Efficacy of teaching physical education online: A comparative study during COVID-19 school closures

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ABSTRACT

The purpose of the present study was to explore the effectiveness of online teaching in Physical Education during COVID-19 school closures and to explore the thoughts and emotions evoked by COVID-19 pandemic in the physical education teachers while striving to instruct physical education virtually. This study was conducted by comparing and analyzing the variables responsible for influencing the pedagogical profession of physical education (PE) throughout Kuwait. In the present study, 60 physical education teachers of Kuwait were recruited, representing Al-Asimah school district, Hawalli school district, Al Farwaniyah school district, Al Jahra school district, Mubarak Al-Kabeer school district, and Al Ahmadi school district. Qualitative method was used for data collection in the form of specialized online surveys, as well as online focus group discussions. Statistical analysis was done using a descriptive statistical assessment and a continuous comparison approach. The findings of the present study revealed that educators comprehend that teaching PE must be done face-to-face to become meaningful, as there are multiple flaws in online instructional framework. An internet instructional approach increases the likelihood of occupational pressure and discontentment with the career path. The findings of this study may be utilized to spark a critical conversation about the challenges that PE instructors confront when teaching PE online.

KEYWORDS

Online Teaching; School Closures; Physical Education

1. INTRODUCTION

COVID-19 pandemic has dragged civilization almost to a halt across the globe. Out of serious consequences, one of the most common is the negative impact on learning due to the interruption of schooling. The long term shutdown of educational organizations has impacted educational career of

countless students. (Education International, 2020; Ozer, 2020). Though, educational institutions had tried their best to retain the inherent permanency of schooling via remote learning, wherein the simultaneous or sequential virtual educational environments, internet-based, cloud-based, or computer instructional apps, (Means et al., 2013). Online teaching/learning has both benefits and loss in comparison to face-to-face learning owing to systemic disparities (Mohnsen, 2012; Bilgic & Tuzun, 2020; de Oliveira et al., 2018).

Most of the schools in Kuwait adopted teaching/learning through digital platforms like Google, Microsoft etc. Educators were trained and made familiar to this rapid digitalization, which is a basic necessity for transformation of their instructional techniques across network-based schooling. Digital platforms have certain limits in the subjects like physical education, sports training etc. which are essentially practical based subjects.

Prior to global pandemic, online physical education classes (OLPE) were quickly developed as a vital resource in avoiding overweight and offering PE sessions to learners that experience geographic and economic challenges, particularly within the United States (Daum & Buschner, 2012; Killian, Kinder, & Mays Woods, 2019; Mohnsen, 2012).

Existing OLPE analysis has examined the link involving program content, instructional techniques, execution, as well as learner's outcomes (Mosier, 2010; Goad, 2018). Furthermore, students' views, motivations, and accomplishments in various distant learning (combined or hybrid) physical education classes constituted significant study subjects (Chan et al., 2021).

Physical activity (PA) related training helps the individuals by keeping their mental, physical, social and emotional wellbeing (WHO, 2020). Subsequent findings have revealed that the COVID-19 pandemic has greatly declined the PA involvement of Kuwaiti school-aged kids and increased the sedentary conduct with online learning (Dunton et al., 2020).

COVID-19 exerted unintended impact on low-income students in the form of issues related to poverty, educational deficits lower socioeconomic and psychological wellness, and greater education dropouts due to institution shutdown. Physical education remains a mandatory discipline within most educational establishments. Physical education provides the most extensive student PA program throughout the world.

Whilst traditional in-person physical training by offline teaching method was not devoid of difficulties (Hardman, 2008), classroom cancellations owing to COVID-19 added a unique set of issues. Physical education educators, as well as administration staff, were quickly trained and prepared for online teaching programs without satisfactory coaching or allocation of proper

instructional and teaching assets. Followed by which, they were immediately asked to teach via online educational portals (Webster et al., 2021).

Owing to uneven accessibility to technologies, continuous high-speed connection, parental guidance and assistance, sporting items, and space requirements to match up with virtual physical education, digital training is inherently unfair among school-aged kids (Daum, 2020). A great deal of problems are experienced by the students who rely heavily upon classroom physical education training for PA participation. They experience difficulties in becoming physically engaged while at home (Esentürk, 2020).

Digital physical education, if implemented properly, has the ability to minimize health inequalities caused by inequitable alternatives for PA involvement (Draper et al., 2021).

