**European Journal of Physical Education and Sport Science**
ISSN: 2501 - 1235
ISSN-L: 2501 - 1235
Available on-line at: www.oapub.org/edu

DOI: 10.46827/ejpe.v12i2.5800 Volume 12 | Issue 2 | 2025

# THE EFFECTIVENESS OF VIDEO MODELING INSTRUCTION IN ONLINE TERTIARY PHYSICAL EDUCATION

**Maria Shaina J. Tolentin,**
**Montano L. Tapanan Jr[i],**
**Trisha Mae A. Abella,**
**Arachel L. Galanza,**
**Jennifer C. Raganas,**
**Jacquiline B. Visitacion,**
**Jan Hector Y. Obando,**
**Leonil E. Cabungcal,**
**Wyndell A. Casquejo,**
**Louanna S. Castanares**
University of San Jose-Recoletos,
Cebu City, Philippines

**Abstract:**
**Background and Aim of the Study:** This study aims to investigate the effectiveness of video modeling instruction in online Physical Education by assessing the observational learning on PE skills of the PATHFIT 3 students of the University of San Jose-Recoletos. **Material and Methods:** This study used a quantitative survey research design to determine the effectiveness of video modeling instruction in online Physical Education (PE) for PATHFIT students. This study utilized descriptive statistics to describe the duration in minutes of the instructor's video instruction, the frequency of using the video during online PE classes, the frequency of watching the instructor's video by the students, and their performance scores. while descriptive statistics was used to analyze the collected survey questionnaire data from 121 respondents. **Results:** The results indicated that video modeling instruction was perceived as highly effective in students' observational learning of PE skills. Results indicate no correlation between the student's performance in PE skills, the video instruction's perceived effectiveness, duration of video instruction, frequency of using video by the teacher, and frequency of watching the video by the students. **Conclusions:** The effectiveness of video modeling instruction is prevalent in terms of the teacher's frequency in playing the video to aid the skill development in tertiary Physical Education. Video modeling instruction is directly correlated and bound to be effective with the students' frequency of watching the video. With the students we have at present, the number of times they watch the video modeling

[i] Correspondence: email montano.tapanan@gmail.com

 

instruction matters in their learning of the execution of the skill breakdown and movement pattern. Therefore, they need more time to watch and observe the skill demonstration presented through the video modeling instruction because it will yield an effective increase in attention, motivation, production, and performance. With the short duration of the teacher's instructional videos of 3 to 5 minutes, the teacher's utilization of its instructional videos 3 to 4 times, the students will acquire and master the PE skills demonstration with repeated watching of the skill demonstration and enough time to practice.

**Keywords:** video modeling, instruction, online tertiary physical education

## 1. Introduction

Physical Education (PE) is a field that has traditionally relied heavily on demonstration, direct instructions (Graham *et al.*, 2001), and interactive teaching (Rink, 1998) in presenting information and teaching skills to students (as cited by William & Hodges, 2004; Law, 2007; Eisenhauer, 2020). Unfortunately, with the unprecedented COVID-19 global outbreak, several educational institutions are challenged to shift to an online learning environment, including the delivery of PE. This abrupt transition to online learning platforms demands that PE teachers modify their instructional strategies to ensure the continuity and achievement of their core goal using distance-learning tools (Filiz & Konukman, 2020). One teaching tool that is commonly used is video-based instruction, which includes video modeling (Lee & Chang, 2021). Hence, this paper intends to investigate the effectiveness of video modeling instruction in online tertiary physical education.

Furthermore, PE is dominated by movement and fitness education content, providing students with a broad spectrum of physical activities (CHED, 2017). One of its main goals is directed toward the optimum development of students' fitness and physical skills, which enhance one's ability to experience satisfying and healthy lifestyles (Lubis, 2019). Online Physical Education (OLPE) is an alternative method to deliver physical education outside the physical classroom (SHAPE America, 2018, as cited in Buschner, 2006; Daum & Buschner, 2014; Mosier, 2012). Moreover, it is a subset of online education, in which instruction and content are delivered primarily over the Internet (Mohnsen, 2012, as cited in Wicks, 2010). Differing only in the mode of delivery and instructional approach, the PE standards, curriculum, and assessment remain the same (Mohnsen, 2012). PE instructors employ different practices to aid the instruction of practical skills from fitness, dance, and sports courses, including recorded videos (Go, 2020; Filiz & Konukman, 2020). Demonstrating desired behaviors and target skills through a pre-recorded video is called video modeling (Bellini & Akullian, 2007; Huddleston, 2019; Judge & Morgan, 2020).

