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Assessment of Online Teaching for Skill Based- Topics in Online Physical Education Classes

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Abstract

Technology is indeed helpful especially when teaching the students. The online class is just one way people teach and learn. In today's situation, technological advancements in Physical Education (PE) are highly utilized in teaching skill-based topics. This study aimed to assess the use of various digital teaching aids for skill- based topics to improve teaching and learning in online physical education. Furthermore, this study aimed to achieve the following objectives: determine the instructional materials utilized in teaching the skill- based topics; assess the extent of utilization of online teaching strategies of Physical Education teachers for dominantly skill-based topics; determine the challenges encountered by teachers in conducting online Physical Education; compare the assessments between the two groups of respondents; and lastly, propose digital teaching aids for skill- based topics in Physical Education courses. This study used a descriptive method with a researcher- made questionnaire via Google Form as the data- gathering instrument. Statistical tools used were weighted mean, composite mean, and T- test. The respondents of the study were 52 BPEd students and 29 Physical Education instructors from the Batangas State University Main 1. Findings reveal that both teachers and students effectively learn and teach physical education through the use of videos, presentations, and online platforms. The study also shows that the major problem encountered in online learning is the capability to use gadgets. As part of the recommendation, the researchers created digital teaching aids using films, presentations, and modules to improve the learning of skill-based topics for online physical education.

Keywords: Digital teaching aids, Instructional materials, Skill-Based topics, Teaching strategies

Introduction

Physical education is a program that improves intellectual knowledge and different skills of the students. It is one of the most important subjects in current educational framework. It is a unique subject which helps students improve their overall aspects such as the motor skills, emotional and mental skills, and promotes collaboration and sportsmanship among the students. It also requires the students to elicit movement responses as part of their class participation. The subjects of Physical Education are dominated by the psycho-motor domain that involves movement skills and physical fitness. However, due to the threat of the Corona Virus, schools and institutions continue their classes through the use of online platform. It is one of the alternative ways to continue the teaching and learning process. As education is happening online, teachers and students are made to explore different online platforms for both learning and instruction. Online learning is an instructional practice that deeply helps the students. It has a wide range of educational strategies that are technology-enhanced. Online education or the digital classroom do not only change how the contents are delivered, but they provide many opportunities and they also redefine the 2 traditional educational roles for learning through digital learning, students can learn at home or anywhere by simply using their gadgets such as their smartphones, laptops, and computers as their tools for learning. Through digital learning, the work of teachers in terms of disseminating their lessons becomes easier. The digital classroom is already familiar to the students and teachers since it is part of the traditional education method. Education through online or the digital class inspires collaboration because students and teachers can use mobile phones and other devices to access information and connect with the class remotely. Both teachers and students are also obliged to find and sustain resources for internet connection in order to keep pace with the online mode of learning delivery. With the incorporation of online class in the education system, teaching and learning process also changes, most especially in Physical Education program. Face-to-face classes of Physical Education which typically take place on the field, gymnasiums, and covert courts are currently held through virtual class, and online learning spaces. Online classes of Physical Education produce individual-oriented experiences for students and reduce stress when it comes to doing rigorous body movements. Online learning likewise improves students' confidence making them more efficient and prepared for their classes. It can also enhance and improve their strategies and skills (McVicker, 2018). The students of Physical Education can express themselves more and the students become more confident in performing their tasks. The online learning modality introduces new concepts in education such as synchronous and asynchronous class or even a combination of both. In asynchronous class, it is the student-teacher interaction in virtual meeting or through audio and video conferences from different locations at the same time. Learning together gives the learners and teachers the engagement in the lesson and content for their learning experiences. On the other hand, asynchronous class is a self-paced learning for students that let them work and complete their activities on their own time. The teachers provide activities and tasks through the use of different learning materials that help the students to give their full independence to complete their learning activities. In the virtual classroom environment, knowing the students how to learn more effectively and efficiently is important by the help of the alternatives such as the asynchronous and synchronous class. Other relevant concepts involved in online learning are the different instructional materials applicable to a digital classroom. Using different instructional materials gives the teachers the potential in explaining new 4 concepts clearly and helping the students in understanding what is being taught. Students learn differently, though others prefer to learn