Although the point of views of physical education instructors vary regarding development of digital physical education materials and to effectively augment or complement excellent in-person activities while considering into account learners' various educational and physical activity requirements.

Given the prevalence of inequalities in young PA, the research used a diversification, equality, and inclusiveness paradigm. The present research is focused to investigate the perception of Kuwaiti P-12 physical education teachers' regarding influence of various layout aspects using online teaching methods to improve PA equality throughout schools' shutdown (Dashper and Fletcher, 2013).

This study was designed primarily as a comparative pilot inquiry to help guide future stages regarding the creation of that kind of technology, enabling competent conduct and practical inquiry within the field of fair online physical education. Multiple major issues exist in the virtual physical education training curriculum including administration, monitoring, and measurement processes for instruction and outcome of curriculum (Bushner, 2006; Kooiman et al., 2016).Perhaps both the educational institutions and the players enrolled in the institution were not sufficiently equipped for such a rapid shift to distant schooling, and then, in reality, such behaviors mirrored the characteristics for distant learning (Bozkurt & Sharma, 2020).The problems that contemporary physical education teachers might have throughout remote education will, possibly have an impact on the effectiveness of teaching. The institutions remained shuttered at the onset of the COVID pandemic, and the ministry had to begin the online education program after waiting for more than six months later. Every week, one lecture on physical education was taken by the instructors. Furthermore, after one month of commencement of the teaching program, the ministry of education decided to add a PE lesson owing to the belief that online PE instruction was ineffective.

COVID-19 has substantially hastened the pace in every domain of an individual's life. Education sector has been affected to a significant extent so much that the whole system got affected for the years ahead (Varea and González-Calvo, 2020; Blackshear, 2020). On the other side, the pandemic has opened a marketplace for merchants prepared to remedy schooling along the foundation of its technologicalization (Teräs et al., 2020). Modifications prompted by the necessity allowed significant corporations to enter the education systems (González-Calvo and Arias-Carballal, 2018). Constant transformation is prevalent within Western cultures (Han, 2017, 2018; Standing, 2011). Nevertheless, despite significant socioeconomic disturbances, merchants have utilized this opportunity to create fundamental shifts under the shape of adopting neoliberal ideologies, exploiting fear and uncertainty (Klein, 2020). In this way, neoliberalism fosters unbridled confidence throughout marketplace principles, extreme individuality, and unbridled competitiveness, consequently undermining concepts of the general populace, cooperation, and caring towards individuals (Giroux, 2014).

The present study was aimed to examine the findings, facts and insights obtained via teaching PE from the study conducted by Chan et al (2021), to potentially create a major influence on changing preconceptions surrounding education and PE, with a demonstrable influence upon the teaching profession how it is perceived and addressed. Along the above strands, the present study was conducted, considering three goals based on prospective teachers' viewpoints: (a) to explore thoughts and emotions the disaster excites throughout teachers once they've got to instruct PE virtually; (b) to probe the effects of simulated learning of PE; as well as (c) to explore how well the virus outbreak has altered the teachers' impression of trying to instruct PE as well as their dedication for classroom instruction.

2. METHODS

2.1. Participants and Sampling Procedure

In the present study, 60 P-12 physical education teachers were recruited from Kuwait's Al-Asimah school district, Hawalli school district, Al Farwaniyah school district, Al Jahra school district, Mubarak Al-Kabeer school district, and Al Ahmadi school district participated throughout this research. Initially, 40 primary and secondary schools were selected using randomized selection approach from the Kuwait Ministry of Education database. Database includes a list of all the schools of Kuwait. The schools were selected from every district based upon the actual percentage breakdown of every district (number of websites showing institutions for the district) towards the

overall range of pages of schools mentioned at the ministries homepage. Approximately 50 web pages identified the institutions throughout the Al-Asimah education district, which accounted 0.01 percent of the aggregate number of web pages available on the homepage across all the institutions mentioned. A total of three webpages were selected on random basis to symbolize the specified Kuwait district schools. Email contacts were gathered from every physical education educator mentioned on a specific department of education's webpage. Failing to get email addresses from physical education teachers from one web page, simultaneously another web page was selected randomly. A general appeal and request was made to the respondents regarding issue of email accounts to complete an internet survey. Out of all emails,18 "failure to deliver" automatic responses were received back. Furthermore, three potential respondents responded claiming they could not finish the research study (district). After one week, a follow up email was sent and the participants were asked to submit the questionnaire within stipulated period of fourteen days. The poll had a total of 16 percent responses.