Demonstrating desired behaviors and target skills through a pre-recorded video is called video modeling (Bellini & Akullian, 2007; Huddleston, 2019; Judge & Morgan, 2020). Video modeling (VM) is a method of instruction that allows subjects, i.e., students, to watch other persons as a model, i.e., teachers, executing skill breakdown into discrete movements in a video clip. It also allows the former to learn and replicate the modeled task at one's own pace (Canella-Malone *et al.*, 2015; Duivenvoorden *et al.*, 2016; Wert-Fittipaldi, 2007; as cited in Huddleston, 2019). Yuan, Wang & Zhao (2015) stated that students learn and master technical movements with video instruction as they can repeatedly watch and imitate the skills. Its utilization allows students to pause, rewind, and watch again, allowing for personalized learning of the components of skills.

Several studies have supported that video modeling has brought significant changes in physical education and physical training programs (Amara *et al.*, 2015; Baudry *et al.*, 2006; Palao *et al.*, 2015, as cited in Liang, 2019; Barzouka *et al.*, 2015) and in sports over the past century. It resulted in being effective in enhancing athletic performance and learning a wide variety of sports, including tennis (Rikli *et al.*, 1980; Hager *et al.*, 2004), golf (Bertram *et al.*, 2007), basketball (Harle *et al.*, 2001), football (Smith *et al.*, 2006), swimming (McKenzie *et al.*, 1974), gymnastics (Wolkko et *al.*, 1993; Bouazizi *et al.*, 2014; Boyer *et al.*, 2009), handball (Sadeghi*et al.*, 1983), ballet (Fitterling *et al.*,1983) (as cited in Suby, 2019). It assists professional athletes in improving the accuracy and efficacy of motor performance and facilitates beginning and inexperienced learners' acquisition of motor skills (Liang, 2019). For example, novice climbers performed a more efficient climbing movement pattern. They liked using advanced climbing techniques from observing an expert video modeling compared to the other group (Amara *et al.*, 2015). In Duivenvoorden *et al.* (2016) study, participants demonstrated improved motor learning of swinging and forward rolling more quickly after viewing expert video modeling of gymnastics skills compared with coaching and individual practice alone (as cited in Suby, 2019).

Various studies on video modeling have stated the positive effects of using video modeling in assisting the process of motor acquisition and enhancing motor skills and performance. For example, Zetou *et al.* (2002) obtained favorable results for acquiring and retaining skills in volleyball. Similarly, the study conducted by Vernadakis and colleagues (2006) supported that viewing from a skilled model was more effective than oral explanations in learning the setting skill in volleyball (as cited in Jarraya *et al.*, 2019). Janelle *et al.* (2008) suggest that verbal information and visual cues enhance perceptual representation and retention of modeled activities that improve task reproduction capabilities. Moreover, the repeated watching of the demonstrated skill and auditory and visual prompts facilitate the retention and improved memory representation of the learned information and skill (Shipley-Benamou *et al.*, 2002, as cited in Obrusnikova & Rattigan, 2016; Suby, 2019). Subsequently, this leads to the production of the task through practice (Corbett & Abdullah, 2005). In the study of Obrusnikova & Cavalier (2016), which involved preschoolers, they reported that children had increased potential to improve their skill production accompanied by more significant time for skills practice (as cited Obrusnikova & Rattigan, 2016). Moreover, Charlop-Christy (2003) noted that watching a video can be intrinsically and automatically reinforcing for young students as it serves as a novel tool.

The study of Suby (2019), which involved using and implementing an online video modeling library in survival swimming courses, revealed that 77% of participants of different ability groups rated the video model's usefulness. It also increases their perceived performance of skills events as "moderately to extremely high" for each swimming event. Furthermore, he examined the relationship between the number of times viewing the video models of the graded skills leading up to participants' performance and overall performance score. He reported few significant interactions between the frequency of students' view of video models and performance, either by individuals or groups. Although statistical significance was not found to support video modeling affecting performance, practical significance was established to increase students' perceived understanding and performance.

