food and accommodation for international students, while the faculty members should pay careful attention to technology to make student learning experiences rich and effective.

Comment on Previous Studies

Through reviewing the previous studies, it turns out that these studies addressed distance learning and its advantages, such as the study conducted by Mikołajewska & Mikołajewski (2011) [24] which was concerned of available opportunities are being exploited, including e-learning as a part of the concept of the disabled person's integrated IT environment, Nganji (2012) [25] which delivered the difficulties that face disabled students in higher education when they try to accessing learning resources when e-learning systems are inaccessible, Richardson (2016) [4] which was concerned with examining the advantages of face-to-face education versus online educational support in distance education; developing a model of distance education for students with disabilities like the study carried out by Naumova, et al, 2017 [26], or investigating the effect of distance education on the education of students with physical disabilities, as in the study of Mikotajewska & Mikotajewska 2018 [6]. The study conducted by Rice 2018 [27], addressed the strategies course designers used to meet accessibility standards and promote literacies online for all students, and Pappas [28], 2018 cared about developing an e-learning platform for deaf students, while the study of Lersilp & Lersilp 2019 [5] sought to uncover the effectiveness of using information technology for communication and learning among students with hearing disabilities at secondary schools for students with hearing disabilities. Finally, the study conducted by Sahu 2020 [19] sought to identify the impact of closing universities due to COVID- 19pandemic on the education and mental health of students and academic staff.

The current study is similar to the previous studies in terms of addressing distance education for students with disabilities. However, this study is distinguished in terms of being concerned with identifying the evaluations of students with physical disabilities of distance education during the outbreak of COVID-19.

Method and Procedures

The researcher defined the study approach, as well as describing its population, sample, how the study tool is built, with its validity and reliability being verified, and stating the study procedures and the statistical methods used in processing the results. Below is a description of these procedures:

Study Approach

The descriptive analytical approach was adopted to evaluate distance education during COVID-19 pandemic from the point of view of students with physical disabilities.

Study Population

The study population consists of all (83) students with physical disabilities studying at (10) public schools and (5) special education schools that the researcher can reach to them in Jerusalem, while there is no official report identifying the prevalence of children with disabilities in Jerusalem.

Study Sample

The researcher distributed an electronic questionnaire on public schools and the schools of special education. This questionnaire was directed to students with physical disabilities. The researcher received (58) questionnaires. Four questionnaires were omitted for not being amenable for statistical analysis. In this way, the total number of the study sample is (54) males and females with physical disabilities. Table 1 shows a description of the study sample in accordance with the variables of gender, school, and type of program used in distance education.

| Variable | Level | No. | % |
|------------------------------------|-------------------|-----|-------|
| Gender | Male | 35 | 64.8% |
| | Female | 19 | 35.2% |
| School | Special Education | 37 | 68.5% |
| | Public | 17 | 31.5% |
| Program Used in Distance Education | WhatsApp | 37 | 68.5% |
| | Zoom | 17 | 31.5% |

Table 1: Description of Study Sample in Terms of the Variables of (Gender, School, and Program Used in Distance Education)

Table 1 shows that the number of male students with physical disabilities is (35) with a rate of (64.8%), bigger than the number of female students with physical disabilities which is (19) with a rate of (35.2%).

Table 1 also shows that the number of students with physical disabilities enrolled in special education schools is (37) with a rate of (68.5%), bigger than the number of students with physical disabilities enrolled in public schools which is (17) with a rate of (31.5%).

Table 1 also shows that the number of students with physical disabilities using WhatsApp for studying is (37), bigger than the number of students with physical disabilities using Zoom for studying which is (17) with a rate of (31.5%).

Study Instrument

An electronic questionnaire was built to evaluate distance education from the point of view of students with physical disabilities. The questionnaire consisted of 43 - self-report paragraphs distributed into five areas: means and techniques, content, interaction, distance learning obstacles, and evaluation. Each paragraph was given a five -point grading (Strongly Agree, Agree, Sometimes, Disagree, Strongly Disagree). The questionnaire was constructed based on scales provided in studies addressing distance education such as the study of Mikotajewska & Mikotajewska 2018 [6] and the study of Lersilp & Lersilp 2019 [5]. Some paragraphs were translated and paraphrased in a way that fits with distance education for student with physical disabilities. Afterwards, the validity and reliability of the study tool was verified by showing it, in its initial form, to nine viewers of experienced faculty members at Palestinian universities specialized in special education. The modifications proposed by the viewers were carried out.

