

A Project entitled

Examining the effectiveness of virtual Physical Education lesson during COVID-19 on students' affective development

Submitted by

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Declaration

I, *Ho Hoi Hung* declare that this research report represents my own work under the supervision of *Dr. TSE, Choi Yeung Andy*, and that it has not been submitted previously for examination to any tertiary institution.

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Abstract

Background: Since 2019, COVID-19 pandemic has become a global issue, schools were closed for a long period of time. The virtual lessons became a raising trend rapidly. Inevitably, Physical Education is necessary to be delivered via cameras. Virtual PE lessons has becoming a hotspot in the teaching field. **Objective:** This questionnaire-based study aims to examine the **effectiveness of virtual Physical Education lesson during COVID-19 on students' affective development.** **Methodology:** A questionnaire-based study, 205 and 145 (350 in total) responses from secondary students were received through online Questionnaire 1 and Questionnaire 2 respectively between mid-November 2020 to mid-March 2021. **Findings:** Five significant findings were featured in this study. Firstly, majority of students claimed that they had lower intention to participate in virtual PE lessons actively compared to that of traditional PE lessons, and the major reasons were concerning the 'content of the lessons' and 'the changes in the interaction between teacher and students.' Secondly, most students reported that they have weak ability to recognize their own emotions and the emotions of their classmate during virtual PE lessons. Thirdly, most students had insufficient interpersonal development during virtual PE lessons as they had limited chance to appreciate others as well as undergoing team building activities. Fourthly, a large percentage of students encountered difficulties in expressing their emotions, the reason is that the communication and interaction between peers was diminished. Fifthly, most students recommended that school should create a high-interacting and interesting learning atmosphere in order to fostering better virtual PE lesson. **Discussion:** In conclusion, in term of student's affective development, the effectiveness of virtual PE lessons during the period of COVID-19 was generally observed to be low. Moreover, schools should provide support to frontline teachers and students such as appropriate platform for virtual lessons, guidelines for virtual PE lessons and relevant learning materials. By creating a more interacting and enthralling virtual learning atmosphere, the affective development of students can be enriched, and the effectiveness of virtual PE lessons can be enhanced accordingly.

(Word count: 331)

Keywords: COVID-19; virtual lesson; physical education; affective development

Background

Current situation

The COVID-19 pandemic is a challenging barrier to education systems all over the world. In the early 2020, the Hong Kong EDB announced all local schools were closed from the end of January due to COVID-19 and all classes switched to virtual learning mode. As a consequence of the suspension, all school classes would be taught completely online (Moorhouse, 2020). Since the curriculum were designed for face-to-face teaching, this meant that teachers required to adapt them to make them suitable for online teaching. The synchronous online teaching implicates real-time live lessons produced via Video Conferencing Software (VCS) such as Zoom©, Microsoft Teams©, Google Meet© etc. (Moorhouse, 2020). It has rapidly become the mainstream of virtual lessons teaching mode in Hong Kong. Previous research has found that virtual lessons were unlike face-to-face lessons, the students seldom talked, instead favoring in the chat room function. The lessons were teacher-centered with the teachers mainly re-stating the content of the PowerPoint (Moorhouse, 2020). It is obviously a hardship for hosting a virtual lesson, one question that prevails in the PE teaching communities is, “How do students achieve learning target through virtual PE lesson?”

Virtual PE lessons

In the U.S., numerous states have started a virtual school option for their public secondary students years ago before the outbreak of the COVID-19 due to the distance-minimizing lessons for students. In virtual PE lessons, students covered health and fitness-related issues and learn how to foster and implement workouts and training programs that fulfill their personal needs and interests. Similar to the Hong Kong NSS PE curriculum, students also study the skill-related fitness components, the advantages of regular exercise, and other key PE content (Jackson, 2000; Mosier, 2010). However, Hong Kong just started the very first step of virtual PE since the outbreak of the COVID-19 pandemic. Existing research affords a strong foundation for teachers in face-to-face lesson settings, yet there is a scarcity of research regarding to teachers implementing virtual lessons. PE teachers must equip with all the traditional teaching skills and even more in order to foster students go through the content virtually (William, 2013).