2.2. Data production

Participants were invited to complete the online questionnaire through Google form. The study was conducted between Mid- July to end of the August month during which most of the institutions in Kuwait remained shut due to pandemic. Participants were requested to review the survey's guidelines prior to the completion of the survey. Personal questionnaires and focus groups sessions were also employed throughout the research.

Written informed consent was obtained prior to the start of filling the online questionnaire. Ethical approval was obtained from the ethical board of the institution. The present study was authorized by the Kuwait Ministry of Education board.

Table 1. Individual interview questions.

- How would you feel regarding online education right presently (in regards to pressure, attitude, duration invested with family/friends, and so forth)?
- What were your primary priorities as a teacher, and how have they evolved during the lockdown?
- What were some ramifications of never becoming capable of satisfying the educational vocation's demands as a result of the prevailing predicament?
- Explain if you believe it is simpler to 'burn out in the teaching profession' as a remote PE instructor against a face-to-face PE instructor. What makes you think that is the situation?
- Are there some additional concerns you would want to answer about the area of research, which I have not questioned you yet?

Table 2. Questions & queries - focus group discussions.

What are your thoughts on online PE instruction?

- Given that we are at residence and videotaping a personal environment, is it anything that makes you seem uneasy or challenging?
- Do you believe you must appear to become pleased or content? Under what circumstances were you obliged to act.
- Unless you felt truly, broken yet then forced to fake, how might it become simpler to do so?

What feelings come to mind whenever you consider getting within physical interaction among the learners while it had been feasible and currently while it is not real?

- Do you enjoy face-to-face lessons with students who are near to you, or do you believe perhaps online sessions offer benefits? What are these benefits?
- Does anybody seem relieved that there are increasingly computer-mediated interactions, or do people regard it as a negative rather than a benefit?

You have indeed been exposed to PE as a learner for several years; has this transformed decisively, but also what sort of PE instructor will we be allowed to become throughout the coming years? Are humans likely to be equipped to recreate the model that people saw?

- Does the instructor's job evolve, remain identical, and must technology assist it?
- Are you frightened of returning to the classroom as well as attempting to interact with a large number of youngsters? Are you scared of exposing them or of becoming susceptible to infection? How would one deal with such anxieties?
- Will human beings become thus scared of infection that we will need to accept that perhaps the profession might change?
- Will administrators devote more effort to student monitoring compared to everything else?
- Are the sweatpants and shoes currently your signature look? Is such a distinguishing feature still relevant?

Do you believe the approach PE is taught might alter significantly? If so, how do you believe it might shift?

- Will PE suffer greatly if the method it is taught shifts so drastically throughout the end?

2.3. Data analysis

Statistical analysis was done using SPSS-25 (IBM Corp., released in 2017). Version 25.0 of IBM SPSS Statistics for Windows (Armonk, NY). The level of significance was fixed at p= 0.05. Skewness and Kurtosis were used for the assessment of Normal distribution of data. Normal dispersion for the variables was assumed to range between -1.5 and +1.5 (Tabachnick & Fidell, 2013).

The findings of the self-assessment questionnaires filled by the physical education educators were assessed under six aspects. Specific factors including gender, sporting activity, simultaneous or sequential distant learning, the availability of expert assistance, and technology needs; including the use of an application/software, was used to evaluate the findings using the t-test.

Throughout the present research, physical educators, as well as sports educators were classified according to their age, expertise: inexperienced (0-5 years), less skilled (6-10 years), accomplished (11-15 years), as well as extremely accomplished (16 years and above), and workplace timeframe at the identical school: short period (0-5 years), mid-term (6-10), and long period (16 years and over) (11 years and above). The SETEQ-PE data were examined employing the evaluation of variances.

Table 3. Demographics of survey respondents (n = 60).

	n	%
Gender		
Female	29	48
Male	31	52
Age range (years)		
25–34	10	17
35–44	20	33
45–54	17	28
55+	13	22
Geographic location		
Al-Asimah school district	25	42
Hawalli school district	35	58
Al Farwaniyah school district	24	56
Al Jahra school district	37	62
Mubarak Al-Kabeer school district	13	22
Al Ahmadi school district	10	16
Teaching experience (years)	17.4	**SD = 11.1**
SD, standard deviation		

3. RESULTS

Figure 1 displayed statistics regarding participants, schools, and educational standing during remote education. Throughout the research, 71.51 percent of instructors who completed the SETEQ-PE self-assessment gave courses simultaneously, 36.84 percent participants of group sports, and 63.16 percent participated in personal sports.