With various related studies and literature investigated by the researchers, most of these involve preschoolers, children with special needs, and grades-school and secondary-level students as participants and are conducted in international classroom-based settings. The overall implementation and effectiveness of video-modeling instruction within higher physical education courses in online learning environments still need to be discovered. In light of the recent events that affected the education setup, there is considerable concern about adapting video modeling instruction. Due to the infancy of OLPE in our country, emphasis on student self-learning through video-based instruction, and scarcity of studies in OLPE settings. It is imperative to examine further the effectiveness of video-modeling instruction, fundamental video modeling, i.e., teachers are the models in the tertiary level of Physical Education. Thus, this research aims to fill the gap in the knowledge and contribute to the professional literature surrounding online physical education and the use of video modeling instruction by PE teachers.

With this in mind, this study seeks to investigate the effectiveness of video modeling instruction in the online physical education of PATHFIT students at the University of San Jose-Recoletos. Furthermore, this research aims to acquire information on the effectiveness of video modeling by assessing students' observational learning of PE skills in terms of attention, retention, production, and motivation. Also, this proposes to assess student's observational learning in terms of:.

a) the duration of the instructor's video,
b) the frequency of using the video in online PE classes,
c) the frequency of watching the instructor's video by the students, and
d) their performance scores.

In addition, this study aims to determine whether there is a significant correlation between students' performance in PE skills and the following:

a) perceived effectiveness of video modeling instruction,
b) duration of video modeling instruction,
c) frequency of using video modeling instruction in online PE class,
d) and the frequency of watching the video modeling instruction by the students.

## 2. Materials and Methods

### 2.1 Participants

The research study was conducted entirely online with the PATHFIT 3 students in the University of San Jose-Recoletos as the target respondents, selected through the quota sampling method. Quota sampling, a type of non-probability sampling, is used to examine a portion of the population being studied and generalize the findings to the broader population (Rukmana, 2014). Through quota sampling, the researchers identified and ensured that the respondents met the set criteria according to the intended research objectives. The inclusion criteria for the selection of respondents were the following: (a) must be a bonafide student in the USJ-R; (b) must be enrolled in the online PE 3 course for the first semester in the academic year 2021-2022, and (c) must be exposed to video modeling by their PE instructor/s. The sample size of this study consisted of 121 PATHFIT 3 students. It was calculated using the sample size calculator, with a confidence level of 95% and a population proportion of 10%. The research instrument utilized in this study was composed of two sections. The first section was a researcher-made survey questionnaire to elicit information about the research objective.

The researchers utilized a modified standardized Observational Learning Questionnaire by Bullock (2014) in the second section. It was a 40-item instrument, scaled from 1 (Strongly Disagree) to 4 (Strongly Agree), that measured PATHFIT student's observational learning of PE skills, specifically its four precepts: (1) attention, (2) retention, (3) production, and (4) motivation (Yi & Davis, 2003, as cited in Bullock, 2014). The original questionnaire is scaled from 1 (Strongly Disagree) to 10 (Strongly Agree). As for the scale's reliability, the construct's internal consistency dependability is at least.986 Cronbach's alpha level implies that it is acceptable for the research. The original questionnaire is developed to assess observational learning in the physical education classroom. The statements are adapted to indicate observational learning of the PE skills through video modeling instruction for use in online PE classes rather than in traditional physical education classrooms.

### 2.2 Research Design

This study used a quantitative survey research design to determine the effectiveness of video modeling instruction in online Physical Education (PE) for PATHFIT students. This study utilized descriptive statistics to describe the duration in minutes of the instructor's video instruction, the frequency of using the video during online PE classes, the frequency of watching the instructor's video by the students, and their performance scores. Through descriptive statistics, the researchers will be able to retrieve the average profile of students' observational learning in the areas mentioned above. Pearson's correlation with an alpha level set at /0.01 is utilized to determine the significant correlation between students' performance of PE skills in terms of perceived effectiveness. Meanwhile, Spearman's correlation with the alpha level set at 0.05 is utilized to determine the correlation between students' performance of PE skills. In terms of duration of minutes, frequency of using video, and frequency of watching the video upon determining the relationship between attention, retention, production, and motivation in the effectiveness of video modeling.