by watching videos and listening to audio or lectures. Some people learn by reading, collaborating, and doing hands-on activities. It is important for teachers to use the effective instructional materials for the students experience and motivation to learn and how to apply their understanding. The efficiency and quality of the teaching process are improved and expanded by analyzing the instructional materials and teaching strategies used by teachers for online instruction. Understanding the different instructional materials and teaching strategies of the teachers is very important as it helps in determining the impacts of their instruction to students' learning. Students' performance in physical education is also affected by the teacher's creativity in presenting the lesson online. As part of the course, teachers use online instructional materials in imparting knowledge and skills that students are expected to acquire. Students are on the other hand, held more accountable for their learning. Physical education must be given importance in this situation since it is one of the subjects that poses a lot of adjustments after switching to online class. Online physical education classes need to teach students great sense of independence for learning. Although online education renders a wide 5 range of learning resources made available and accessible anytime, classes are inefficient and ineffective if students are not actively responsible to participate. Teachers need to develop some educational strategies that will develop students' positive behavior or attitude toward online learning. Motivating and engaging the students in physical activities will help them to convey the value of physical education. In the new mode of learning, digital teaching aids are needed to help students learn effectively. With this, the researchers were prompted to conduct a study about the digital teaching aids for skill-based topics in online Physical Education. The researchers would like to determine the digital teaching aids to improve the teaching styles of the Physical Instructors in delivering their lessons. The researchers aimed to improve the teaching and learning situation for Physical Education via online platforms. The researchers assumed that through this research, students and teachers would be enlightened about the current situation of the new mode of learning.

Methodology

This study concentrated on the use of digital teaching aids for skill-based topics in online physical education classes. The research employed a descriptive method, utilizing survey forms, interviews, and questionnaires to gather data and draw specific conclusions. According to McCombes (2020), descriptive research aims to provide an accurate and systematic description of a population, situation, or phenomenon, addressing questions such as what, where, when, and how, but not why. The descriptive method was chosen for this study because it involves gathering and collecting data and information to complete the study. The subjects of the study were Physical Education teachers, 2nd-year, and 3rd-year students of the Bachelor of Physical Education Program at the College of Teacher Education in Batangas State University-Main Campus 1. A total of 81 respondents were surveyed, including 29 Physical Education Instructors, 31 2nd-year BPED students, and 21 3rd-year BPED students, excluding the researchers. For data gathering, the researchers employed a self-constructed survey form as the data collection instrument, taking into consideration the requirements and standards for designing a good data collection instrument. The online survey form was administered through Google Forms and also distributed through messenger and email to the teachers and students. The survey responses from the Physical Education teachers and students were grouped according to the variables of the study. Scoring of responses was based on the frequency of responses, and verbal interpretations of the evaluated scores were provided.

Rank	Range	Verbal Interpretation
4	3.26 - 4.00	Always/Strongly Agree/Very Great Extent
3	2.51 - 3.25	Often/Agree/Great Extent
2	1.76 - 2.50	Sometimes Disagree/Moderate Extent
1	1.00 - 1.75	Never/Strongly Disagree/Least Extent

Results

Assessments of students and teachers on instructional materials utilized in teaching skill-based topics reveal that these materials augment instruction, leading to the development of an effective teaching-learning condition. Table 1 presents the instructional materials used by teachers in conducting their physical education classes. This table further shows the students' and the teachers' responses regarding the instructional materials used in conducting online physical education classes.

Table 1 Extent of Utilization of Online Instructional Materials for Skill-Based Topics