The majority of overall physical education instructors got technical assistance, and two-thirds had appropriate technology tools. The percentage of people who utilize applications/software was 73.26 percent (Figure 1). Respondents were questioned whether students had experienced any problems throughout virtual PE education compared to the results obtained by Chan et al (2021).
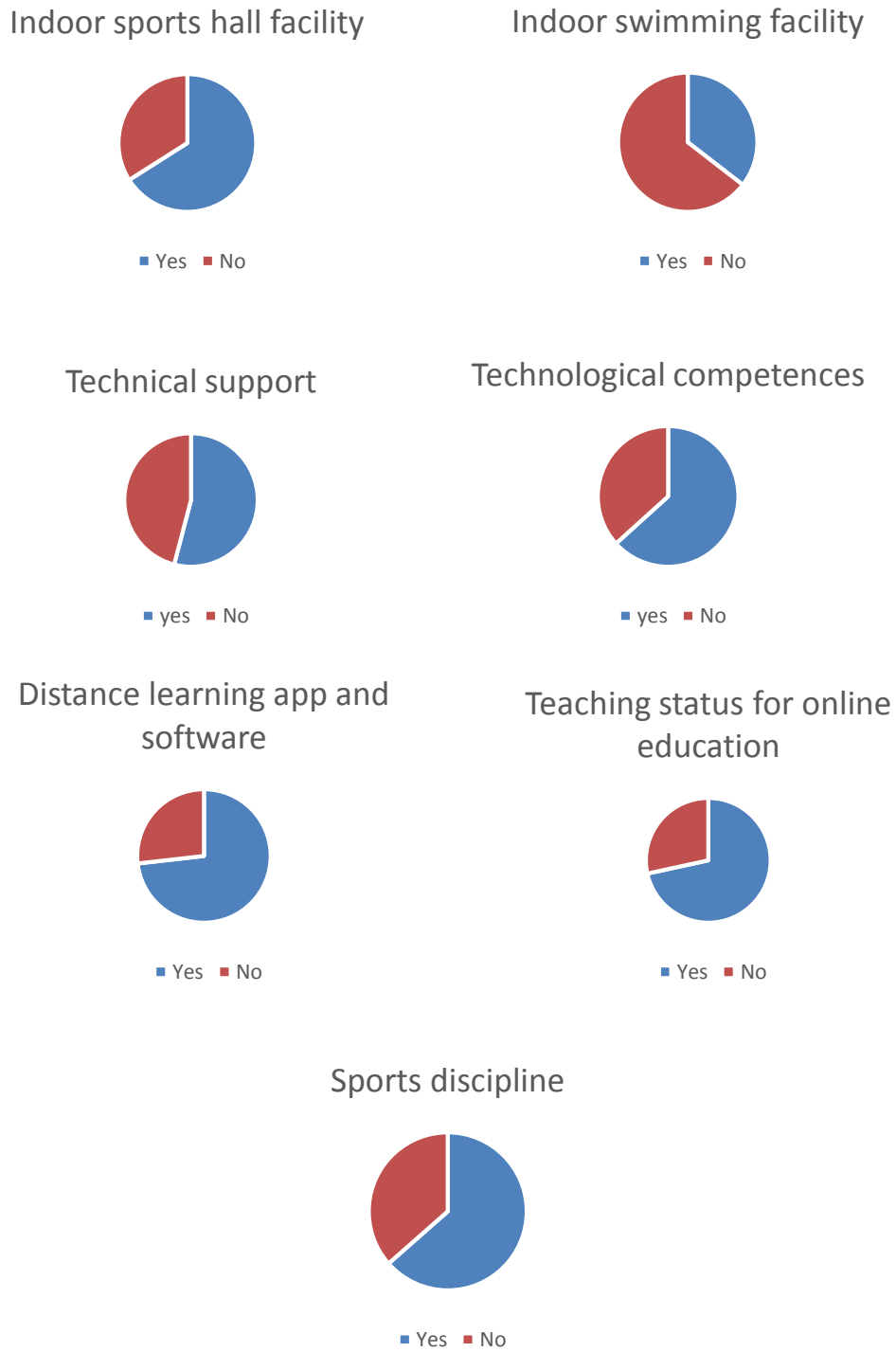
Indoor sports hall facility

■ Yes ■ No

Indoor swimming facility

■ Yes ■ No

Technical support

■ yes ■ No

Technological competences

■ yes ■ No

Distance learning app and software

■ Yes ■ No

Teaching status for online education

■ Yes ■ No

Sports discipline

■ Yes ■ No

Figure 1. Statistics regarding participants, schools, and educational standing during remote education.