## 3. Results

This section presents the results of the descriptive statistics and analysis of the collected survey questionnaire responses. The researchers interpreted the results to make meaningful interpretations.

**Table 1:** Duration of Instructor's Video

| Minutes | Frequency (N) | Percentage (%) | Mean | Standard Deviation | Interpretation |
|---|---|---|---|---|---|
| 1 | 1 | 0.8 | 3.85 | 2.44 | Short |
| 2-3 | 75 | 62 | | | |
| 4-5 | 29 | 24 | | | |
| 6-8 | 8 | 6.6 | | | |
| 9-10 | 7 | 5.8 | | | |
| 20 | 1 | 0.8 | | | |
| **Total** | **121** | **100** | | | |

Table 1 presents the duration of the recorded instructional videos of the skill demonstration given by the respondent's PE teachers in their online class. It shows that 2-3 minutes is the most frequent duration of a PE teacher's recorded instructional videos, with a frequency of 75 (62%). The results show a weighted mean of 3.85 minutes, which indicates a short duration. Therefore, to make the video modeling instruction of the PE teacher effective, the duration of the instructional video should be three to five minutes. This supports the view of Weiner that keeping the instructional video short, within 2 to 5 minutes is the optimum length of instruction (as cited by Lee & Chang, 2021).

**Table 2:** Frequency of Using Instructional Video by the Teacher

| Times | Frequency (N) | Percentage (%) | Mean | Standard Deviation | Interpretation |
|---|---|---|---|---|---|
| 1-2 | 47 | 38.80 | 3.19 | 1.63 | Often |
| 3-4 | 50 | 41.30 | | | |
| 5-6 | 18 | 14.90 | | | |
| 7+ | 6 | 5.00 | | | |
| **Total** | **121** | **100** | | | |

Table 2 indicates the number of times PE teachers use recorded instructional videos in their online classes based on the respondents. The highest number of times teachers utilize instructional video is 3-4 times, with a frequency of 50. On average, the PE teachers use recorded instructional videos often, with a weighted mean of 3.19 times. This implies that PE teachers often use recorded instructional videos to demonstrate PE skills in their online classes. Therefore, for video modeling instruction to be effective, PE teachers should utilize it regularly. This supports the view that instructors who use video modeling regularly enhance students' understanding and confidence in the graded skill performance (Suby, 2019).

**Table 3:** Frequency of Watching the Instructional Video by the Students

| Times | Frequency (N) | Percentage (%) | Mean | Standard Deviation | Interpretation |
|---|---|---|---|---|---|
| 1-2 | 65 | 53.70% | 3.17 | 1.55 | Often |
| 3-4 | 33 | 27.30% | | | |
| 5-6 | 15 | 12.40% | | | |
| 7+ | 8 | 6.60% | | | |
| **Total** | **121** | **100%** | | | |

Table 3 shows that 53.7% of the respondents watched the recorded instructional video one to two times to learn the PE skill demonstration. Meanwhile, only 6.6% of them watch more than seven times. On average, they watch the video modeling instruction 3.17 times. This implies that the regular tertiary students watch the instructional video three times in order for them to acquire a deep understanding and mastery of the PE skill demonstration. This result implies that for the video modeling instruction to be effective, PE teachers need to present the video instruction a maximum of three times.

**Table 4:** Rating on the Skill Demonstration after Watching the Instructional Video

| Performance Scores | Frequency (N) | Percentage (%) | Mean | Standard Deviation | Interpretation |
|---|---|---|---|---|---|
| 60-70 | 2 | 1.70% | 92.27 | 6.9 | Excellent |
| 71-80 | 7 | 5.80% | | | |
| 81-90 | 22 | 18.20% | | | |
| 91-100 | 76 | 62.80% | | | |
| NA | 14 | 11.60% | | | |
| **Total** | **121** | **100%** | | | |

**Note:** 60-70 needs improvement; 71-80 satisfactory; 81-90 good; 91-100 excellent.

Table 4 presents the respondent's skill demonstration rating after watching the instructional video. On average, the respondents got an excellent rating of 92.67 on their return video demonstration. Given the recorded instructional video, there is an increase in students' acquisition and skill development based on the teacher's rating. Therefore, in students' skill development in online Physical Education, the recorded instructional videos are bound to be an exemplary learning resource. It is an aid for the PE teachers in developing the student's acquisition and mastery of the skill competence. This supports that video modeling enhances students' motor skill acquisition and performance (Liang, 2019).