Instructional Materials	Students		Teachers	
	Weighted Mean	Verbal Interpretation	Weighted Mean	Verbal Interpretation
1. Printed Materials to be presented in the class are being used.	2.88	O	3.14	O
2. Still Pictures depicting figures of skill-based topics are used.	3.42	A	3.21	O
3. Presentation materials/slides that show step-by-step skill-based topics are used.	3.83	A	3.52	A
4. Films that show proper execution of skill-based topics are used.	3.69	A	3.45	A
5. Modules with topics that are skill-based are being utilized.	3.56	A	3.69	A
6. YouTube videos are being utilized.	3.67	A	3.55	A
7. Student-Created contents are being presented in class.	3.38	A	3.00	O
8. Simulations of a skill-based topic are being presented in the class.	3.35	A	3.31	A
9. E-Books about skill-based topics are being utilized in the class.	2.63	O	2.76	O
10. Real Objects such as balls, net, bats are being shown in the class.	2.75	O	3.00	O
11. Drawing and Illustrations that show the proper execution and steps in skill-based topics are being presented.	3.25	O	3.41	A
12. Tik-Tok videos are being utilized in presentations.	2.06	S	2.31	S
13. BMI - Calculator is being utilized in doing skill-based exercises.	2.71	O	2.83	O
14. Google Sites, Zoom, Google Meet, Schoology, etc. help present topics that are dominantly skill based.	3.79	A	3.69	A
15. Flip grid is being utilized in teaching skill-based topics.	2.63	O	2.83	O
Composite Mean	**3.17**	**O**	**3.18**	**O**

The table reveals that the 2nd and 3rd-year students of Bachelor of Physical education in Batangas State University agreed that presentation materials/slides are always used in teaching and learning skill-based topics for online physical education classes that got the highest weighted mean of 3.83. On the other hand, the use of Google Sites, Zoom, Google Meet Schoology, and other learning management systems in presenting skill-based topics is always used by the students in learning skill-based topics through online education is the second to the highest weighted mean of 3.79. In addition, Instructional materials such as BMI calculator is often is used by the students in learning skill-based topics in conducting online physical education which is third to the lowest that got 2.71 weighted mean. E-Book and Flip-Grid is also often used in skill-based topics in Physical Education that got the weighted mean of 2.63. Moreover, instructional materials such as Tik-Tok application is also found to be used often by the students in learning skill-based topics in online physical education. This instructional material got the lowest weighted mean of 2.06. On the other hand, the table also reveals that the teachers of physical education teachers of Batangas State University always use module and Google Sites, Zoom, Google Meet, Schoology and other learning management systems in teaching skill-based topics for online physical education that got the highest weighted mean of 3.69. Moreover, instructional materials such as YouTube and films are always utilized in teaching skill-based topics in the conduct of online physical education that got the weighted mean of 3.55. In addition, instructional materials such as presentation materials/slides in conducting online physical education are always utilized in teaching skill-based topics is the third to the highest that got the weighted mean of 3.52 in the conduct of online physical education.

Instructional materials such as BMI Calculator and Flip-Grid are often utilized in teaching skill-based topics in the conduct of online physical education which is the third to the lowest that got 2.83 weighted mean. Moreover, instructional material such as E-Book is also often utilized in teaching skill-based topics for online physical education that got the weighted mean of 2.76. Meanwhile, instructional material such as Tik-Tok application is sometimes utilized in teaching skill-based topics in the conduct of online physical education which got the lowest weighted mean of 2.31.

Table 2 Challenges Encountered Challenges in the conduct of online physical education classes

Indicators	Mean	Verbal Interpretation
1. Capability of using gadgets such as smartphones and laptops in conducting lessons.	3.48	SA
2. Tools and equipment to be used in demonstrating a skill-based topic in the class are insufficient.	3.45	SA
3. Diversity of the students makes it hard to teach skill-based topics	3.28	SA
4. Slow internet connection while presenting a lesson in the class.	3.17	A
5. Some traditional approach in teaching is not applicable in the online class.	3.17	A
6. Problem in giving feedback to the students due to the new mode of teaching.	3.14	A
7. Limited activities and exercises in the class.	3.10	A
8. Limited reliable sources for topics.	3.10	A
9. Lack of capability to demonstrate a specific skill-based topic because of limited space at home.	3.07	A
10. Lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging.	3.07	A
11. The class is monotonous.	3.03	A
12. Certain parts of the module are unclear and hard to demonstrate.	3.03	A
13. Lack of knowledge about different teaching strategies.	2.93	A
14. Lack of motivation for students to participate in the class.	2.93	A
15. The class time is not enough to demonstrate and explain any skill-based topics.	2.97	A
16. Trouble in conceptualizing a pedagogy in teaching any skill-based topic.	2.97	A
Composite Mean	**2.90**	**A**

Table 2 showed results on the challenges encountered by Physical Education teachers in conducting their physical education classes. As seen from the results, the teachers strongly agreed that the capability of using gadgets such as smartphones and laptops in conducting lessons affects the teaching process that got the highest weighted mean of 3.48. In addition, the teachers strongly agreed that the insufficiency of tools and equipment used by teachers in conducting their lesson in online physical education also affects the teaching process which got 3.45 of weighted mean. Moreover, the teachers strongly agreed that the diversity of students affects their teaching process that gained 2.28 weighted mean.

