



The impact of video-based presentations on BPED students' learning performance

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ABSTRACT

The main objective of this study was to determine and evaluate the effectiveness of video-based presentations in providing physical education instructions. This quantitative research used a quasi-experimental which was participated by 46 students taking Bachelor of Physical Education (BPED) in one of the tertiary schools in the Philippines which were assigned into two intact groups: experimental and control groups. The study used ANOVA to find a significant difference at 0.05 level in time variables within the group with a p-value of <0.001. It means that there are changes in the pre-test and post-test scores. As a result, it makes a substantial effort to support in the deepening and continual attainment of the learning competencies expected of future Physical educators through video-based presentations. Based on the findings of the study, as the driving factor for attaining the aforementioned goals, teachers must have an interest in learning and grow through professional growth, and self-improvement, as well as the academic performance of the students through the development and improved learning, it means that there are changes in the pre and post scores. This study will be the baseline of information for future researchers who will do comprehensive research on video-based presentations and the integration of technology in the delivery of Physical Education teachings.

Keywords: Video-based; digitalized modules; physical education

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INTRODUCTION

Educators today have a mountainous challenge in terms of teaching and learning. Because of the situation caused by the pandemic in our social environment, we are in the process of learning and it was challenging for all of us, including teachers, students, and parents. The teaching professionals are increasingly taking advantage of new videos for instruction (Yip et al., 2019). Moreover, Centeio et al. (2021) teachers were delighted to receive videos and tasks from their students performing activities and exhibiting that they were physically active at home. Many teachers were pleased to see students participate in synchronous video classes as well as daily tasks. Students may collaborate and experience difficulties in the new educational shift. Through international discourse, O'Brien et al. (2020) reiterates that teacher education has the capacity to progress to more positive and dynamic forms of academic delivery. Managing resources and utilization, support, technological competence development, goal setting, and adjust to different regulation were the most frequently used strategies by students (Barrot et al., 2021).

The goal of incorporating differentiated instruction into the learning experience is to recognize how school is a dynamic system that needs adjustment to be meaningful and successful. It is essential in the teaching and learning process of adapting to changes and overcoming challenges using various techniques and strategies and barriers and providing students with a positive learning opportunity. Future research outcomes may include to demonstrate the requirement to improve resource structure (Zhang, 2021). In remote learning, it is very difficult to deliver instruction, especially in physical education. Learning competencies are mostly the creation or performance of what they have learned in the modules. Teachers think of ways to deliver the lesson properly and reach each student. Moreover, Murthykumar et al. (2015) attested that video-based presentations appear to enhance student achievement significantly particularly compared to traditional lecture-based.

In connection with the relevant literature that proves effective video-based delivery methods, it will also measure the resilience of each student to take all means to achieve physical education goals, especially to be able to participate in physical activities. Thus, Zhang (2021) addressed the effectiveness of video technologies in engaging and communicating which suggest that such a strong commitment is feasible helped students progress beyond technological replication to critical and logical thinking. As the very reason of the endeavors in research, it will be valuable in delivering effective instruction in learning and doing performances in Physical Education amidst pandemics. PE must guarantee that the profession is ready to adapt and stay current with the ever-changing landscape in light of the ongoing trend to digitalize education (Wyant & Baek, 2019). Thus, the point of delivering instruction to students especially as they become more engaged in performance-based activities and attain the competence to engage them in vigorous activity, teachers create a way to help each student collectively simultaneously reaching out to promotion and engagement to students through technology specifically providing video-based learning.