**Table 5:** Student's Observational Learning in Terms of Attention

| Items | Mean | Standard Deviation | Interpretation |
|---|---|---|---|
| 1. I paid close attention to the teacher's PE skill demonstration in the instructional video. | 3.62 | 0.52 | Very High |
| 2. I was able to accurately perceive the PE information demonstrated by the teacher in the instructional video. | 3.40 | 0.54 | Very High |
| 3. I found the teacher's skills demonstration in the instructional video salient and prominent. | 3.50 | 0.60 | Very High |
| 4. I was able to concentrate on the teacher's PE skill demonstration in the video. | 3.41 | 0.63 | Very High |
| 5. I found the teacher's skill demonstrations in the video easy to follow. | 3.21 | 0.79 | High |
| 6. I focused on the PE skills presented by the teacher in the instructional video. | 3.45 | 0.60 | Very High |
| 7. The teacher's PE skills demonstration in the instructional video held my attention. | 3.33 | 0.62 | Very High |
| 8. I was able to follow the detailed procedural steps demonstrated by the teacher in the instructional video. | 3.25 | 0.71 | High |
| 9. The teacher's PE skill demonstration in the instructional video is interesting. | 3.42 | 0.60 | Very High |
| 10. During the teacher's skill demonstration in the instructional video. I am absorbed by the demonstrated activities. | 3.26 | 0.60 | Very High |
| **Grand Weighted Mean** | **3.38** | **0.63** | **Very High** |

Table 5 above presents the respondents' responses in their agreement to the items regarding their observational learning of PE skills in terms of attention to the video modeling instruction. With the grand weighted mean of 3.38, the respondents perceived the recorded instructional videos of their PE instructors to be very highly effective. Item #1 got the highest mean of 3.63, which indicates that respondents paid close attention to the teacher's PE skill demonstration in the instructional video. Meanwhile, item #5 got the lowest mean, which indicates that they found the teacher's skill demonstration in the video relatively not easy to follow. These results suggest that the video instruction allows the respondents to direct their attention to the teacher's skill demonstration; however, they perceive the teacher's skill demonstration as uneasy about imitating. This supports that observing a model's (i.e., teacher) demonstration utilizing video restricts the field of focus of the students (Liang, 2019; Obrusnikova & Rattigan, 2016; Charlop-Christy *et al.*, 2000; Bandura). However, as mentioned by Bandura (1969), the level of expertise of the model (i.e., teacher) relative to the observer (students) has been shown to influence their observational learning. Adams (19860) recommended that novice students learn more from models similar to themselves than models they cannot imitate (as cited in Ferrari, 1996).

Table 6 below presents the respondents' responses in agreement with the items regarding their observational learning of PE skills, in terms of retention, to the video modeling instruction. Item #15 got the highest mean of 3.07 because respondents can mentally visualize most of the demonstrated PE skills shown in the instructional video. Meanwhile, item #20 got the lowest mean of 2.80 because respondents found summarizing the demonstrated PE skills shown in the instructional video relatively uneasy. This suggests that respondents can convert the observed PE skill demonstration into a memory image representation. However, they found it difficult to mentally rehearse the relevant elements of the PE skill demonstrated in the instructional video.

**Table 6:** Student's Observational Learning in Terms of Retention

| Items | Mean | Standard Deviation | Interpretation |
|---|---|---|---|
| 11. I accurately remember the activities demonstrated by the teacher shown in the instructional video. | 3.01 | 0.67 | High |
| 12. I can recall the demonstrated PE skill with specific procedural steps shown in the instructional video. | 2.93 | 0.69 | High |
| 13. I remember the critical elements of the demonstrated PE skills shown in the instructional video. | 2.97 | 0.63 | High |
| 14. I have not forgotten the essential parts of the teacher's PE skill demonstration shown in the instructional video. | 2.93 | 0.68 | High |
| 15. I can mentally visualize most of the demonstrated PE skills shown in the instructional video. | 3.07 | 0.65 | High |
| 16. I can verbally express most of the demonstrated PE skills with the specific procedural steps shown in the instructional video. | 2.89 | 0.64 | High |
| 17. I remember the details of the PE teacher's skill demonstration shown in the instructional video. | 3.02 | 0.61 | High |
| 18. I have accurate mental images of the skills demonstrated by the PE teacher shown in the instructional video. | 2.82 | 0.75 | High |
| 19. I can recall the procedural steps that have been demonstrated by the teacher shown in the video. | 2.91 | 0.62 | High |
| 20. It will not be difficult for me to summarize the demonstrated PE skills shown in the instructional video. | 2.8 | 0.76 | High |
| **Grand Weighted Mean** | **2.93** | **0.67** | **High** |

