A Project entitled

Investing students' learning behavior in Physical Education lesson during the period of COVID-19

Submitted by

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Declaration

I, Tam Ka Ki declare that this research report represents my own work under the supervision of Department of Health and Physical Education and Dr. TSE, Choi Yeung Andy, and that it has not been submitted previously for examination to any tertiary institution.

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Abstract

The cluster of viral pneumonia cases called COVID-19 occurring in all over the world. School adopt an online lesson included Zoom meeting, google meet or other victual platforms to support students' home learning. This purpose of the study is to investing students' learning behavior in Physical Education lesson during the period of COVID-19. The study applied questionnaire-based. Responses from 204 students in questionnaire 1 and 144 students in questionnaire 2 from different secondary school through online survey. Five major findings were elicited in the study. First, most students reported that the use of digital video in physical education and online PE lessons were not effective to improve learning. The major reasons were "lack of motivation" and "lack of practical training". Second, most students stated that the interaction of online PE lesson is not enough because of the theory session in the class. Third, the majority of students felt not exhausted in online PE lesson and the major reasons were "lack of practical time" and "lack of practical space". Forth, the majority of students claims it is not difficult to participate in the online PE lesson in front of the devices because of students should follow teacher's home activities. Fifth, most students think that online learning could increase self-learning behavior. The major reason is teacher encountered difficulties in observe student's behavior and provide feedback. In summary, the effective of learning behavior about online PE teaching during Covid-19 was low and showed negative affection. School and teacher should improve the classroom interaction, increase teacher-to-student interaction and student -to- student interaction and develop creative and interactive online PE lessons which could encourage student to learn and increase their physical activity level.

Keywords: Covid-19; physical education ; online teaching; learning behavior

Introduction

Sever acute respiratory syndrome coronavirus has spread all over the world in 2019. The World Health Organization named the disease called COVID-19 and subsequently claimed that it a pandemic through respiratory droplets, the virus can also be transmitted through contact which is widespread infectivity (The World Health Organization,2020). COVID-19 is affecting 210 countries and territories, 188 countries have implemented nationwide school closures (Lancet Child Adolesc Health, 2020). According to the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2020), more than 1.05 billion students at primary and secondary schools have been affected. In the changes, educators have been adapting their curriculum into distance learning. A study indicated that the mean about individual daily contact rate in Hong Kong, in a nine hour duration could be contacting 12–13 other peoples (Kwok, Cowling, Wei, Riley& Read, 2018). In order to minimize the risk of spreading COVID-19 and reduce the number of social contacts, all primary and secondary school in Hong Kong was announced that suspend face-to-face teaching in early August until the end of summer, which mean schools could only use of other modes in the new school year. In response to the potential move to online instruction by the COVID-19 pandemic, educators have been adapting their curriculum through electronic media and distance learning, e.g., video recording, online assessment, ongoing reflections (Scull, Phillips, Sharma & Garnier, 2020). In the rapid transition to online education, because nobody knows when this pandemic will disappear. Many online platforms is developed to support the needs of the society. Online learning is through the use of technological tools that are Web-related (Conrad, 2006) . It can also involve the delivery of learning material through the Internet (Guilar & Loring, 2008). Online platforms such as Google Meet, Zoom, Microsoft Teams (O'Brien et al., 2020). In an attempt to address these challenges,

Physical Education have adopted in virtual modes that continues to develop the related knowledge. PE teacher need to re-design the structure about the lesson, arranged the learning environment to home-based learning. According to students' ability, the learning content should start at the lowest level of difficulty and the theory classes can be applied in online lesson (Education Bureau, 2021). Meanwhile, online PE lesson should pay attention in the potential risks of the respective activities. In changing the mode of learning, there was a high usage of electronic devices, students would be sit in front of the computer for around 6-8 lesson per day including PE lesson. Moreover, although electronic learning has been promoted in education in recent years, this is the first time that online learning has been used for such a long period. Therefore, this study from the perspective of students during COVID-19 school suspension, investigating the students' learning behavior in Physical Education lesson during the period of COVID-19. This study regarding to the students' opinion about effectiveness of online teaching in PE as well as to collect comments and suggestions from the students and showed in which aspect teacher could accessible and responsive to student's needs.