Students' affective development as a vital learning objective in PE curriculum

According to the EDB, motor skills development, cognitive development and affective development are the main components of the Key Learning Area (KLA) in PE curriculum. Express oneself, communicate and co-operate

effectively with others, display appropriate etiquette and sportsmanship in physical activities are the learning targets stated in the *Physical Education Key Learning Area Curriculum Guide*. Some of the schools have already practicing virtual PE in the early stage, mainly delivering the content of home exercise which enhancing students motor skills and relevant knowledge. Nevertheless, the affective development of the students is threatening to be neglected. Therefore, the objective of this study aims to examine the effectiveness of virtual Physical Education lesson during COVID-19 on students' affective development.

Purpose

The purpose of this study was to describe the frequency and rating of students' affective development regarding virtual PE lessons and to provide insights into the daily practices of virtual PE teachers in Hong Kong.

Methodology

Research design: It is designed to be a questionnaire-based study.

Participants: Totally 350 responses from secondary school students were received through online Questionnaire. An anonymous online questionnaire was delivered through Google documents from the mid of November 2020 to the mid of March 2021. The data-receiving date was set in the period of schools' closure as online lessons turned into mainstream teaching mode. Since the outbreak of the pandemic in the early 2020, the Hong Kong school system has entered this state for the third time. Instructions was stated in the beginning of the questionnaires. Consent formed were received from the participants and this study was accepted by the university ethics committee. Demographic populations of the surveyed participants are shown in Table 1

Table 1.

Demographic population by gender and education level	n	%
Variables		
<u>Gender</u>		
Males	229	65.4
Females	121	34.6
Total	350	100
<u>Age range</u>		
0-9	0	0
10-14 105 116	221	63.1
15-19 100 29	129	36.9
Total	350	100
<u>Education level</u>		
Secondary 205 145	350	100
Primary	0	0
Total	350	100

Measures and data analysis

The online questionnaire composed by Questionnaire 1 and Questionnaire 2 which targeted to investigate the overall situation of virtual PE lessons, students' learning effectiveness in term of affective domain and suggestions for improving virtual PE lessons. 205 and 145 responses from students were received through online Questionnaire 1 and Questionnaire 2 respectively. The responses obtained from participant were analyzed in percentage and descriptive statistics are used to describe the quantitative findings of the data in this study.

Result

An overview of virtual PE lessons in Hong Kong

98.6% of participants accounted to be attending PE lessons during the survey period. In glance, 7.5% of participants reported to have face to face PE lessons, 21.2% of them reported to attend virtual PE lessons and 71.2% of them were needed to have both.

Finding 1: The intention to participate in the activities of virtual PE lessons

In term of intention to participate in the PE lesson, only 14.4% of participants reported to have ‘extremely higher’ or ‘higher’ intention to participate in virtual PE lessons actively compared to that of traditional PE lessons, 17.1% of participants indicated ‘no difference’ and 68.5% of them claimed to have ‘lower’ or ‘extremely lower’ intention, which were the majority. As a result, major reasons for the poorer learning intention were the ‘content attractiveness of the lessons’ and ‘the changes in the interactivity between teacher and students.’

Table 2.

Students rating on the intention to participate in virtual PE lessons compared that of traditional PE lessons.	n	%
Extremely higher	5	3.4
Higher	16	11
No difference	25	17.1
Lower	74	50.7
Extremely lower	26	17.8
Reasons of the above question		
The ways of feedback given by teacher	13	9.3
Content attractiveness of the lessons	55	39.3
The changes in the interactivity between teacher and students	66	47.1
Other reasons	6	4.3

Finding 2: Effectiveness of virtual PE lessons in strengthening students’ ability to recognize emotions

Most students reported that they have weak ability to recognize their own emotions during virtual PE lessons. In addition, there were over 60% of participants claimed that they didn’t know their strengths and they couldn’t find ways to appreciate themselves via virtual PE lessons.

Table3.

Students rating on the statement ‘I know my strengths and appreciate myself through Virtual PE lessons’	n	%
Extremely agree	11	7.5
Agree	47	32.2
Disagree	71	48.6
Extremely disagree	17	11.6

Finding 3: Effectiveness of virtual PE lessons in nurturing interpersonal development of students

Most students had insufficient interpersonal development during virtual PE lessons as they had limited chance to appreciate others as well as undergoing team building activities. As a result, only about 30% of the participants indicated that they could observe the strength and weaknesses of classmates and give related expression. Participants were questioned if they experienced or ever exerted the spirit of teamwork via virtual PE lessons. Fewer than 40% of participants reported to be positive and 60% of participants haven't utilized the spirit of teamwork.