The teachers strongly agreed that the lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging as well as the lack of capability to demonstrate a specific skill-based topic because of limited space at home affect the teaching process which is third to the lowest that got 2.93 weighted mean. The teachers agreed that the lack of motivation of the students to participate in the class and the lack of knowledge about different teaching strategies affects the teaching process which is second to the last gaining

2.93 weighted mean. For the lowest that got 2.97 weighted mean, teachers agreed that the having trouble in conceptualizing pedagogy in teaching physical education affects the teaching process and also the class time which is not enough to teach the lesson in physical education that got 2.97 weighted mean.

Table 3 Challenges in the conduct of online physical education classes

Challenges Encountered		
Indicators	**Mean**	**Verbal Interpretation**
1. Capability of using gadgets such as smartphones and laptops in conducting lessons.	3.48	SA
2. Tools and equipment to be used in demonstrating a skill-based topic in the class are insufficient.	3.45	SA
3. Diversity of the students makes it hard to teach skill-based topics	3.28	SA
4. Slow internet connection while presenting a lesson in the class.	3.17	A
5. Some traditional approach in teaching is not applicable in the online class.	3.17	A
6. Problem in giving feedback to the students due to the new mode of teaching.	3.14	A
7. Limited activities and exercises in the class.	3.10	A
8. Limited reliable sources for topics.	3.10	A
9. Lack of capability to demonstrate a specific skill-based topic because of limited space at home.	3.07	A
10. Lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging.	3.07	A
11. The class is monotonous.	3.03	A
12. Certain parts of the module are unclear and hard to demonstrate.	3.03	A
13. Lack of knowledge about different teaching strategies.	2.93	A
14. Lack of motivation for students to participate in the class.	2.93	A
15. The class time is not enough to demonstrate and explain any skill-based topics.	2.97	A
16. Trouble in conceptualizing a pedagogy in teaching any skillbased topic.	2.97	A
Composite Mean	**2.90**	**A**

Similar to the traditional teaching-learning condition, conducting online classes is also faced with several challenges. Table 3 shows the results on the challenges encountered by physical education teachers in conducting their physical education classes. The items are based on the real-life experiences and as well as from the studies of other researchers. This portion was only answered by the teachers. As seen from the results, the teachers strongly agreed that the capability of using gadgets such as smartphones and laptops in conducting lessons affects the teaching process. This implies that teachers' implementation of online class is greatly affected by their limited abilities to use certain devices. The use of online technology is quite challenging due to the variety of information and functions. The study is supported by Goad & Jones (2017), in which Online Physical Education (OLPE) has become more challenging in the use of online platforms while meeting the same benchmarks, same curriculum, and the standards for assessment of the traditional courses. At this time, some limited studies and