Table 7 presents the respondents' responses to the statements related to the observational learning of PE skills in terms of production. A total mean of 3.00 indicates that respondents agree with the statements related to the production of the observed demonstrated skill through practice. Item #30 got the highest mean of 3.19, which indicates that the respondents agree with the statement that they have a clear understanding of how to integrate the demonstrated PE skills to complete a similar PE task. Meanwhile, items #21 and 23 both got the lowest mean of 2.91, which indicates that they could not accurately imitate the demonstrated PE skill and combine them to solve similar problems. This supports that the reproduction of skill will be initially faulty if the learner does not have the basic sub-skills required (Bandura, 1997). Also, actual feedback may be required to perform the physical skill and use the model's strategy correctly (Ferrari, 1996).

**Table 7:** Student's Observational Learning in Terms of Production

| Items | Mean | Standard Deviation | Interpretation |
|---|---|---|---|
| 21. I can accurately reproduce the demonstrated skills shown in the instructional video. | 2.91 | 0.77 | High |
| 22. I can apply the learned PE skills to new problems. | 2.94 | 0.73 | High |
| 23. I know how to combine the demonstrated PE skills to solve similar problems. | 2.91 | 0.68 | High |
| 24. I can perform the demonstrated PE skills. | 3.11 | 0.64 | High |
| 25. I will have no difficulty in using the learned PE skills. | 3.01 | 0.66 | High |
| 26. I can put the learned PE skills to use for similar problems. | 2.93 | 0.67 | High |
| 27. I know how to orchestrate component procedures to perform the demonstrated PE tasks production. | 2.94 | 0.55 | High |
| 28. I think I can interact with PE skills to perform the demonstrated PE operations. | 3.1 | 0.58 | High |
| 29. I had enough practice of the demonstrated PE skills. | 2.99 | 0.66 | High |
| 30. I have a clear understanding of how to integrate the demonstrated PE skills to complete a similar PE task. | 3.19 | 0.62 | High |
| **Grand Weighted Mean** | **3** | **0.66** | **High** |

Table 8 shows the respondents' responses to the statements related to the observational learning of PE skills in terms of motivation in the video modeling instruction. The grand weighted mean of 3.12 indicates they perceived the instructional video to be highly effective in motivating them to master and use the learned PE skills. Item #39 got the highest mean of 3.31, which indicates that they will feel rewarded if they master the demonstrated PE skills. Meanwhile, item # 34 got the lowest mean of 3.04, which indicates that they relatively do not have strong determination to master the learned PE skills. Bandura (1986, 1991) stated that individuals gain satisfaction from self-challenge and adopting goals as a new standard. However, the satisfaction derived from the activity depends on the value it can be applied by the individual (As cited by Ferrari, 1996).

**Table 8:** Student's Observational Learning in Terms of Motivation

| Items | Mean | Standard Deviation | Interpretation |
|---|---|---|---|
| 31. My motivation to use the learned PE skills from the instructional video is high. | 3.07 | 0.64 | High |
| 32. My motivation to master PE learned skills is high. | 3.05 | 0.65 | High |
| 33. Throughout the lessons, my motivation to learn the PE skills was high. | 3.09 | 0.66 | High |
| 34. I have a strong determination to use the learned PE skills. | 3.09 | 0.63 | High |
| 35. I have strong determination to master the learned PE skills. | 3.04 | 0.74 | High |
| 36. Throughout the lessons, I had strong determination to learn the demonstrated PE skills. | 3.08 | 0.66 | High |
| 37. Learning the demonstrated PE skills is important to me. | 3.21 | 0.67 | High |

| | | | |
|---|---|---|---|
| 38. I think that others regard the demonstrated PE skills as important. | 3.17 | 0.63 | High |
| 39. It will be rewarding if I master the demonstrated PE skills. | 3.31 | 0.59 | Very High |
| 40. My situation requires me to learn the demonstrated PE skills. | 3.14 | 0.61 | High |
| **Grand Weighted Mean** | **3.12** | **0.65** | **High** |