Table 4

Students rating on the statement ‘I can observe the strengths and weaknesses of classmates and give opinions to the others	n	%
Extremely agree	10	6.8
Agree	40	27.4
Disagree	65	44.5
Extremely disagree	31	21.2

Student can utilize the spirit of teamwork through virtual PE lessons	n	%
Extremely agree	10	6.8
Agree	46	31.5
Disagree	51	34.9
Extremely disagree	39	26.7

Finding 4: Effectiveness of virtual PE lessons in enhancing students' ability to express their emotions

In term of the ability to express emotions, it requires a student to express their emotions and needs appropriately. A small percentage (7.5%) of participants were reported extremely agreed that they could express their positive and negative emotions during virtual PE lessons, 37% of participants agreed to this statement. However, 55% of participants encountered difficulties in expressing their emotions. Regarding to this situation, it is reported that most

of participants (61.6%) couldn't take the initiative to voice out about their thoughts. Moreover, a large percentage of

participants (55.9%) disagreed that virtual PE lessons promote interaction among their classmates. As a result, the peer communication diminished instead.

Table 5.

Student rating on if they could express their positive and negative emotions during virtual PE lessons	n	%
Extremely agree	11	7.5
Agree	54	37
Disagree	56	38.4
Extremely disagree	25	17.1
Student rating on if they could take the initiative to express their thoughts needs		
Extremely agree	8	5.5
Agree	48	32.9
Disagree	73	50
Extremely disagree	17	11.6
Student rating on ‘the interaction between peers is increased via virtual PE lessons’		
Extremely agree	29	14.2
agree	61	29.9
disagree	76	37.3
Extremely disagree	38	18.6

Finding 5: Suggestion to school in fostering better virtual PE. lessons

In term of achieving a better virtual PE lesson, most of participants (75.5%) agreed that pre-record teaching video helps fostering learning efficiency. It is reported that the majority of participants (49.3%) suggest schools to provide a platform for virtual lessons such as computer room or other space which compatible with digital devices. Also, most students recommended that school should create a high-interacting and interesting learning atmosphere (63.7%) in order to fostering better virtual PE lesson.

Table 6.

Support can be given by schools for virtual PE lessons in advance	n	%
Provide tap-let computers to students such as iPad	46	31.5
Provide platform for virtual lessons	72	49.3
Provide guideline for online lessons and teaching kits for teachers	60	41.1
Others	9	6.2
Students rating on ‘a pre-record video prepared by teacher can foster learning process’		
Extremely agree	47	23
Agree	107	52.5
Disagree	40	19.6

Extremely disagree	10	4.9
<hr/>		
Ways to enhance learning motivation for virtual PE lessons		
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Create a high-interacting and interesting learning atmosphere	93	63.7
Provide teaching video	55	37.7
Set up goals for students to achieve	39	26.7
Provide more physical training	39	26.7

Note: Participants could choose more than one option, the total percentage exceeds 100%

Discussion

COVID-19 had contested PE teachers in designing expressive activities for students. It has also showed and helped clear up public misunderstandings of what PE entails (J.Y.Chow, 2021). Ensuring the goals of PE are still important even as classes are converted to virtual. Despite the motor skills development or cognitive development that students could acquire, when PE lessons switched into virtual mode, student's motivation to learn comes up in the first priority. The affective development is a vital part among the key learning objectives of PE curriculum, so as virtual PE lessons do.

Regarding to the effectiveness of virtual PE lessons, most participants reported to have insufficient affective development. Base on the findings of this study, most students rated themselves low in the questions focusing on affective domains, which includes recognizing emotions, expressing emotions as well as communication with others.

PE is serious in its obligation to help all students learn through different learning domains (i.e., physical, cognitive, social and affective), teachers need to be more careful in their choices of educational approaches (Ashley C. & Javier F., 2019). Similar result to the previous study, approaches should be selected which capable of developing learning in the affective domain (e.g., structures like jigsaw co-operate learning). (Ashley C. & Javier F., 2019). What has been lost goes beyond the component of physical activities, when PE targets to reinforce decision-making and problem-solving, through physical activities and games. Collaborative skills in fair games, teamwork and lessons of sportsmanship that could have been established with face-to-face communication when interacting with their peers was lacking during virtual PE lessons. The consequence is the loss of enhancement for psychomotor and leadership skills (J.Y.Chow, 2021).

