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# The Obstacles Facing Physical Education Teachers in Implementing a Remote Class using Technology in Light of COVID-19 Pandemic in Palestine

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## ABSTRACT

**Background and objectives:** The Corona virus (COVID-19) has revealed emerging vulnerabilities in education systems around the world especially physical education (PE). The aim of this study was to identify and describe the challenges to online learning among EP teachers in Palestine during the COVID-19 pandemic (e.g., according to gender, years of experience, location). **Methods:** The study population consisted of 287 teachers' employees under Palestinian Ministry of Education. They were chosen by the simple random method and the number of the male sample was 197 and the number of females was 90. A questionnaire was developed and its validity and stability factor were verified (Cronbach's Alpha = 84.3). After collecting the questionnaire's answers, responses were coded and entered into the Statistical Package for Social Sciences (SPSS 20) to perform an ANOVA analysis. **Results:** The results showed that among 287 EP teachers, 83.2 % of the study sample felt that e-learning lacks social interaction. 83% of the study sample have admitted the lack of tools for students and the inability to implement and apply group skills. 82.2% of the study sample felt the non-commitment of students to follow the lesson remotely. 82% of the study sample have admitted the students' lack of interest in the theoretical aspect of physical education and the low concentration of students. Otherwise, only 70.6% of the study sample confirmed that student does not have a computer. 59.8% of the study sample confirmed that student does not have internet service. 43.3% of the study sample have admitted that PE teacher in Palestine are not driven to use a computer. **Conclusions:** Physical education teachers in Palestine confronted several interrelated barriers as they tried to adapt to online learning.

**Key words:** COVID-19, Palestine, online learning, physical education

## INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic is causing substantial morbidity and mortality, straining health care systems, shutting down economies, and closing school districts (Ammar et al., 2020a,b). According to a UNESCO Report by the end of 2019

COVID-19 started rapidly spreading worldwide, causing the death of over 3000 people. Subsequently, several countries started initiating relevant strategies to contain this virus, including school closures. Subsequently, as of 12th March forty-six countries in five different continents announced school and university closures to contain the spread of COVID-19 (Huang et al., 2020).

Although physical exercises are of crucial importance (Chtourou et al., 2020; Bentlage et al., 2020), during these particular circumstances touch is forbidden and unthinkable because of the risk of having physical contact or proximity with people generally and students particularly is associated with the transmission of the

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highly infectious virus Covid-19. Also, against the backdrop of the COVID-19 outbreak various policy initiatives are being launched by governments and tertiary institutions across the world to continue teaching activities so as to contain the virus. However, there is ambiguity and disagreement about what to teach, how to teach, the workload of teachers and students, the teaching environment, and the implications for education equity (Zhang et al., 2020).

Students now exist mainly through screens and at homes in countries which have adopted extreme lockdown regimes. In this sense, we have witnessed many jobs and tasks switching to online modes, including the delivery of physical education (PE). This is particularly significant for activities that have a more 'hands-on' approach (such as PE), and could be problematic for teachers, who were keen to undergo their face-to-face practicum at schools. This means that students are still missing PE (Lambert, 2020).

Otherwise, many high income countries used as a safe solution the emergence of electronic distance learning based on the approach that technology plays an important role in students' lives, as it integrates it helps them to learn more effectively and stimulates their love of discovery and experimentation by using videos recorded by teachers, or programs that are shown on televisions, or messages are transmitted via the internet, such as social media (Facebook, Twitter, YouTube, or e-mail...) (Rachmadtullah et al., 2020; Rasmitadila et al., 2020 ; Lemay & Doleck, 2020). However, sometimes we forgot that those opportunities were not accessible for any one and the chances were not the same in all countries due to differences in socioeconomic levels and infrastructures some in low- and middle-income countries.

Therefore, it will be crucial to address these barriers in low- and middle-income countries whose internet network capacity and power is low and modern technology, such as (computers, tablets, smartphones....) are very expensive.

The aim of this study was to identify and describe the challenges to online learning, also called e-learning, web-based learning, or internet-based learning among PE teachers in Palestine during the COVID-19 pandemic. We hypothesized that teachers have faced socioeconomic barriers, in addition to limited access to technological resources.

## METHODS

### Experimental Approach to the Problem

There is limited information on the influence of the COVID-19 on physical education practicing. Therefore, the present study was designed to determine how online learning could affect EP sessions during COVID-19 pandemic in a selected group of EP teachers' employees under Palestinian Ministry of Education.