Students should be fully exploit to the use of video-based presentations as a tool in boosting their physical education performances with the guidance of the video-based presentations which were based on teachers' work tailored to the objectives and content to be delivered to students. With these, Giannakos and Vlamos (2013) assess the potential of video-based technology in education aim to establish a research on subject area, in which you can consider about what the next generation on using video-based instruction and how these data can assist our awareness along with increasing the value of video-based learning. Video-based instruction in the classroom refers to a teacher creating videos that specifically teach a concept or content outside of class contact hours. It means the teacher gets full control over content delivered in the videos, and that different levels of films can be developed to meet the needs of different students (Nasab et al., 2002). Because of this, the teacher and the school are adapting new innovations to deliver the instruction to the students in any way that the student can afford. One of these is the incorporation of technology that trains every teacher to keep up with the rapid changes in the educational setting using technology, collaboration by enhancing their technological capabilities and keep up with the trend on educational setup. Video-based instruction has become extremely prevalent in the education. And can explore the greatly expanded opportunities provided by digital spaces that can both support or encourage student-centered development (Giannakos & Vlamos, 2013). While there are some good ideas for continuous motor learning online, the most of them were being geared toward staying active and improving fitness through active participation and demonstration method by providing them guided videos in engaging in physical activities.

According to [Mujiono and Gazali \(2020\)](#) to the articles found and analyzed, the digital learning paradigm could be used in physical education with the Schoology portal approach and video blogging and can also be used during virtual learning with an integrated effort. Because of developments in technology's accessibility and adaptability, teachers are progressively utilizing video to help them develop more engaging and interactive teaching and learning experiences ([Major & Watson, 2018](#)). This is proof that teachers and students can keep up with the changes that can be used in teaching and learning. Simultaneously with the awakening among students that it is all impossible to reach education despite the pandemic we face, students thought video-recorded presentations integrated into the learning environment were incredibly useful in boosting learning outcomes and enriching classroom teaching ([Tugrul, 2012](#)).

The K-12 Curriculum enhanced the teaching and learning process by emphasizing student-centered instruction including the use of innovation, and physical education benefits students in a variety of ways by integrating cognition in relevant, diversified educational instructions. With the study of [Praetorius et al. \(2017\)](#) pertaining to teacher's attention drawn to research goals which has a huge change occurred over time. As a result, we cannot overlook the fact that teachers value students that can explore areas of the classroom during video-based assessment. This study shows the impact of video-based presentations on each student in a unique way, as well as the challenges in the learning and teaching process in physical education, in which flexible education was a new trend and blessing to the education systems, allowing learners to learn, which is beneficial to their learning capabilities and skills, as well as their ability to adapt to changing circumstances. Similarly, teachers can now integrate technological capabilities into their lessons by using just a computer and a video as assessment tools where students became more engaging than they've been previously ([Yousef et al., 2014](#)).

The purpose of this study is to see how effective video-based presentations are at enhancing physical education performance in BPED students as they learn different physical activities. The video was created by the teacher and can meet the learning competencies and reflect the goals, that students can view at their convenience at home. Similarly, [Albó et al. \(2019\)](#) attested that video-based instruction provides more positive results in terms of students' attitudes where video engagement, collaboration practices, and the holistic behavior was present. Video-based cooperative learning practices should be considered carefully and designed to improve the comfort and satisfaction of students. At the same time, [Lowenthal and Moore \(2020\)](#) articulated that there was a purpose that asynchronous content instruction is so prevalent today where discussions and deliver can access on their own pace of time. Asynchronous text-based discussions are diverse and beneficial for a variety of purposes. As a result, using this intervention to motivate students to seek out learning and performing online content presentations may be developed, and the projected outcome could then be implemented in the real world while adjusting to their own learning style and pace of time. Digital learning's preparedness, acceptance, and application are examined and if technology is not accepted, welcomed, and effectively used, it will not be able to improve learning ([Zhou et al., 2022](#)).

As [Hidayat \(2020\)](#) revealed that the application of Project-Based Instructional methods to Physical Education, which was performed separately in each student's home, was very effective and delivered a learning opportunity like face-to-face instruction. The current learning environment has expanded the demand for educators' time and capability to use technology, as well as the necessities for them to do so successfully and efficiently. In physical education, video-based training has received little attention as a key teaching modality. Teachers can create videos to teach complex skills by focusing on

one to two components and considering students' attention spans. Online remote learning helps learning opportunities more convenient and easier. High self-efficacy, like other forms of schooling, can lead to an increase individual independence and flexibility (Prior et al., 2016).