Table 2 describes The median and standard deviation for the assessment of teacher efficacy scale within Physical Education, and six sub-dimensions. The delivery of technological help from school administration seemed statistically meaningful primarily in terms of student's teacher

evaluation and overall ratings. The classroom atmosphere, student-teacher evaluation, technological utilization, and aggregate ratings appeared considerably lower among physical education instructors who admitted to experiencing inadequate resources. Furthermore, instructors who used an application or technology throughout remote learning had a significantly superior educational atmosphere, student evaluation, and cumulative points versus individuals that could not (Table 2).

When the transmission of covid-19 was proclaimed a global epidemic in the midst of academic year physical education instructors were forced to complete the curriculum virtually. Initially, PE instructors encountered variety of issues as they missed the session of initial instructions which provided the maximum information on how to become an effective educator online. (Wilson, 2006), Respondents expressed dissatisfaction and unhappiness because of the disparity between whatever they anticipated throughout their education session and what they received:

> *There remains a constant sense of dissatisfaction at never being enabled to practice as much as I want or follow through with several didactic ideas that may pique my interest. (Female, R.)*

Furthermore, Educators have also revealed that online PE teaching causes additional tiredness, as most of the instructors were not able to concentrate for so long and were easily drifted away from the topic. Under the containment phase, instructors had to focus more on learning technology based teaching. Due to lack of expertise, educators invested their maximum time in understanding and preparing online content and to deliver their lecture via online portal (Donitsa-Schmidt and Ramot, 2020; König et al., 2020). That is evident in the instructors who participated in this research. The extreme reliance on technologies separated the prospective instructors from developing a solid educational foundation as PE teachers, leaving them exhausted at the conclusion of the phase:

> *I am fatigued. It is stressful to constantly stay extremely alert to technology, create and prepare films for learners, and study how technology functions in the move in having to offer educational recommendations. (Se., Female)*

Since it is very important for the instructors to engage alongside their learners throughout the online session. They also realized the importance of being resilient and withstand weariness. Respondents recognized that teachers owe it towards their students to enable individuals to be happy and simultaneously keen to acquire knowledge.

> *Numerous interpersonal requirements need instructors to be active and enthusiastic and using cheerfulness [...] bearing under consideration that the circumstance impacts everyone tremendously, therefore that we do not impact the kids significantly further, there*

are moments when we need to 'falsely claim' to be happy in order not to hurt the learners (Male, G.)

Up to this point, the findings of the present study revealed that the overall evolution of schooling should compensate for current experiences or problems encountered by the educators. The connections between learners and instructors are inextricably related towards the latter's well-being (Spilt et al., 2011). The current research very well demonstrated the lack of such interactions between them due to high bouts of stress and anxiety related problems encountered by the educators while dealing with sudden transition from offline mode to online mode. Appropriate management of the unpleasant events or problems faced by the educators should be a collective responsibility of organizations and regulations, including teachers to work collaboratively to resolve them (Prilleltensky et al., 2016).

Despite high psychological stress encountered by the educators during the period of virtual educational training, instructors worked really hard to stay proactive and enthusiastic throughout the course.

The strain and exhaustion that somehow this method of becoming an educator implies. Staying accessible all day, reading at the schoolwork that the students bring you exhausts us all mentally. (Male, A.)

Throughout this duration of pandemic, it can be very well predicted that educators exhibit a good personality reflecting more optimism towards their professional growth following COVID-19 (González-Calvo et al., 2020):

I feel constantly besieged by sentiments, including the duty to remain energetic and joyful within the online classes, attempting to persuade the pupils that they are studying the identical skills we normally acquire inside a regular scenario; despite the fact that I understand, it isn't the case. (Female, S.)