### Subject

The study population consisted of (287) teachers' employees under Palestinian Ministry of Education. The number of the male sample was (n=197), and the number of females was (n=90), and they were chosen by the simple random method. The study was conducted during the competitive season and was approved by The Clinical Research Ethics Committee and the protocol were conducted according to the Declaration of Helsinki. All participants gave their written informed consent to participate in the study.

### Survey Instrument

We initially conducted a focus group discussion with PE teacher employees under Palestinian Ministry of Education, reviewed relevant literature, and searched official school websites for announcements on changes being implemented in Palestine schools due to the COVID-19 crisis. Using these background data, we developed a 36-item questionnaire that collected demographics, access to technological resources, study habits, current living conditions, and views on online learning. We used Howlett's definition of online learning, which is 'the use of electronic technology and media to deliver, support, and enhance both learning and teaching and involves communication between learners and teachers utilizing online content. The questionnaire was designed on the basis of the five-dimensional Likert scale and the paragraphs were shown and weights were given as follows: [Strongly agree: (five degrees); Agree: (four degrees); Neutral: (three degrees); Disagree: (two degrees); Strongly disagree: (one degree); The highest score on the scale is therefore (5 x 36 = 180); The lowest score is (1 x 36 = 36)].

Data were collected over one month; March to April 2020 from PE teacher employees under Palestinian Ministry of Education. The survey took the participants about 9 minutes to complete. A bi-weekly

reminder strategy was used to inform the participants who had not completed the survey to do so.

### Validation of the questionnaire

After preparing the study tool in its initial form and to verify its validity, the researcher presented it to a number of experienced and specialized referees in order to ensure the validity of the content of the paragraphs composing the questionnaire, and its suitability for the objectives and variables of the study.

### Stability of the questionnaire

The stability factor of this study was used using the Cronbach's Alpha equation, and the value of the reliability coefficient was 84.3, which is a good reliability coefficient that meets the purposes of scientific research.

### Statistical Analyses

Data are presented as means and standard deviations (SD). After normality of data was tested and confirmed using the Shapiro-Wilk test, baseline between group differences were computed using t-tests for independent samples. A one-way (ANOVA) were conducted to compare the measurements of each dependent variables. Additionally, effect sizes (ES) were determined from ANOVA output by converting partial eta-squared to Cohen's d. In addition, within-group ES were computed using the following equation:  $ES = (\text{mean post} - \text{mean pre})/SD$  (Cohen, 1988). Following Hopkins et al. (2009), ES were considered trivial ( $<0.2$ ), small (0.2–0.6), moderate (0.6–1.2), large (1.2–2.0) and very large (2.0–4.0). The ICCs were used to check reliability of the questionnaire, where  $r < .50$  was classified as weak, 0.50 to 0.79 as moderate, and  $\geq 0.80$  as strong. The level of significance was set at  $p < 0.05$ . All statistical analyses were computed using SPSS for Windows, version 20.0 (SPSS Inc., Chicago).

## RESULTS

Table 1 illustrates distribution of the study sample according to the categories. The results showed that 68.6% of the study sample had a male gender and 31.4% were females. 56.4% of the study sample lived in a village, 33.1% was in a city, and 10.5% was in a camp. 55.7% of the study sample have from 5 to 10 years of experience, 24.7% were have than 10 years, and 19.5% have less than 5 years. 83.6% of the study sample have a bachelor's degree, 14.3% masters or higher, and 2.1%

**Table 1:** Distribution of the study sample according to the categories

Category	Subgroup	Frequency	Percentage (%)
Gender	Male	197	68.6
	Female	90	31.4
	Total	287	100
Place of residence	City	95	33.1
	Village	162	56.4
	Camp	30	10.5
	Total	287	100
Years of experience	<5 years	56	19.5
	Between 5 and 10 years	160	55.7
	>10years	71	24.7
	Total	287	100
Educational attainment	Diploma	6	2.1
	Bachelor	240	83.6
	Master	41	14.3
	Total	287	100
School type	Public	252	87.8
	Private	35	12.2
	Total	287	100

have a diploma. 87.8% of the study sample were from a government school and 12.2% from private school.

Table 2 illustrates mean, standard deviations, percentages, and the estimation in descending order according to the arithmetic mean of the questionnaire. In summary, the results showed that 83.2 % of the study sample felt that e-learning lacks social interaction. 83% of the study sample have admitted the lack of tools for students and the inability to implement and apply group skills. 82.2% of the study sample felt the non-commitment of students to follow the lesson remotely. 82% of the study sample have admitted the students' lack of interest in the theoretical aspect of physical education and the low concentration of students. Otherwise, only 70.6% of the study sample confirmed that student does not have a computer. 59.8% of the study sample confirmed that student does not have internet service. 43.3% of the study sample have admitted that PE teacher in Palestine are not driven to use a computer.