researchers investigate how Physical Educators are trained formally in delivering their content online. In addition, the teachers strongly agreed that the insufficiency of tools and equipment used by teachers in conducting their lesson in online physical education also affects the teaching process. It suggests that due to the online class situation, the teachers are having problems about the tools and equipment to use in conducting their lesson. The students study alone in their houses and if the tools are insufficient then they cannot learn easily and quickly. This finding is supported by the study of Dyrud (2000), wherein students who often alone may feel isolated lacking social and physical communication Thus, they are not provided with the avenue to practice and perform the lessons verbally and with contact with others. Moreover, the teachers strongly agreed that the diversity of students affects their teaching process. This implies that due to the differences of the students, the teachers are having a hard time teaching the lesson. The online platform or the online class makes it harder for them to teach because online learning gives gap between teachers and students. This finding is supported by the study of Gillett-Swan (2017), wherein the diversity or the differences of the learners in their own learning and experiences in assessments adds to the difficulty level of implementing virtual classes. Moreover, the teachers strongly agreed that the lack of knowledge and skills in troubleshooting gadgets if there are problems such as lagging and hanging as well as the lack of capability to demonstrate a specific skill based topic because of limited space at home affect the teaching process. It implies that some teachers are having some difficulties utilizing other gadgets. This is supported by the study of McVicker (2018), wherein incorporating technology into physical education classes produces an individually oriented experience for students who feel reluctant about the subject. In addition, the teachers strongly agreed that the limited reliable sources and limited activities in the class affect the teaching process. It implies that if the teachers have limited sources of information, then teachers will fall short in teaching the topics and skills need to be delivered in an online class. If the class has a few activities, then the teachers also have limited sources of possible activities. This finding is supported by the study of Ahmed (2017), in which the availability of materials and other learning resources affects teachers' ability to facilitate an online class. Meanwhile, the teachers agreed that the having trouble in conceptualizing pedagogy in teaching physical education affects the teaching process. This implies that in teaching physical education, teachers must know what strategy to use in order for the students to learn more. If the teacher continues to practice those strategies and pedagogy then they will be able to teach students easily. This finding is supported by the study of Burne et al. (2018), that through self-study of their practice, students learn that digital technologies that can potentially enhance learning only when certain conditions are met. Furthermore, the teachers agreed that the class time which is not enough to teach the lesson in physical education also affects the teaching process. It implies that the given time is not enough for them to teach skill-based topics since it needs time to execute a specific skill. Currently, this may even be aggravated by the weak internet connectivity of the teachers and students alike. Due to the slow internet of some teachers, class time is reduced to a certain extent. This finding is supported by the study of Keengwe & Kidd (2010), wherein slow internet connection, incompatibility of the hardware and software, and lack of orientation for the students are some of the problems occurring in online learning.   In addition, the teachers agreed that the lack of motivation of the students to participate in the class and the lack of knowledge about different teaching strategies affects the teaching process. It implies that the teachers are faced with the challenge of strategizing to make the students participate the class. Since it is online class, the teachers are still experimenting different strategies in physical education. This is supported by the study of Hyun & Wi-Young (2020), stating that physical education teachers from lack the expertise to teach skill-based topics online resorting

to trial-and-error methods. This will affect the learners' knowledge and understanding regarding a specific topic. In addition, the teachers agreed that some parts of the module are unclear for them, that is why it is hard to teach a specific lesson to the class as well as the class being monotonous also affects the teaching process. It implies that modules have unclear discussion about the topic. Online instructions can be used to give students the manual and the steps in doing certain activities and performances. In addition, online instructions or simulations increase the understanding and knowledge of students through open-ended and interactive questioning (Lamb & Annetta, 2013). For classes being monotonous, the teacher must adopt new style of teaching in order to give excitement to the class. If the teachers are plainly explaining the topic, then students will soon lose their interest to participate in online class. The teachers must also give insights and feedback to the students to initiate interaction. Furthermore, the teachers also agreed that the problems in giving feedback to the students due to the new mode of teaching also affects their teaching process. It implies that feedback is important in the class, the teacher must give feedback to the class to avoid confusion to the students. This finding is supported by the study of Hyun & Wi-Young (2020), wherein it is conceivable that the lessons in online physical education are more effective if the student gets and accepts feedback in observing the actions of their colleagues. In addition, the teachers agreed that the slow internet connection while presenting a lesson in the class and some traditional approaches in teaching also affect the teaching process. This finding is supported by the study of Keengwe & Kidd (2010), stating that slow internet connection, challenges the conduct of online learning. This is also supported by Fuegen (2012), wherein that the use of gadgets or devices can improve the experiences in online learning by the improvement of the communication. Additionally, traditional methods may be found not suitable for conducting online class especially if such method requires in-person activities.

Table 4 Comparison of Assessments of the Two Groups of Respondents**.** Difference in the Utilization of Instructional Materials and of Online Teaching Strategies as Assessed by Teachers and Students

Utilization	tc	pvalue	Decision on H_o	Verbal Interpretation
Instructional Materials	0.043	0.966	Do not Reject	Not Significant
Online Teaching Strategies	-0.053	0.958	Do not Reject	Not Significant

df = 79 α = 0.05

Table 4 showed that there is no significant difference on the assessments of the students and the teachers regarding the utilization of instructional materials. This implies that both students and the teachers have the same perspective regarding the effectiveness of instructional materials used in conducting online physical education. In the same way, there is also no significant difference on the assessment between teachers and students regarding the utilization of online teaching strategies.