Video technology offers the ability to expose pre-service teachers to rich and diverse teaching settings as well as create flexible ways of conveying and integrating information about teaching. Similarly, El-Ariss et al. (2021) assert that technological advancements were driven by the growing teaching approaches and practices. Consequently, studies have shown that video learning media has a wide impact on improving students' increase knowledge; further research is being done to investigate if video learning media is effective in improving students develop the skill (Nadeak & Naibaho, 2020). The Internet is important in providing individuals with access to the information that was previously inaccessible. Technological innovations and inventions are therefore having a significant impact. This study implies that it is very evident that teachers must be collaborative and innovative in the teaching and learning process and must adapt to the ever-changing educational landscape in using technology.

As the use of video-based instructions grows and benefits all aspects of teaching and learning, it has become the norm for all teachers, including future PE educators, to educate that there are multiple ways to offer teaching, one of which is video-based. Nowadays, technology has a big role in reaching the students and attaining the addressed goals of the curriculum. Overall, the achievement and attitude were considerable in which cognitive support tools functioned well in a responsible for many different study particularly the used of technology (Schmid et al., 2014). In relation with the study, results will serve as an avenue for PE teachers how video-based enhance the learning of the students and teachers facilitating it. Furthermore, Lu et al. (2020) assert that teachers can show what intentional teaching and learning looks like in school PE classes by using curated videos. With the recent study, the teacher should be encouraged to learn how to employ animations or video games to inspire students to participate in a variety of enjoyable physical activities using technology to enhance the teaching of physical education may help to create student-centered discovery experiences in which students are active for the bulk of the class (physically, cognitively, and socially). Similarly, video-based instructions highlight how video is just another component of training that may be used in conjunction with a variety of well-supported evidence-based instructional approaches where the goal is to gain a better grasp of why and when to utilize video, as well as a better comprehension of how to use video (Ayres et al., 2017). The video was made by the teacher and able to meet the learning competencies and addressed goals of the curriculum where students can access in their home with their own time, they had a chance to imagine that they were still inside their home but only on the screen could they see and hear their teacher.

According to the research Keath et al. (2016), K-12 PE teachers have a stronger inclination to focusing on student learning, utilize technology that are generally used for teacher effectiveness. In terms of learning resources, teachers are primarily taught about using technology through interactive learning sources. Teachers are facing a difficult task in achieving the goal and meeting the learning requirements of Physical Education. When used correctly, technology can be used to enhance rather than distract from physical active engagement in learning. Moreover, they will learn the performances with the help of prepared videos. One factor that affects the learning of the students was able to watch instructional videos that could supplement and complement their learning. Teachers were able to learn, unlearn and relearn skills in the ICT integration. The theory of

connectivism was to make instructional gaps in delivering instruction (Goldie, 2016). With the main purpose of the study that establishes a virtual classroom and becomes innovative, it was an eye-opener to the educators are beginning to realize how the world has a fast-paced pin accepting technology as the new trend in education. With these, it widens the perspective on establishing an approach that would be responsive to the students, specifically in video-based presentations.

About the study, connecting your world to the modern world of using technology is a key to developing your aspect as a student and as a teacher because it shows the evolution in learning and capabilities in the new approach in the teaching and learning process. Moreover, pre-test and post-test were being used to evaluate their learning outcomes before and after treatment, indicating that using videos to study and perform in Physical Education can benefit the students (Puspaningtyas & Marchamah, 2020). This study's approach would be beneficial in achieving the goals of this research, such as coming up with results and recommendations that video-based influences students' learning outcomes. Moreover, there was a big impact on the level of performance of the students that can be responsive to the needs of the students through video-based instruction, it helps in increasing the mean and MPS of a section and performance of a student. This study unlocks the individual capacity on learning using video-based presentations.