Table 9 below presents the correlation between respondents' performance scores and their observational learning of PE skills regarding attention, retention, production, and motivation. The results indicate no correlation between the student's performance score and the perceived effectiveness of the instructional video in terms of the precepts of observational learning of the students. The result implies that students with high-performance scores do not perceive the video modeling instruction to be highly effective in their observational learning of PE skills.

**Table 9:** Relationship of Student's Rating of Their Skill Demonstration and the Perceived Effectiveness of Video Modeling Instruction in Terms of Student' Observational Learning

| **Observational Learning** | **Pearson r** | **P value** | **Interpretation** |
|---|---|---|---|
| Attention | 0.004 | 0.969 | Not Significant |
| Retention | 0.086 | 0.379 | Not Significant |
| Production | 0.114 | 0.244 | Not Significant |
| Motivation | 0.055 | 0.57 | Not Significant |

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

**Table 10:** Relationship of Student's Rating on Their Skill Demonstration and Duration of the Instructor's Video, Frequency of Using Instructional Video in Classes by the Teacher and Frequency of Watching the Video by the Students

| **Spearman** | | **Attention** | **Retention** | **Production** | **Motivation** | **Performance Score** |
|---|---|---|---|---|---|---|
| Duration of the instructor's video | Correlation Coefficient | -0.177 | -0.156 | -0.142 | 0.005 | 0.66 |
| | p value | 0.052 | 0.087 | 0.119 | 0.957 | 0.498 |
| | | | | | | 107 |
| Frequency of using instructional video in classes by the teacher | Correlation Coefficient | 0.088 | 0.15 | 0.069 | 0.017 | 0.076 |
| | p value | 0.34 | 0.101 | 0.45 | 0.856 | 0.435 |
| | | | | | | 107 |
| Frequency of watching the video by the students | Correlation Coefficient | 190* | 0.16 | 215* | 231* | -0.063 |
| | p value | 0.036 | 0.08 | 0.018 | 0.011 | 0.521 |
| | | | | | | 107 |

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Table 10 presents the correlation between rating student's skill demonstration and the duration of the teacher's instructional video, frequency of using instructional video in classes by the teacher, and frequency of watching the video by the students. Results show that the duration of minutes, the teacher's frequency of using instructional videos, and the frequency of watching the videos by students are greater than the significance level of 0.05. The instructor's video's duration has a marginal correlation with attention, with a p-value of 0.052. On the other hand, the frequency of using instructional video has shown no significant correlation with a student's skill demonstration rating. The frequency of watching the video modeling instruction increases students' attention, production, and motivation, with a p-value of 0.036 and 0.018, respectively.

## 4. Discussion

The results show that the most frequent duration of instructional videos was 2-3 minutes, with a weighted mean of 3.85 minutes. This aligns with Weiner's recommendations, which Lee and Chang (2021) reference, that instructional videos should be kept brief. Ideally, no more than two to five minutes to maximize interest and efficacy. The video's comparatively brief running times imply that PE teachers may have adjusted to the demands of an online learning environment, including attention span issues and time limits. However, it is essential to consider whether somewhat longer videos to three to five minutes might better balance student engagement and material delivery, particularly for sophisticated skills that call for a more thorough demonstration. Future research might examine the effects of varied durations on various PE skill kinds.

According to the study results, PE teachers utilized instructional videos 3.19 times on average in every lesson in their online classes. This supports the claim made by Suby (2019) that consistent video modeling improves students' comprehension and self-assurance in their ability to execute skills. The regularity with which videos are used suggests that educators have successfully incorporated this resource into their lesson plans. However, the shallow frequency (about three to four times) begs whether using it more frequently could produce more significant results, particularly for children with different learning requirements. Even though the results support the benefits of regular video consumption, more investigation is needed to determine the ideal frequency for maximizing learning outcomes.