Today, the objective of effective PE lessons is to stimulus the all-rounded development of student in the major domains of learning: Psychomotor, cognitive and affective so that they can enjoy a lifetime of healthy living actively. Meanwhile, technology has exhibited new possibilities of delivering the traditional lessons during the COVID-19 pandemic, we should also be aware that there are still learning experiences that technology cannot fully substitute, which is the role of PE teacher.

There are limitations for this study. Firstly, the data were only collected in 4 secondary schools with 350 responses in total. The research scale is not huge which it could not represent the whole ecology of Hong Kong schools practicing virtual PE lessons. It would be more comprehensive if the research scale is enlarged. Secondly, this study focused on virtual PE lessons from the students' viewpoints solely and did not interviewed other stakeholders such as parents and teachers. It would be thought-provoking to assess the effectiveness of virtual PE lessons from parents' and teachers' opinions. Thirdly, the teaching approach varies from different schools so as the teaching style of teachers. The data collected from the questionnaires didn't distinguish the property if the lessons. For example, a student-centered lesson is different from a teacher centered lesson. The effectiveness of virtual PE lessons also influenced by the teaching approaches under cameras and the teaching style of the teachers practicing the virtual lessons.

Conclusion

This study contributes to the literature and discussions about teaching secondary PE virtually in Hong Kong and sets the mileage for further research in teaching virtual PE lessons. The study helps current and future PE teachers in understanding what students reflected about the rewards and challenges in term of their affective development during virtual PE lessons. PE teachers can benefit from knowing more about effective virtual PE teaching at the local schools whereas they can generate positive student learning outcomes in the field. Relevant support such as the content which enhancing interaction should be provided to students. Virtual PE lesson is a significant addition to the PE field nowadays, and more exploratory, descriptive research is desired to offer more insights about virtual teaching within the PE field.

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Disclosure statement

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References

- Ashley Casey & Javier Fernandez-Rio (2019). Cooperative Learning and the Affective Domain, *Journal of Physical Education, Recreation & Dance*, 90:3, 12-17, DOI: 10.1080/07303084.2019.1559671. Retrieved 5 March 2021.
- Benjamin Luke Moorhouse (2020). Adaptations to a face-to-face initial teacher education course ‘forced’ online due to the COVID-19 pandemic, *Journal of Education for Teaching*. Retrieved 10 March 2021, from <http://10.1080/02607476.2020.1755205>.
- Bopp, Trevor; Stelfox, Michael. (2020). "Practical and Ethical Considerations for Schools Using Social Media to Promote Physical Literacy in Youth" *International journal of environmental research and public health* 17, no. 4: 1225. Retrieved 10 March 2021, from <https://doi.org/10.3390/ijerph17041225>
- Carla Vidoni. (2020). Connecting Social Skills to PE Instruction. *Strategies* 33:1, pages 3-7. Retrieved 10 March 2021.
- Chow, J.Y. (2021). Commentary: Your PE teacher’s secret headaches during a year of COVID-19. *Channel News Asia*. Retrieved 10 March 2021, from <https://www.channelnewsasia.com/news/commentary/pe-lessons-teachers-covid-19-primary-school-secondary-education-14145286>
- Curriculum Development Council (2017). *Physical Education Key Learning Area Curriculum Guide (Primary 1-Secondary 6)*. Hong Kong: Curriculum Development Council Committee. Retrieved 10 March 2021
- Daniel, S.J (2020). Education and the COVID-19 pandemic. *Prospects* 49, 91–96. Retrieved 10 March 2021, from <https://doi.org/10.1007/s11125-020-09464-3>
- Frömel, Karel; Vašíčková, Jana; Skalík, Krzysztof; Svozil, Zbyněk; Groffik, Dorota; Mitáš, Josef. (2021). "Physical Activity Recommendations in the Context of New Calls for Change in Physical Education" *International journal of environmental research and public health* 18, no. 3: 1177. Retrieved 10 March 2021, from <https://doi.org/10.3390/ijerph18031177>
- Williams, Leslie Michelle (2013). A Case Study of Virtual Physical Education Teachers' Experiences in and Perspectives of Online Teaching. *Graduate Theses and Dissertations*. Retrieved 10 March 2021, from <http://scholarcommons.usf.edu/etd/4962>
- Zhao, R. (2020). “Hong Kong Universities Suspend On-campus Classes.” *China Daily On-line*, January 31. Retrieved 10 March 2021, from <https://www.chinadailyhk.com/article/119792>