Each individual has become imaginative and creative in performance as well as in giving instruction as a challenge in the modern world of teaching and learning. The utilization of video-based presentations as a driving force is one of the vehicles used to better comprehend and guide each student. As a baseline of information and experience for Physical Education teachers, this study will show how video-based presentations improved students' learning performance. In general, the study aims to address the challenges that students have when doing learning activities. This study was developed with the intent of identifying the students' learning experiences of the students taking Bachelor of Physical Education in the areas of dance, physical activities, and preparation for a career in teaching that focuses on physical education.

METHOD

Research Design

The study utilized a quasi-experimental pretest and posttest design which was employed by first year students taking Bachelor of Physical Education (BPED) to investigate their learning experiences in using video-based presentations. Quasi experiments are used to demonstrate causation between an intervention and an outcome as reiterated by White and Sabarwal (2014), this research method determines and analyzes the outcomes of comparison groups that are similar to the treatment group. This design has two intact groups: the experimental and control group. Two classes will assign as an experimental and control group. The experimental group was the students using video-based presentations while the control group was students with digitalized modules. As explained by Puspaningtyas and Marchamah (2020), pre-test and post-test were being used to evaluate their learning outcomes before and after treatment, indicating that using videos to study and perform in Physical Education can benefit the students.

Participants

The respondents were first year students taking Bachelor of Physical Education (BPED) who were assigned to have different learning styles with different strategies: digitalized modules and video-based. One section of 23 students is assigned to the

experimental group which will be using video-based presentations, whereas another 23 students will be assigned to the control group predominantly in the digitalized module approach. The research instrument in this study was a self-made pre-test and post-test made by the researcher. It is in a multiple-choice consisting of 20 items. In doing the pre-test and post-test activity, it also used the Table of Specification to formulate questions and validated by an expert in Physical Education.

Data Analysis

Data were collected and analyzed using the JASP Software. The mean and standard deviation were used for the study to determine if there has been improvement and the distinction between participant's pretest and posttest both from experimental and control groups, whereas the Analysis of Variance (ANOVA) was used to determine if there is a significant difference in student's learning performance while using video-based presentations versus digitalized module approach.

Ethical Concerns

As confidentiality and privacy will be maintained, there will be no hazards for those who take part in the study. To respect the privacy of all participants in this study, each participant must agree to hold the information shared by all participants and the researcher confidential during the conduct of the study. There are no conflicts of interest in this research.

RESULTS AND DISCUSSION

Table 1. Within Subjects Effects

Cases	Sum of Squares	df	Mean Square	F	p
Time	78.533	1	78.533	23.802	< .001
Time * Group	4.793	1	4.793	1.453	0.235
Residuals	145.174	44	3.299		

Note. Type III Sum of Squares

The table shows that the ANOVA found a significant difference at 0.05 level in time variables within the group with a p-value of <0.001. It means that there are changes in the pre-test and post-test scores. As [Stratton \(2019\)](#) explained that the pre- and post-test designs were utilized in evaluation of respondents' thoughts or perceptions about a situation, or to assess the learnings implemented knowledge, as indicated by increased post-test scores when compared to a pre-test indicates greater understanding or by accelerating effect when an intervention was conducted.

Furthermore, [Zientek et al. \(2016\)](#) pretest and posttest statistics on participants randomized to a control or experimental group would be collected for the purpose of the research setup. Results from a study specifically found into whether instruction enhanced learning, capabilities, or behaviors would enable have progress. Likewise, [Puspaningtyas and Marchamah \(2020\)](#) notions on the used of pre-test and post-test were being used to evaluate their learning outcomes before and after treatment, indicating that using videos to study and perform in Physical Education can benefit the students.

The application of Project-Based Instructional methods to Physical Education, which was performed separately in each student's home, was very effective and delivered a learning opportunity like face-to-face instruction ([Hidayat, 2020](#)). The current learning environment has expanded the demand for educators' time and capability to use

technology, as well as the necessities for them to do so successfully and efficiently. In physical education, video-based training has received little attention as a key teaching modality. With these, [Giannakos and Vlamos \(2013\)](#) assess the potential of video-based technology in education, aim to establish a research on subject area, in which you can consider about what the next generation on using video-based instruction and how these data can assist our awareness along with increasing the value of video-based learning .