The validity of the distance education questionnaire was also verified by calculating the Pearson Coefficient between each area of the questionnaire and the questionnaire total degree, as shown in Table 2.

| Areas | Para. # | Correlation Co-efficient |
|-----------------------------|---------|--------------------------|
| Means & Techniques | 6 | 0.79** |
| Content | 15 | 0.84** |
| Interaction | 10 | 0.75** |
| Distance Learning Obstacles | 6 | 0.79** |
| Evaluation | 6 | 0.78** |
| Total Degree | 43 | 0.92** |

**Statistically significant at the level of significance ($\alpha = 0.05$)

Table 2: Pearson Correlation Co-efficient between each Area of the Distance Learning Evaluation Questionnaire and the Questionnaire Total Degree

Table 2 shows that Pearson Correlation Co-efficient between each area of the questionnaire and the questionnaire total degree ranges between (0.75-0.92) which are fit for the purposes of this study.

The reliability of the distance education questionnaire was also calculated using Alpha Cronbach, which was (0.92) for the total questionnaire. Table 3 shows the co-efficient correlation of each paragraph of the distance education questionnaire with the questionnaire total degree and the area to which the paragraph belongs.

Table 3 shows that the Co-efficient Correlation of the paragraphs to the area of the distance education questionnaire to which they belong ranged between (0.38-0.77), while the Co-efficient Correlation of the paragraphs to the total degree of the distance education questionnaire ranged between (0.31-0.81) which is fit for the purposes of this study. The questionnaire was converted

from a paper copy into a soft copy using Google Forms to facilitate distributing them electronically to students.

| No. | Para. Correlation with Area | Para. Correlation with Total Degree | No. | Para. Correlation with Area | Para. Correlation with Total Degree | No. | Para. Correlation with Area | Para. Correlation with Total Degree |
|-----|-----------------------------|-------------------------------------|-----|-----------------------------|-------------------------------------|-----|-----------------------------|-------------------------------------|
| 1 | 0.52** | 0.53** | 16 | 0.77** | 0.62** | 31 | 0.55** | 0.52** |
| 2 | 0.38* | 0.31** | 17 | 0.72** | 0.71** | 32 | 0.68** | 0.73** |
| 3 | 0.49** | 0.77** | 18 | 0.65** | 0.81** | 33 | 0.49* | 0.81** |
| 4 | 0.46** | 0.72** | 19 | 0.68** | 0.78** | 34 | 0.47** | 0.74** |
| 5 | 0.53** | 0.64** | 20 | 0.49** | 0.77** | 35 | 0.52** | 0.61** |
| 6 | 0.46** | 0.66** | 21 | 0.51** | 0.65** | 36 | 0.48** | 0.55** |
| 7 | 0.53** | 0.58** | 22 | 0.45** | 0.80** | 37 | 0.59** | 0.73** |
| 8 | 0.43** | 0.79** | 23 | 0.54** | 0.73** | 38 | 0.56** | 0.76** |
| 9 | 0.46** | 0.49** | 24 | 0.48** | 0.64** | 39 | 0.70** | 0.48** |
| 10 | 0.58** | 0.49** | 25 | 0.49** | 0.66** | 40 | 0.65** | 0.42** |
| 11 | 0.58** | 0.64** | 26 | 0.48* | 0.49** | 41 | 0.67** | 0.67** |
| 12 | 0.64** | 0.74** | 27 | 0.63* | 0.54** | 42 | 0.71** | 0.66** |
| 13 | 0.67** | 0.80** | 28 | 0.49** | 0.50** | 43 | 0.48** | 0.56** |
| 14 | 0.75** | 0.53** | 29 | 0.48** | 0.71** | | | |
| 15 | 0.70** | 0.65** | 30 | 0.63** | 0.80** | | | |

** Significant at 0.001

*Significant at 0.050

Table 3: Co-efficient Correlation of each Paragraph of the Distance Education Questionnaire with the Questionnaire Total Degree and the Area to which the Paragraph Belongs

Study Procedures

The study tool had been constructed and its validity and reliability were verified. Then, it was converted from a paper copy into a soft copy using Google Forms to facilitate distributing them electronically to students, because of the researcher's inability to approach students at their schools. Afterwards, the questionnaire was distributed to all students with physical disabilities studying at the schools of special education and public schools in Jerusalem, using the e-mail. The researcher retrieved 54 questionnaires fit for statistical analysis. Data was organized and statistically processed to conclude results and set recommendations.