Methodology

Participants

All participants of 13 to 20 years old in secondary school students were invited via Google form from 5 March to 19 Marth 2021. The participants were given approximately 15-20 minutes to answer the questions. The criteria of the students should be participant in online PE lesson. Before filling the Google form, participants were asked to read through the instructions of the study. Written informed consents were obtained from participants. The study was approved by the university committee. Table 1 shows participant characteristics.

Questionnaire 1

Table 1. Demographic variables of study population (N = 204)

Variables	n	%
Gender		
Males	123	60.3
Females	81	39.7
Total	204	100
Form		
1-2	104	50.9
3-4	100	49.1
5-6	0	
Total	204	100
Type of school for teaching		
Primary School	0	0
Secondary School	204	100
Total	204	100

Table 1. Demographic variables of study population

Measurements

There are two online questionnaires. In questionnaire 1, consisted 4 parts including students' information, learning behavior, social behavior and learning motivation in Physical Education lesson during the period of COVID-19. A total of 204 students were invited to complete a survey. In questionnaire 2, in order to improve the clarity of theirs opinion, it covered four latent factors, included the personal information, the effectiveness about PE lesson, students' affective development and the suggestion.

Data analysis

The data collected for this study was analyzed by the frequency of common participants' responses and showed in percentages.

Results

General PE lesson during COVID-19 in Hong Kong

Frequency, duration and teaching mode during COVID-19 in PE lesson

The results showed that 98.6% of participants were required to attend PE lesson during the period of pandemic. In the frequency of PE lesson, there was 83.8% reported that they have about two lesson in one cycle or per week. In the time duration in PE lesson, there was 84.5% responses about 30 minutes per session. In the teaching style in PE lesson, there was 71.6% showed that both face to face PE lesson and online learning is using in school (see Table 2).

Amount	n	%
1 PE lesson per week/ cycle	15	10.1
2 PE lesson per week/ cycle	124	83.8
3 PE lesson per week/ cycle	3	2
More than 3 PE lesson per week/ cycle	6	4
Total	148	100
Duration	**n**	**%**
25 minutes	1	1
30 minutes	125	84.5
35 minutes	2	1.4
40 minutes	5	3.4
Others	15	10.1
Total	148	100
Teaching mode	**n**	**%**
Face to face	11	7.4
Online learning	31	20.9
Both	106	71.6
Total	148	100

Table 2. Amount of learning frequency, duration and the teaching mode during COVID-19 in PE lesson

Effectiveness of online PE lesson

In the effective level of PE lesson, only 4.9% students strongly agree that online PE lesson was effective. Most participants 57.3% indicated that online PE teacher was ineffective. 14.7% of them reported that online lesson was completely ineffective. 16.2% of participants strongly agree the use of video clips in online physical education was effective and 48.5% of participants reported that the use of video clips was ineffective (see Table 3). For students who were not

satisfied, the major reasons the participants expressed were “lack of motivation” (38.75%) and “lack of practical training” (30.2%) (see Table 4).

Effectiveness of online PE lesson	n	%
Strongly agree	10	4.9
Agree	47	23.1
Disagree	117	57.3
Strongly disagree	30	14.7
Total	204	100
Effectiveness of the use of video clips in physical education	n	%
Strongly agree	33	16.2
Agree	51	25
Disagree	99	48.5
Strongly disagree	21	10.3
Total	204	100

Table 3. Students’ rating on effectiveness of online PE lesson and the use of video clips in physical education

Reason	n	%
Lack of motivation	79	38.75
Lack of training time	62	30.2
Low interaction	43	19.83
Difficulty in asking question	2	1.05
Difficulty in monitor	3	2.17
Advantage	11	5
Others	4	3
Total	204	100

Table 4. Reason about the effectiveness level of PE lesson during COVID-19

Interaction of online PE lesson

The students also asked to report on the interaction during online PE lesson. Most students reported that they disagree that there was enough interaction of online PE lesson (36.8%). Among them, 27.4% was strongly disagree there was enough interaction (see Table 5). The responses expressed low interaction because of there was theory session in the class that student cannot communication with teacher and students via electronic devices (19.83%) (see Table 4).