As experiences on the lack of internet connection and technology equipment and devices are commonly expressed issues. As a result, the truth was just that we had to be strategic and develop an intervention to allow students to learn and enrich our instructional core and meet the needs of our students. This study was very timely to find out if the strategy to deliver instruction is effective especially for Physical Education teacher-students who prepare them for physical learning activities. Learning various tasks in physical education, particularly physical activities such as dance, basic skills, or physical duties, is challenging yet worthwhile.

Table 2. Descriptive Statistics of Pre-Test and Post-Test Result

Time	Group	Mean	SD	N
Pre	Control	13.13	2.262	23
	Experimental	13.522	1.928	23
Post	Control	14.522	1.904	23
	Experimental	15.826	1.302	23

Descriptive statistics shows that experimental group's score is higher than the control group in both pretest and post-test. The study's findings suggest that the control group employing digitalized materials had a mean pre-test score of 13.13 and a post-test score of 14.5. While experimental group received 13.5 on the pre-test and 15.8 on the post-test after receiving video-based instruction. As a result, participants in the experimental group who accepted video-based instructions had excellent performance.

Moreover, [Harris et al. \(2004\)](#) the hierarchy of quasi-experimental research design in terms of ability to show causal correlations between an intervention and an outcome. Each individual has become imaginative and creative in performance as well as in giving instruction as a challenge in the modern world of teaching and learning. The utilization of video-based presentations as a driving force is one of the vehicles used to better comprehend and guide each student. As [Murthykumar et al. \(2015\)](#) attested that video-based presentations appear to enhance student achievement significantly particularly compared to traditional lecture-based. With the results, the research design used to demonstrate causation between an intervention and an outcome as reiterated by [White and Sabarwal \(2014\)](#) this research method determines and analyzes the outcomes of comparison groups that are similar to the treatment group. This design has two intact groups: the experimental and control group Over the same period of time, the control group receives no treatment but is subjected to the same tests. By determining the effects of the two groups, more comparisons may be made with the learning tool employed in this study, which will serve as the foundation for improvement.

In terms of teaching and learning, today's educators have a daunting task. We are in the process of learning as a result of the pandemic's impact on our social environment. It was difficult for everyone involved, including instructors, students, and parents. Teaching professionals are increasingly using new films for instruction, according to [\(Kleftodimos & Evangelidis, 2016\)](#). As a result, we needed to be smart and build an intervention to allow children to learn and deepen our educational foundation while also meeting their needs. Teachers were also happy to receive films and tasks from their pupils performing

activities and demonstrating that they were physically active at home (Centeio et al., 2021).

The video was created by the teacher and can meet the learning competencies and reflect the goals, that students can view at their convenience at home. Similarly, Albó et al. (2019) attested that video-based instruction provides more positive results in terms of students' attitudes where video engagement, collaboration practices, and the holistic behavior was present. According to the research Keath et al. (2016), K-12 PE teachers have a stronger inclination to focusing on student learning, utilize technology that are generally used for teacher effectiveness. Video-based cooperative learning practices should be considered carefully and designed to improve the comfort and satisfaction of students. As Armstrong et al. (2011) emphasized that written methods are much less successful than video-based learning in teaching knowledge and encouraging participation. Similarly, student engagement can be boosted through video-based flipped class experience (Armstrong et al., 2011). Despite their diversity, students can easily adapt and understand the lesson when providing video and instruction giving clear instructions. Its use of interactive content in the videos is the most recent trend, and instructive videos with multimedia elements and online information were shown.

Table 3. Test for Equality of Variances (Levene's)

	F	df1	df2	p
Pretest	1.089	1	44	0.302
Post Test	2.148	1	44	0.15

Table 3 shows that Levene's test shows that the homogeneity assumption was unviolated. There is no significant difference in the variances of pretests at 0.05 with a p-value of 0.302 and no significant difference in the variances of the post-tests at 0.05 level with a p-value of 0.15. Levene's test is an inferential statistic used in statistics to evaluate variance equality (Vogt, 2015). Most standard statistical procedures assume the population variances are equal which is something the various samples are drawn are similar. Moreover, the assumption of homogeneity of variance underpins both t-tests and F tests (analyses of variance, ANOVAs), in which the population variances observed variables are deemed equal (Salkind, 2012).