Statistical Processing

After questionnaires had been collected and examined for their appropriateness for statistical analysis, quality data was converted into quantity data that was analysed using the Statistical Package for Social Sciences (SPSS). Means and standard deviations were calculated for each paragraph, as well as the t- test.

Results

The following degrees are adopted to determine the mean degree of study subject response:

| Degree | Mean Range |
|--------|----------------|
| Low | 2.33 or lower |
| Medium | 2.34-3.67 |
| High | 3.68 or higher |

The study question results are presented and discussed according to their sequence and as follows:

First: Results of the first question: "To what extent are students with physical disabilities satisfied with online distance education during COVID-19 pandemic?"

To answer this question, means and standard deviations of study sample responses to the paragraphs of the distance education questionnaire which express the extent to which students with physical disabilities are satisfied with online distance education during COVID-19 pandemic. Table 4 shows these results.

Table 4 shows that the extent to which students with physical disabilities are satisfied with distance education during COVID-19 pandemic was medium. The mean of the total degree was (3.09) with a standard deviation of (0.53).

The area of "Means and Techniques" got the highest mean, being (3.27), followed by "Evaluation" with a mean of (3.16), and then "Interaction" with a mean of (3.15), followed by the area of content with a mean of (3.04), and then the area of "Distance Education Obstacles" with a mean of (2.85).

| No. | Areas | M | SD | Degree |
|--------------|------------------------------|------|------|--------|
| 1 | Means & Technologies | 3.27 | 0.70 | Medium |
| 5 | Evaluation | 3.16 | 0.70 | Medium |
| 3 | Interaction | 3.15 | 0.65 | Medium |
| 2 | Content | 3.04 | 0.62 | Medium |
| 4 | Distance Education Obstacles | 2.85 | 0.68 | Medium |
| Total Degree | | 3.09 | 0.53 | Medium |

Table 4: Means and Standard Deviation of the Responses of Students with Physical Disabilities to the Distance Education Questionnaire during COVID-19 Pandemic

Means and standard deviations of study sample responses to the paragraphs of the area of “Means and Techniques” in the distance education questionnaire were calculated as shown in Table 4.

| No. | Paragraphs | M | SD | Degree |
|--------------|---|------|------|--------|
| 6 | Sending and receiving the educational materials is effective and without obstacles | 3.70 | 0.84 | High |
| 1 | I can access the educational material easily and smoothly | 3.36 | 1.14 | Medium |
| 3 | There is enough information on how to use distance education | 3.35 | 1.12 | Medium |
| 2 | Internet speed is adequate for me to attend all classes | 3.33 | 1.13 | Medium |
| 4 | I receive technical assistance when I encounter a technical problem | 3.00 | 1.23 | Medium |
| 5 | Technologies used in distance education are effective and cover the whole syllabuses. | 2.89 | 1.16 | Medium |
| Total Degree | | 3.27 | 0.70 | Medium |

Table 5: Means and Standard Deviations of Study Sample Responses to the Paragraphs of the Area of “Means and Techniques” in the Distance Education Questionnaire

Table 5 shows that the means and standard deviations of the study sample responses to the area of “Means and Techniques” were