Interaction of online PE lesson	n	%
Strongly agree	28	13.7
Agree	45	22.1
Disagree	75	36.8
Strongly disagree	56	27.4
Total	204	100

Table 5. Teachers' rating on the interaction of online PE lesson

The sense of exhaustion in online PE lesson

Participants (30.4 %) expressed there was exhausted in learning online PE lesson. 32.8% of the participants disagree that there was exhausted in the lesson (see Table 6). The main reasons to be feel not exhausted were "lack of practical space" (45.4%) and "lack of practical training" (30.2%) (see Table 4).

The sense of exhausted in online PE lesson	n	%
Strongly agree	27	13.2
Agree	63	30.4
Disagree	67	32.8
Strongly disagree	48	23.5
Total	204	100

Table 6. Students' rating on the sense of exhausted in online PE lesson

The difficulty level of participates stay in front of the devices during the online PE lesson

There was 13.7% of participants showed strongly agree that they were difficult to stay in front of the devices (see Table 7). Among them, there was 10.8% of participants reported they showed fidget with hands or leave sit during the online PE lesson (see Table 8). Most participants (41.2%) disagree that have difficulties to stay in online teaching in PE (see Table 7).

The difficulty level of participate stay in front of the devices during the online PE lesson	n	%
Strongly agree	28	13.7
Agree	50	24.6
Disagree	84	41.2
Strongly disagree	42	20.5
Total	204	100

Table 7. Students' rating on the difficulty level of participate in the online PE lesson in front of the devices

Students' showed fidget with hands or leave sit during the online PE lesson	n	%
Strongly agree	22	10.8
Agree	67	33
Disagree	68	33.5
Strongly disagree	47	22.7
Total	204	100

Table 8. Students' showed fidget with hands or leave sit during the online PE lesson

Online PE lesson increased self-learning behavior

Participants (41.1%) indicated that online PE lesson increased students self- learning behavior (see Table 9). Most participants reported that there was difficult in learning online PE lesson because lack of practice time (76.2%) and 17.5% reported that there was difficult in learning skills and 0.6% showed that lack of individual feedback during online PE lesson (see Table 10). The reasons causes increased students self- learning behavior. Among them, there was 34.4% responses showed disagree (see Table 9).

Online PE lesson increased self-learning behavior	n	%
Strongly agree	29	14.3
Agree	84	41.1
Disagree	70	34.4
Strongly disagree	21	10.2
Total	204	100

Table 9. Students' rating on the online PE lesson increased self-learning behavior

The difficulty during online PE lesson	n	%
Learning skills	25	17.5
Lack of practice time	109	76.2
Lack of demonstration	5	3.5
Lack of feedback	1	0.6
Others	3	2.2
Total	143	100

Table 10. The difficulty during online PE lesson under COVID-19

Discussion

In order to prevent pneumonia and respiratory tract infection, government and schools has forced to implement measures to minimize educational losses. The educational style change to online teaching mode through electronic media and platforms as well as the subject of Physical Education. The present study provides descriptive information on students' learning behavior in Physical Education lesson during the period of COVID-19. In the pandemic, most of the school still required to attend PE lesson, however, it was shorted the frequency and duration in PE lesson. The optimal functioning and well-being is included the needs for autonomy(e.g., experiencing a sense of volitional), competence (e.g., a sense of effectiveness), and relatedness (e.g., the sense of interpersonal relationships) (Meyer et al., 2014). Regarding to the effectiveness of online teaching in PE, most teachers indicated that online teaching was not effective to foster sports training skill and to enhance physical activity level (Lau & Lee, 2020; Zhang, 2020; Zhou & Li, 2020). In the students aspect, most students reported that online learning and the use of video clips was also ineffective. However, I found that in the respond, the video clips prepared by teachers was unilateral communication. In order to minimize the risk of injury at home, most of the teacher tend to play the competition video, recording for the theory session or the game of the rules directly. Besides, avoid in the disruption in the limited time, teacher usually mute all students in the online platform so that students could not communicate with others. This finding showed the learning process is noninteractive. As a result, students showed negative in online PE lesson. Motivation and present in online learning are the key points for student participation in class (Law et al., 2019; Widjaja, 2017). It was also supported by our finding, reason about the effectiveness level of online PE lessons, where most students reported that it was lack of motivation. Students sit in front of the computer and watching the

screen for a long time without any movement or a less practical session. Previous study mentioned that learning activities, scenarios for theory, self-assessment activities, exercises, etc., are recommended for teachers to enhance student's involvement (Rensburg, 2018). Students reported that creativity teaching strategy helps student engage in the PE lessons, they suggested that teacher could design a exercises for students or teacher do it together or take a video of demonstration for student to learn by themselves.