Table 3 illustrates the results of the differences in terms of the difficulties that physical education teachers face in implementing a remote class using technology in light of the COVID-19 pandemic due



**Table 2:** Mean, standard deviations, percentages, and the estimation in descending order according to the arithmetic mean of the questionnaire

Number	Questions	Mean	SD	Percentage (%)	Estimation
36	e-learning lacks social interaction	4.17	0.48	83.2	Very large
26	Lack of tools for students	4.15	0.58	83	Very large
28	Inability to implement and apply group skills	4.15	0.52	83	Very large
19	Non-commitment of students to follow the lesson remotely	4.11	0.55	82.2	Very large
27	Students' lack of interest in the theoretical aspect of physical education	4.10	0.61	82	Very large
34	Low concentration of students	4.10	0.55	82	Very large
15	Unavailability of programs or plans suitable for the current situation from the Directorate	4.06	0.60	81.2	Very large
21	The lack of necessary tools to apply the lesson	4.05	0.56	81	Very large
23	Lack of safety and security elements when performing sports movements and skills at home	4.05	0.56	81	Very large
33	The inability to commit students to the lesson	4.03	0.67	80.6	Very large
14	Internet service in Palestine is weak in proportion to the size of the users	4.02	0.66	80.4	Very large
24	The lack of suspense and competition	4.02	0.63	80.4	Very large
9	I prefer traditional education over e-learning	4.01	0.83	80.2	Very large
20	I am unable to create an appropriate evaluation for students in physical education through e-learning	3.97	0.68	79.4	Large
25	Inability to correct errors	3.97	0.71	79.4	Large
31	The lesson is limited to individual skills only	3.93	0.64	78.6	Large
16	The difficulty of presenting the material according to the established plan	3.92	0.69	78.4	Large
22	The lack of motivation for students to stop the tournament program in the directorate	3.91	0.66	78.2	Large
32	The lack of clear methods for the educational process	3.91	0.66	78.2	Large
18	You do not have a suitable place inside the house to display the article	3.85	0.80	77	Large
3	Parents reject this type of education in physical education subject	3.84	0.65	76.8	Large
29	Difficulty portraying the skill by the teacher	3.84	0.79	76.8	Large
4	Parents' view of physical education material a negative view	3.83	0.77	76.6	Large
17	Lack of confidence in technological means in transferring information remotely in an appropriate manner	3.79	0.73	75.8	Large
35	There is no direct encouragement of students from the teacher	3.77	0.80	75.4	Large
2	There is no appropriate way to continue the educational process in physical education	3.73	0.81	74.6	Large
30	Difficulty implementing the skill by the teacher	3.63	0.89	72.6	Large
5	The use of technology in physical education subject is useless	3.61	0.93	72.2	Large
13	The student does not have a computer	3.53	0.93	70.6	Large
1	The school administration's lack of interest in physical education	3.23	1.08	64.6	Large
11	The student does not have internet service	2.99	1.08	59.8	Moderate
7	The student has limited experience in using the Internet	2.70	1.02	54	Moderate
12	Your computer is not available	2.66	1.09	53.2	Moderate
8	As a teacher, I feel that I have limited experience using the Internet	2.59	1.04	51.8	Moderate
6	I see that I am not driven to use a computer	2.16	0.80	43.2	Moderate
10	You do not have internet service	2.14	0.69	42.8	Moderate

to the different categories. The result showed that there was only a significant difference concerning educational attainment ( $p=0.008$ ). LSD post hoc

test revealed a significant difference in favor of Bachelor when comparing with Diploma and Master ( $p<0.05$ ).

**Table 3:** The results of the differences in terms of the difficulties that physical education teachers face in implementing a remote class using technology in light of the Corona pandemic due to the different categories

Category	Subgroup	Mean	SD	P value (ES)
Gender	Male	3.66		0.25( )
	Female	3.71		
Place of residence	City	3.65		0.55()
	Village	3.69		
	Camp	3.69		
Years of experience	<5 years	3.64		0.16()
	Between 5 and 10 years	3.71		
	>10years	3.64		
Educational attainment	Diploma	3.44		0.008()
	Bachelor	3.70		
	Master	3.58		
School type	Public	3.68		0.28()
	Private	3.63		

## DISCUSSION

The aim of this study was to identify and describe the challenges to online learning among EP teachers in Palestine during the COVID-19 pandemic (e.g., according to gender, years of experience). This survey of 287 teachers' employees under Palestinian Ministry of Education revealed that EP teachers, regardless of geographic location, have encountered several barriers as they tried to adapt to online learning during the COVID-19 pandemic. The principals causes affected the EP teachers' perception of their capacity to engage in online learning were: having the feeling that e-learning lacks social interaction, non-commitment of students to follow the lesson remotely the lack of tools for students, the inability to implement and apply group skills and internet or computer unavailability.