| No. | Paragraphs | M | SD | Degree |
|--------------|---|------|------|--------|
| 15 | Distance education allows students to refer to the educational material at any time | 3.85 | 1.04 | High |
| 14 | Teachers have adequate competencies for distance education | 3.65 | 0.94 | Medium |
| 8 | Teaching methods followed to explain the material are varied and appropriate | 3.46 | 0.99 | Medium |
| 1 | The online scientific material is comprehensive and adequate | 3.26 | 1.07 | Medium |
| 9 | Distance education activities and events are varied | 3.22 | 0.98 | Medium |
| 2 | Content is presented in an interesting manner | 3.20 | 1.12 | Medium |
| 10 | Distance education has contributed to acquiring learning and knowledge | 3.15 | 1.05 | Medium |
| 11 | Distance education has made me acquire new skills | 3.15 | 1.04 | Medium |
| 7 | Distance education aims are clear for me | 3.06 | 1.19 | Medium |
| 12 | Distance education has contributed to increasing my reliance on others | 2.96 | 1.39 | Medium |
| 13 | Distance education has organized my time | 2.78 | 1.34 | Medium |
| 5 | Using distance education has developed my self-reflection | 2.70 | 1.11 | Medium |
| 4 | Presenting the learning material through distance education has provided me with additional training and skills | 2.67 | 1.08 | Medium |
| 6 | I feel comfortable because of using distance education | 2.56 | 1.33 | Medium |
| 3 | I feel satisfied when I use distance education exactly like face-to-face education because of COVID-19 | 1.93 | 1.11 | Low |
| Total Degree | | 3.04 | 0.62 | Medium |

Table 6: Means and Standard Deviations of Study Sample Responses to the Paragraphs of the Area of “Content” in the Distance Education Questionnaire

medium, except for one paragraph which was high. The paragraph of “Sending and receiving educational materials is effective and without obstacles” received the highest mean of (3.70), followed by the paragraph of “I can access the educational material easily and smoothly” with a mean of (3.36) “, while the paragraph of “Technologies used in distance education are effective and cover the whole syllabuses received the lowest mean of (2.89).

Means and standard deviations of study sample responses to the paragraphs of the area of “Content” in the distance education questionnaire were calculated as shown in Table 6.

Table 6 shows that the means and standard deviations of study sample responses to the paragraphs of the area of “Content” ranged between high, medium and low degrees. The paragraph of “Distance education allows students to refer to the educational material at any time” received the highest mean, being (3.85) with a high degree, followed by the paragraph of “Teachers have adequate competencies for distance education” with a mean of (3.65) and with a medium degree. The paragraph “I feel satisfied when I use distance education exactly like face-to-face education because of COVID-19” received the lowest mean, being 1.93 with a low degree.

Means and standard deviations of study sample responses to the paragraphs of the area of “Interaction” in the distance education questionnaire were calculated as shown in Table 7.

| No. | Paragraphs | M | SD | Degree |
|--------------|--|-------|------|--------|
| 5 | All teachers are committed to the program of distance education lessons | 3.96 | 0.80 | High |
| 1 | I can ask teachers any question or inquiry during distance education classes | 3.87 | 1.08 | High |
| 4 | There is continuous coordination between the teacher and students through distance education classes | 3.69 | 0.89 | High |
| 9 | I attend distance education classes every day | 3.63 | 1.23 | Medium |
| 6 | I attend all of my distance education classes | 3.56 | 1.18 | Medium |
| 2 | Interaction between students themselves takes place from a distance | 2.94 | 1.32 | Medium |
| 8 | I feel comfortable with the way all teachers communicate through distance learning | 2.87 | 1.28 | Medium |
| 3 | Interaction between students themselves takes place during distance education | 2.83 | 1.24 | Medium |
| 10 | Distance education system provides direct communication between students and administration | 2.13 | 1.23 | Low |
| 7 | I would like to continue with distance education | 2.00 | 1.32 | Low |
| Total Degree | | 153.1 | 0.65 | Medium |

Table 7: Means and standard deviations of study sample responses to the paragraphs of the area of “Interaction” in the distance education questionnaire

Table 7 shows that the means and standard deviations of study sample responses to the paragraphs of the area of “Interaction” ranged between high and medium degrees. Three paragraphs were of high degree, five paragraphs were of medium degree, and two paragraphs were of low degree. The paragraph of “All teachers are committed to the program of distance education lessons” received the highest mean, being (3.96) with a high degree, followed by the paragraph of “I can ask teachers any question or inquiry during distance education classes” with a mean of (3.87) and with a high degree. The paragraph of “I would like to continue with distance education” received the lowest mean, being (2.00) with a low degree.