For the interaction of online teaching, interactive classroom should also be implemented during online lesson. Online PE lesson caused lack of experiencing in practical, the changed of learning mode caused lack of motivation and also via electronic media which made students cannot communicate with instructor, response time and absence of traditional classroom socialization. This showed difficulty for students to engage in the lesson. For effective online learning, student reported that teacher could create an interesting and providing a high interaction of learning environment such as group activities or cooperate with school which could offer school area for student's online learning. Relatedness refers to positive interaction, characterized by a sense of closeness, reflecting the extent to which teachers interact with the students in a friendly and trust (Baumeister & Leary, 1995). Li et al. (2014) indicated that online communication increased collaborative learning, fulfills the sense of satisfaction and helps for critical thinking. Technology and communication competencies are the key factors to enhance student satisfaction, but motivation and presence in online learning are the key points for student participation (Law et al., 2019; Widjaja, 2017). These findings suggested that interaction is a key element for students engaging in online learning and prompt an effective learning. In terms of online communication, breaking rooms, chat rooms and instant messaging is a virtual media for online asynchronous communication (Roper, 2007). During the online PE lesson, teacher could create a

space for students to answer the questions, observer the peer's performance and do the evaluation in order to increase the interaction.

For the sense of exhaustion, most reported that there was lack of practical space where students do it at home. Physical contact, group work and sporty dress are the key features in the PE lesson. When PE lesson was shifted to online teaching mode during COVID-19 and without these features, it is difficult for students to engage in the lesson (Varea & González-Calvo, 2020). The response elicited that school should offer school area for practical learning, to ensure that students have enough space to follow teacher instructions. While the problem of space is solved, teacher could design more creativity approaches in virtual class. This suggestion could come closer to actual PE lessons and lead students to engage in the lesson. For the self-learning, the findings showed half positive and half negative in self-learning. Students tend to discovered the skills by themselves because of lack of practical space and demonstration. Some part of the students reported that no self-learning because of they were not engaged into the class. In the sudden shift from face to face learning to online learning, is a different experience for students to learn in online mode. Meanwhile, students showed they were difficult to stay in front of the devices. In this period of pandemic, teacher and students required time to adapt in the virtual mode. Teacher could prepare themselves fully to make the best use of the virtual platforms, providing suitable materials for students to learn it at home. When students could not learn in the virtual mode immediately, they could learn from themselves and it could enhance the effectiveness of online learning. During a short duration in PE lesson per time, the authors believed teachers create opportunity for the interaction of teacher to student, student to student, it could retain students' learning motivation, enhance the learning behavior and decrease the sense of exhausted in online PE lesson. Teachers can also take video recording step by step or choose

video clips of sports activities which could provide students self- learning at home. Moreover, teacher could according to students' ability and arranging students to practice in the lessons or set an achievable target to students complete at home. Students in online-learning environments may not learn at the same pace as the physical settings. Teacher need to adjust the expectations about the progression and the outcomes, providing different strategy in virtual mode and observe students' behavior to provide feedback to the students.

Limitation

There was two limitations in the study. First, the sample size is small. The data were collected around 204 responses in questionnaire 1 and 145 in questionnaire 2. The results maybe produce false- positive results or over-estimate the magnitude. If the study would like to have a precise results, it should be produce a large studies and recruit more participate in Hong Kong. Second, there are lack of the study about teacher, school and parent's perspective during COVID-19 in online PE lesson. Further studies can be conducted to investigate the effectiveness of face to face learning, virtual mode learning and also both learning mode in student, teacher and parent's perspective.