Discussions

Physical education teachers often utilize various instructional materials in teaching skill-based topics for online physical education. This implies that physical education teachers must improve the instructional materials used in teaching skill-based topics in online physical education. With the improvement of the instructional materials, the teachers will be more capacitated to teach skill-based topics and help students learn the necessary competencies for physical education the teachers agreed that there are several challenges affecting the physical education teachers' conduct of online classes. It implies that it is difficult to teach skill-based topics if there are challenges hampering the effective implementation of physical education online classes. These challenges need to be addressed in order to ensure successful conduct of physical education online sessions. Generally, the teachers agreed that there are several challenges affecting the physical education teachers' conduct of online classes. It implies that it is difficult to teach skill-based topics if there are challenges hampering the effective implementation of physical education online classes. These challenges need to be addressed in order to ensure successful conduct of physical education online sessions. This also implies that both students and teachers have their same perspective regarding the teaching strategies used in conducting online physical education. It is safe to conclude that teachers and students provide a positive assessment toward the effectiveness of utilizing various instructional materials and teaching strategies in teaching skills-based topics for physical education online classes.

Conclusion and suggestions

Based on the findings of the study, the following conclusions are drawn: 1) BPEd students can learn skill-based topics easily by the use of presentation materials/slides as an instructional material while the teachers of physical education usually use Module and Google Sites, Zoom, Google Meet, Schoology, etc. as their instructional materials in conducting skill-based topics. 2) PE students can acquire knowledge about online teaching strategy through the use of demonstration and performance assessment of the skills-based topics whereas 3) PE teachers greatly consider the use of module presentation as an effective online strategy for teaching skill-based topics via online. 4) Teachers' capability of using gadgets, insufficiency of the tools and equipment to be used in demonstrating a skill-based topic in the class, and the diversity of the students are the most commonly encountered challenges in teaching skills-based lesson in online Physical Education classes. 5) There is no significant difference between the teachers and students' assessment regarding the utilization of online teaching strategies. 6) The proposed digital teaching aids are aimed at assisting students and teachers alike under Physical Education Program in learning and teaching skills-based topics and conducting online physical education classes effectively. As for the recommendation, the respondents recommend the following: 1) the proposed digital teaching aids may be utilized by both Physical Education students and teachers in learning and teaching skills-based topics during online Physical Education classes. 2) A webinar on the use of various digital application tools may be conducted to capacitate Physical Education teachers in facilitating virtual PE classes and teaching skills-based lessons more effectively. 3) Other alternative learning modalities may be explored so as to address issues on internet connectivity. 4) Follow-up researches encompassing other variables may be conducted to ensure validity and reliability of the results obtained in this paper.

New knowledge and the effects on society and communities

Access to Quality Education: Digital teaching aids can potentially improve access to quality education in physical education for students, including those in underserved areas. This technology allows students to access resources and instruction from skilled teachers and experts worldwide. Community and social interaction while online education can sometimes be seen as isolating, it can also facilitate the creation of virtual communities. Students can connect with peers and instructors through discussion forums, live video sessions, and social media platforms. As the integration of digital teaching aids in online physical education classes continues to evolve, it's important for educators, institutions, and policymakers to be aware of the potential benefits and challenges associated with this shift. Addressing issues of accessibility, inclusivity, and the development of best practices for online physical education instruction will be critical for ensuring that these tools have a positive impact on society and communities also in future of online physical education: Hybrid Learning Models: The future may see a blend of in-person and online physical education, where digital teaching aids can serve as supplementary tools for both remote and in-person instruction. Continuous Innovation: Technology is constantly evolving. The future of online physical education will likely incorporate innovations like virtual reality, augmented reality, and artificial intelligence to enhance the learning experience. Health and Wellness Integration: As part of online physical education, there is an opportunity to educate students about holistic health and wellness, promoting a balanced lifestyle, nutrition, and mental health.

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