4. DISCUSSION

Appropriate training should be provided using purposeful, methodical techniques, to improve the PE participation of educators. In this study, a segment of physical education instructors' was recruited which is the representative of physical education instructors' across the nation with the aim to determine the factors which can enhance the effectiveness of internet based physical education training.

Educators' preferences differed by gender (usefulness and availability), geographical region (equitability), and educational grade (facilitation of formal assessment). Physical educators, desire comprehensive and agile online materials which can easily adapt according to their geographical situation, can meet student requirements, allow them to teach using diverse methods particularly whenever in-person training is not available. Customized technologies that assist the instructors in generating their original curriculum or altering current information may be required to overcome structural inequalities that impede involvement through online physical education training.

Future studies throughout this area could perhaps look into aspects that increase direct connections and involvement throughout online physical education, between diversified student clusters and by providing ancillary learning sources to teachers about youth connectivity with families and with indoor/outdoor environments.

Even though online tools currently exist for teachers, they seem insufficient to fulfill the present demands of physical education teachers. Previous studies, for instance, revealed that "learner accessibility to virtual learning" and "accessibility of instructor resource base" constituted significant obstacles associated with virtual physical education teaching in this evil pandemic. (Pavlovic et al., 2021). Earlier, physical educators were constantly associated with the students throughout their academic journey. It helps them in making better assessments. But in the online system, respondents were particularly dissatisfied given their absence of preparation for that unexpected encounter. Future instructors became introduced to new problems by altering the socioeconomic settings wherein their work placement occurred:

> *Absence of solace with never being accustomed to such kind of instruction and an absence of privacy from needing to "opening up my place" to all the learners, including relatives who may be viewing. (Male, S.)*

Various analyses have shown that educational programs, supports, equipment, partnerships, mentorship, or the proper connection amongst principles and application are significant deciding variables towards the adequate establishment of the PE during initial training (Allen and Wright, 2014; Cohen et al., 2013; Ulvik et al., 2018). Nevertheless, the unexpected circumstance made educators uneasy, which adversely affected their mental health,

What was presumed to become a learning timeframe to lay the groundwork for one's career advancement, endorsed by a specialist educator as well as a college professor (Ulvik and Smith,

2018), turned into a public procedure in which educators and trainees were forced to introduce up one's residences, living areas, and private residences (González-Calvo et al., 2020). For a teacher throughout the course of interpersonal and occupational development, this entailed a constant sense of being judged:

> *The worry of whatever others possibly perceive, particularly nowadays that educating seems increasingly "public" when everything is online, impacts us greatly; this is a component of my character that I do not even enjoy and wish to alter, so, therefore, is extremely difficult for me. Occasionally you assume that people might be contemplating things concerning you, things they were not, and that when people seem to be, it should not be anything that bothers you. M. (Male)*

Conversely, Mercier et al. found that 20% of physical education instructors were unsuccessful while teaching digitally throughout the pandemic. Half of the respondents did not employ tasks or audiovisual teaching. Authors concluded that answers given by the learners might not accurately represent real learning (Mercier et al., 2021). Furthermore, according to Killian et al.'s (2019) analysis, no existing study has assessed the effectiveness of digital and hybrid education to foster or hinder skills growth or Physical education outside of the schools (Killian et al., 2019). There exists a definite necessity for more studies to guide the creation of customizable online learning programs that meet the demands of physical education teachers, particularly within virtual instructional times.

5. CONCLUSIONS

The main finding of this study was that the physical education teachers of Kuwait showed a tremendous deal of anxiety and disillusionment when teaching physical education online during COVID-19 school closures.

Therefore, the updated model of PE and the PE instructor need the continual interplay among 'exterior' entities (physical, non-material, etc.) to construct and disassemble into different configurations. Human beings and technology have constantly intertwined. Over the years, technology has advanced to a significant level (Lupton, 2015, 2019). In the present study, we also found problems experienced by PE instructors with the sudden transition of their teaching style from offline to online mode. Researcher has also illustrated the interactional abilities associated with this transition in this virtual world of technological advancement.

Considering the likelihood that geographically remote schooling, virtual or face-to-face, exists beyond the future, preparation of the teachers for online and offline mode is crucially important. In the coming generations, education sector must give a thought to deal with the changing social situations. Policies must be dedicated to academic achievement in principle, and PE in specific, to develop educators' vocational identities, allowing people to tackle the intrinsic problems within their job effectively.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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