Conclusion

COVID-19 affected the learning method in all around the world. School and educators quick adopted the curriculum into distance learning. Although online learning is proving a helpful solution to resume education, however, it is not as effective as traditional learning. This study is investing students' learning behavior in Physical Education lesson during the period of COVID-19. It take an important insight in students' perspective and showed what are the challenges of

students behavior during the short notice transition. The turns of the result among students showed negative affection. Students reported that was ineffective of online PE lesson as well as the use of video clips, it showed the unilateral communication. The responses reported that lack of interaction with teacher and students, negative in the sense of exhaustion. Moreover, the difficulty level of participates stay in front of the devices during the online PE lesson and increased self-learning behavior during online PE lessons. Teachers and educational through the study could find out the problem in student's perspective and according to their opinions, improve the effectiveness about the online PE teaching. To consider the appropriate and effective content, design an interesting virtual environments and create an similarity features in the online PE lesson as traditional PE lesson. To further improve the online learning environment and teaching practice, the better learning outcomes can be achieved.

Reference

Baumeister, R.F., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529. PubMed doi:10.1037/0033-2909.117.3.497

Conrad, D. (2006). E-Learning and social change: An apparent contradiction. In M.Beaudoin (Ed.), *Perspectives on higher education in the digital age* (pp. 21–33). Nova Science Publishers.

De Meyer, Jotie, Tallir, Isabel B, Soenens, Bart, Vansteenkiste, Maarten, Aelterman, Nathalie, Van den Berghe, Lynn, . . . Haerens, Leen. (2014). Does Observed Controlling Teaching Behavior Relate to Students' Motivation in Physical Education? *Journal of Educational Psychology, 106*(2), 541-554.

Guilar, J. D. , & Loring, A. (2008). Dialogue and community in online learning: Lessons from Royal Roads University. *Journal of Distance Education , 22*(3), 19–40.

K.M.Y. Law, S. Geng, T. Li Student enrollment, motivation and learning performance in a blended learning environment: The mediating effects of social, teaching, and cognitive presence *Computers & Education, 136* (1) (2019), pp. 1-12

Kwok K.O., Cowling B., Wei V., Riley S., Read J.M. Temporal variation of human encounters and the number of locations in which they occur: a longitudinal study of Hong Kong residents. *J R Soc Interface.* 2018;15(138) doi: 10.1098/rsif.2017.0838. pii: 20170838.

Lau, E. Y. H., & Lee, K. (2020). Parents' views on young children's distance learning and screen time during COVID-19 class suspension in Hong Kong. *Early Education and Development*, 1-18.

Li, C., Shi, X., & Dang, J. (2014). Online communication and subjective well-being in Chinese college students: The mediating role of shyness and social self-efficacy. *Computers in Human Behavior, 34*, 89-95.

O'Brien, W., Adamakis, M., O' Brien, N., Onofre, M., Martins, J., Dania, A., . . . Costa, J. (2020). Implications for European Physical Education Teacher Education during the COVID-19 pandemic: a cross-institutional SWOT analysis. *European Journal of Teacher Education*, *43*, 503-522.

Pascarella, Giuseppe, Strumia, Alessandro, Piliego, Chiara, Bruno, Federica, Del Buono, Romualdo, Costa, Fabio, . . . Agrò, Felice Eugenio. (2020). COVID-19 diagnosis and management: A comprehensive review. *Journal of Internal Medicine, 288*(2), 192-206.

Roper, A. R. (2007). How students develop online learning skills. *Educause Quarterly, 30*(1), 62.

Scull, J., Phillips, M., Sharma, U., & Garnier, K. (2020). Innovations in teacher education at the time of COVID19: an Australian perspective. *Journal of Education for Teaching*, *46*(4), 497-506.

The Lancet Child Adolescent H. Pandemic school closures: risks and opportunities. *Lancet Child Adolesc Health 2020*, 4(5):341.

United Nations Educational Scientific and Cultural Organization . (2020). *COVID-19 impact on education* .

Van Rensburg, E. S. J. (2018). Effective online teaching and learning practices for undergraduate health sciences students: An integrative review. *International journal of Africa nursing sciences, 9*, 73-80.

Varea, V., & González-Calvo, G. (2020). Touchless classes and absent bodies: teaching physical education in times of Covid-19. *Sport, Education and Society*, 1-15.