Table 4. Post Hoc Test

		95% CI for Mean Difference					
		Mean Difference	Lower	Upper	SE	t	Ptukey
Control, Pre	Experimental, Pre	-0.391	-1.889	1.106	0.555	-0.705	0.895
	Control, Post	-1.391	-2.871	0.089	0.536	-2.597	0.059
Experimental, Pre	Experimental, Post	-2.696	-4.193	-1.198	0.555	-4.86	< .001
	Control, Post	-1	-2.497	0.497	0.555	-1.803	0.279
Control, Post	Experimental, Post	-2.304	-3.784	-0.824	0.536	-4.302	< .001
	Experimental, Post	-1.304	-2.802	0.193	0.555	-2.351	0.094

The Post Hoc Comparisons Table shows that the -0.391-mean difference in Control Group Pretest Scores and Experimental Group Pretest scores was insignificant with a p-value of 0.895, which is greater than 0.05. It means they have almost the same knowledge level about the topics to be discussed before the experimentation begins. It also shows a

mean difference of -1.304 with a p-value of 0.094 between the post-tests of the two groups, which is also insignificant at the 0.05 level. However, the difference of -2.304 in the pretest and post-test of the experimental group is significant at 0.05 with a p-value of <0,001, while the -1.391 difference in the post-test and pretest of the control group was not significant at 0.05. Therefore, the video-based materials are effective.

In physical education, video-based training has received little attention as a key teaching modality. Teachers can create videos to teach complex skills by focusing on one to two components and considering students' attention spans. Online remote learning helps learning opportunities more convenient and easier. High self-efficacy, like other forms of schooling, can lead to an increase individual independence and flexibility (Prior et al., 2016). Furthermore, Lu et al. (2020) assert that teachers can show what intentional teaching and learning looks like in school PE classes by using curated videos. With the recent study, the teacher should be encouraged to learn how to employ animations or video games to inspire students to participate in a variety of enjoyable physical activities using technology to enhance the teaching of physical education may help to create student-centered discovery experiences in which students are active for the bulk of the class (physically, cognitively, and socially). According to Mujiono and Gazali (2020), the digital learning paradigm could be used in physical education with the Schoology portal approach and video blogging and can also be used during virtual learning with an integrated effort. Because of developments in technology's accessibility and adaptability, teachers are progressively utilizing video to help them develop more engaging and interactive teaching and learning experiences (Major & Watson, 2018). As El-Ariss et al. (2021) assert that technological advancements were driven by the growing teaching approaches and practices. Consequently, studies have shown that video learning media has a wide impact on improving students' increase knowledge; further research is being done to investigate if video learning media is effective in improving students develop the skill (Nadeak & Naibaho, 2020). Furthermore, Nimmerichter et al. (2015) emphasize on the study that utilizing video-based visual training enhances decision-making time and responsive agility sprint time, as well as the number of quality decisions. The use of video-based education has a good influence, as seen by the comparison of before and after usage. Despite the risks and problems of using the online modality, teachers and students have remained firm in their pursuit of their desired outcome.

CONCLUSIONS

Engage in continuous learning as a weapon for discovering new skills and adapting to changes when you want to be effective in delivering instruction. One should respond to and tackle the barriers and developments that are occurring in the world of education. Therefore, findings revealed that they have about the same level of knowledge about the topics to be discussed before the experimentation begins. It also shows that the difference between the post-tests of the two groups is not significant. However, the difference in the pretest and post-test of the experimental group is significant while the difference in the post-test and pretest of the control group was not significant. Significantly, the video-based materials are effective. This study will be the baseline of information for future researchers who will do comprehensive research on video-based presentations and the integration of technology in the delivery of Physical Education teachings.

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