Means and standard deviations of study sample responses to the paragraphs of the area of “Distance Education Obstacles” in the distance education questionnaire were calculated as shown in Table 8.

| No. | Paragraphs | M | SD | Degree |
|---------------|--|------|------|--------|
| 2 | Not all teachers have sufficient and appropriate experience and skills | 3.37 | 1.10 | Medium |
| 4 | There is difficulty in direct communication between teachers and students | 3.20 | 1.05 | Medium |
| 3 | Teachers encounter a difficulty in following up students | 3.09 | 1.09 | Medium |
| 1 | Power outage occurs during the distance education process | 2.83 | 1.40 | Medium |
| 6 | There are problems and obstacles related to distance education | 2.31 | 1.11 | Low |
| 5 | Distance education system is suitable for all theoretical and practical subjects | 2.26 | 1.31 | Low |
| Total Degrees | | 2.85 | 0.68 | Medium |

Table 8: Means and Standard Deviations of Study Sample Responses to the Paragraphs of the Area of “Distance Education Obstacles” in the Distance Education Questionnaire

Table 8 shows the means and standard deviations of study sample responses to the paragraphs of the area of “Distance Education Obstacles”. Four paragraphs were of medium degree and two paragraphs were of low degree. The paragraph of “Not all teachers have sufficient and appropriate experience and skills” received the highest mean, being (3.37), followed by the paragraph of “There is difficulty in direct communication between teachers and students” with a mean of (3.20). The paragraph of “Distance education system is suitable for all theoretical and practical subjects” received the lowest mean, being (2.26) with a low degree.

Means and standard deviations of study sample responses to the paragraphs of the area of “Evaluation” in the distance education questionnaire were calculated as shown in Table 9.

| No. | Paragraphs | M | S. D | Degree |
|--------------|---|------|------|--------|
| 6 | There is a variety in school homework during distance education | 3.67 | 0.87 | Medium |
| 4 | I get an appropriate feedback from teachers during distance education | 3.39 | 0.94 | Medium |
| 1 | I get evaluated remotely in an objective and just way | 3.20 | 1.10 | Medium |
| 3 | Remote evaluation methods are appropriate | 3.09 | 1.05 | Medium |
| 2 | Remote tests are valuable and objective | 3.02 | 1.06 | Medium |
| 5 | Remote tests do not evaluate students effectively and properly | 2.61 | 1.05 | Medium |
| Total Degree | | 3.16 | 0.70 | Medium |

Table 9: Means and Standard Deviations of Study Sample Responses to the Paragraphs of the Area of “Evaluation” in the Distance Education Questionnaire

Table 9 shows that the means and standard deviations of study sample responses to the paragraphs of the area of “Evaluation” were of a medium degree. The paragraph of “There is a variety in school homework during distance education” received the highest mean, being (3.67), followed by the paragraph of “I get an appropriate feedback from teachers during distance education” with a mean of (3.39). The paragraph of “Remote tests do not evaluate students in effectively and properly” received the lowest mean, being (2.61).

Second: Results related to the second question: **Are there statistically significant differences at the level of ($\alpha \leq 0.05$) in means of the response of students with physical disabilities to the distance education evaluation scale during COVID-19 pandemic that can be attributed to the variables of (gender, school and program used in education)?**

To answer this question, t-test was carried out for the independent samples of the study sample response in terms of the extent to which students with physical disabilities are satisfied with distance education during COVID-19 pandemic according to the variable of gender, school and type of program used in education as shown in Table 10.

| Variable | Gender | No. | M | S. D | T value | Significance level |
|-----------------------------------|-------------------|-----|------|------|---------|--------------------|
| Gender | Male | 35 | 3.08 | 0.53 | 0.156 | 0.877 |
| | Female | 19 | 3.10 | 0.54 | | |
| School | Special Education | 37 | 3.08 | 0.55 | 0.192 | 0.848 |
| | Public | 17 | 3.11 | 0.51 | | |
| Type of Program used in Education | WhatsApp | 37 | 3.01 | 0.54 | 1.550 | 0.127 |
| | Zoom | 17 | 3.25 | 0.48 | | |

Table 10: Results of T-test for the Independent Samples of the Study Sample Response to the Distance Education Questionnaire According to the Variables of Gender, School and Program Used in Education

Table 10 shows that the “t” value of the total degree to the gender variable was (0.156), with a significance level of (0.877), which is not statistically significant. This means that there are no significant differences at ($\alpha = 0.05$) between the means of the responses of students with physical disabilities on the evaluation of distance education scale during COVID-19 pandemic that can be attributed to gender.