Despite that several previous studies admitted that e-learning as a better alternative for the learners, and the researchers should be able to look for ways of making it more focused on thinking and creation. Moreover, most online courses are dictated by technology (Wang and Hu, 2019; Donitsa-Schmidt & Topaz, 2018; Garcia & Badia, 2017). The present study, revealed many barriers that could influence this process in Palestine which was in the same line with previous studies investigated the e-learning in low- and middle-income countries (Mahmood; Barteit et al., 2019; Daroedono et al., 2020; Mukhtar et al., 2020).

Beginning with direct contact and interaction between teachers and students, the results showed that 83.2 % of the study sample felt that e-learning lacks social interaction. In this context, González-Calvo et al., (2020) reported that emotions are present and play a significant role when PE teachers are undertaking their practicum experiences during 'normal times'. However, these emotions are intensified and changed during COVID-19 practicum, mainly because of the switch to online mode and the uncertainty about the future.

Moreover, Valeria et al. (2020) confirmed the feelings of uncertainty and lack of freedom during COVID-19 in Spanish PE teacher. In fact, those authors reported that PE teacher were not sure about how to continue teaching PE online, whether all their students are following their classes and instructions, and how they can work on the continuity of a PE unit. COVID-19 is also limiting freedom and provoking panic in people, according to what Agamben (2020) has named as a creation of a pandemic. In this sense, it brings uncertainty as it disrupts people's routines and the future is unknown and frightening.

Concerning the non-commitment of students to follow the lesson remotely, it was evident that more time spent at home did not necessarily equate to more time for academic work (Ronnie et al.2020). There were students who could not concentrate because they were constantly exposed to conflict among family members. Even in the absence of domestic dispute, some found it hard to turn down conversations with parents or siblings (Ronnie et al.2020). In fact, the support of parents, is very recommended in order to turn e learning successful (Gurer, 2019; Karataş & Oral, 2015; Alrefaie et al., 2020).

Concerning technological tools, the survey has shown that the number of Palestinian PE teacher and students with limited access to technological resources is not negligible (53.2% for PE and 70.6 % for students did not have a computer). Moreover, 42.8% for PE and 59.8% for students have no internet connection. In fact, power interruptions, weak infrastructure, and internet costs restricted the PE teachers and students to online content access, similar to other developing countries (Mahmood; Barteit et al. 2019; Daroedono et al., 2020; Mukhtar et al. 2020).

Moreover, the survey was conducted during the COVID-19 pandemic with the economic consequences

in the background. Unemployment rate in the country is at record high all over the world and particularly in low income countries (Bong et al., 2020). Analysis had revealed the pervasive nature of this problem: working parents lost jobs that supported their children's education; household budgets had to be split between essential needs and internet subscription; and family-owned businesses closed. Consistent with these responses, students from lower income brackets felt less capable of engaging in online learning (Bong et al., 2020).

The added cost of online learning should not be underestimated. In this context, Ronnie et al. (2020) reported that an hour of video lectures will consume about 480 MB of mobile data. Those authors, mentioned that at the prevailing rate of approximately 23 pesos per GB, a student who watches four hours of videos will need to spend 45 pesos daily. To put the figures in context, minimum daily wage in the Philippines in May 2020 ranged from 230 to 450 pesos

## LIMITATIONS

The study was performed on a relatively small population. Also, the main objective of the investigation was conducted only among EP teachers however the e-learning is a multifactorial subject and need a deeper investigation that include the student's opinions. So, further studies are required to take that in consideration.

## CONCLUSIONS

The result of the present study indicates that physical education teacher in Palestine confronted several interrelated barriers as they tried to adapt to online learning. By implementing teachers-centered interventions, Ministry and schools play a significant role in addressing these challenges during the COVID-19 pandemic.

## PRACTICAL APPLICATIONS

- The student must have internet service.
- Training students to use the internet.
- Working on improving internet networks and working to increase the existing speeds and deliver them to the farthest area.
- Training teachers to use the internet.

- Continuously developing the distance education system and benefiting from the experiences of other countries.

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