Table 10 shows that the “t” value of the total degree to the school variable was (0.192), with a significance level of (0.848), which is not statistically significant. This means that there are no significant differences at ($\alpha = 0.05$) between the means of the responses of students with physical disabilities on the evaluation of distance education scale during COVID-19 pandemic that can be attributed to school.

Table 10 shows that the “t” value of the total degree to the variable of “Type of Program used in Education” was (1.550), with a significance level of (0.127), which is not statistically significant. This means that there are no significant differences at ($\alpha = 0.05$) between the means of the responses of students with physical disabilities on the evaluation of distance education scale during COVID-19 pandemic that can be attributed to the “Type of Program used in Education”.

Discussion

First: discussions of the first question results “The satisfaction of students with physical disabilities in Jerusalem with regard to distance education in light of the Corona pandemic was at a moderate degree”.

The results of students with physical disabilities evaluating distance education in light of COVID-19 is attributed to the fact that the shift from face-to-face education into distance education came out of sudden, without giving teachers and school principals the chance to study the cases of students with physical disabilities, nor provide them with the requirements of distance learning.

This result can also be attributed to the fact that distance education has become the sole source of education, thus making many students with physical disabilities cope with it and carry on their education through it, as teachers were committed to the continuation of teaching through social media and the teaching platforms adopted during COVID-19 pandemic. Therefore, the community as a whole were directed towards this software, making it commonly used among all students.

The result of the paragraph “Not all teachers have sufficient and appropriate experience and skills” is attributed to the sudden shift into distance education, without teachers’ getting any training to teach students with physical disabilities remotely. In fact, teachers were using teaching platforms and social media through exploring these programs without taking any specialized courses from the Ministry of Education.

The result of some paragraphs receiving a poor degree such as : “There are problems and obstacles in distance education” , “Distance education is appropriate for all theoretical and practical materials” , “I like to continue studying in distance education and; “distance education system provides direct communication between students and administration”, “ I feel satisfied when using distance education exactly like face-to-face education because of COVID-19” , is attributed to the fact that students with disabilities found it hard to suddenly cope with distance education. Moreover, the distance education aids are not designed in accordance with the disability nature of students with physical disabilities.

The results of this question are consistent with the results of the study carried out by Mikotajewask & Mikotajewask, 2018, which revealed that students with physical disabilities encounter many challenges and obstacles; and the study of Saho, 2020 which revealed that closing universities, because of COVID-19 pandemic has impacted the education and mental health of students and faculty members.

Second: discussions of the second question results “There are no significant differences in the level of students with physical disability satisfaction with distance education in light of the Corona pandemic due to the variable of gender, school or program used in education”.

This result can be attributed to the fact that COVID-19 pandemic-imposed distance education on both male and female schools, as the government in Palestine responded to COVID-19 pandemic by locking down all schools. Both male and female students were affected by this lockdown, thus making them shift from face-to-face education into distance education.

This result can also be attributed to the fact that the government of Palestine responded to COVID-19 pandemic which made it lockdown all public and private schools as well as schools with special education to limit the spread of COVID-19. This lockdown forced all (public or special education) schools to respond to these procedures and shift from face- to – face education into distance education.

This result can be attributed to the fact that when schools shifted into distance education, they used to mean of social media and merged these means of social media with education. This made many teachers communicate with their students through the programmes of Zoom and WhatsApp. In this way teachers communicate with students through the WhatsApp program to orientate them for learning, and then they move directly to zoom program. Once education through Zoom is over, teachers send the worksheets and assignments through WhatsApp.

Recommendations

- Train teachers on distance education for students with physical disabilities.
- Identify distance education obstacles among students with physical disabilities and work on overcoming them.
- Investigate the disability cases among students with physical disabilities and provide devices that fit the disability type they suffer from.
- Motivate students with physical disabilities and stimulate them to continue learning through distance education.
- Build-up educational activities for students with physical disabilities to ensure the continuation of their learning.

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