The data shows that students, on average, watched the instructional videos 3.17 times, indicating a clear trend of repeated viewing for mastery of PE skills. This behavior underscores the importance of repeated exposure to the instructional content for skill acquisition, as Bandura's (1969) observational learning theory supports. Interestingly, while most students watched the videos 1-2 times, a small percentage watched them more than seven times, suggesting that certain students may require more repetition for effective learning. This highlights the need for differentiated instruction strategies to accommodate students with diverse learning preferences and abilities. A deeper investigation into how individual learning styles affect video usage could offer valuable insights for PE educators.

After watching the instructional video, the high average rating (92.67) for students' skill demonstration suggests that video modeling significantly enhances skill acquisition and performance. This result aligns with Liang's (2019) findings that video modeling improves motor skill acquisition. The increase in students' performance highlights the effectiveness of instructional videos as a learning tool in PE. However, this study needs to explore the long-term retention of these skills, which could be an essential area for future research. It would be beneficial to study whether the skills learned via video modeling are retained over time and how they translate into more complex physical tasks.

The respondents' perceptions of the effectiveness of instructional videos in terms of attention, retention, production, and motivation offer a nuanced view of their learning experiences. Regarding attention, the highest-rated item indicated that students paid close attention to the skill demonstrations, although some found it difficult to follow the teacher's moves precisely. This supports the idea that video instruction focuses students' attention on critical aspects of the skill, as Liang (2019) and Obrusnikova and Rattigan (2016) suggest. However, the difficulty in imitation indicates the potential need for additional scaffolding or feedback to support student learning.

While most students were able to practice and summarize essential concepts mentally, they needed help visualizing the retention skills that were presented. This is consistent with Bandura's (1997) theory that mental repetition is frequently necessary for retention and simple observation. The gap between students' ability to retain and rehearse suggests that PE instructors may need to implement follow-up activities or assessments to reinforce retention.

In production, while students felt they understood how to apply the demonstrated skills, they reported challenges in accurately imitating and combining them to solve new problems. This finding supports Ferrari's (1996) claim that reproducing a skill is difficult without a solid grasp of sub-skills and feedback. Incorporating peer or teacher feedback, as well as opportunities for practice, could help bridge this gap.

Furthermore, while some needed more will to dedicate themselves to the work, most students were driven to learn PE abilities. This implies that although intrinsic elements such as self-efficacy and goal-setting, as highlighted by Bandura (1986, 1991), also play essential roles, video modeling can be an effective motivator. In order to create long-term motivation, PE teachers can benefit from techniques that increase students' self-confidence and assist them in setting realistic goals.

Interestingly, the study revealed no connection between students' performance ratings and how useful they thought the instructional videos were for observational learning. This finding is at variance with earlier research, including that of Bandura (1969) and Liang (2019), which hypothesized that performance should be positively impacted by observational learning via video modeling. This surprising outcome could have been explained by high-achieving students not needing as much video modeling to improve because they already have a strong foundation in the necessary abilities. Low-achieving pupils view the movies as more beneficial because they require more assistance. Investigating individual characteristics such as past knowledge or learning preferences can provide more clarification.

While this study offers valuable insights into video modeling in online PE classes, several limitations exist. First, the study primarily relies on self-reported data, which may introduce bias in the respondents' perceptions of the instructional videos. Second, the study needs to account for long-term skill retention or transfer to real-world physical activities, limiting the scope of the conclusions drawn about the overall effectiveness of video modeling. Finally, there needs to be a control group or comparison to other teaching methods to isolate the effect of video modeling alone.

Future research could address these limitations by incorporating longitudinal studies to assess skill retention and using experimental designs to compare video modeling with other instructional methods. Additionally, exploring the impact of individual learner characteristics, such as prior experience or motivation, could provide a more understanding of how video modeling influences learning outcomes in PE.

## 5. Conclusions

In this section, provide a concise summary of the main findings and their implications. Reiterate the key contributions of your study and how they align with the research objectives or hypothesis. Emphasize the practical significance of your results and their potential impact on the field. Avoid introducing new information or ideas in this section; instead, focus on summarizing what has been discussed in the previous sections. Consider addressing any limitations and suggesting directions for future research. End with a strong concluding statement that leaves a lasting impression on the reader, reinforcing the importance of your work.

### Conflict of Interest Statement

The authors declare no conflicts of interest.

### About the Author(s)

**Maria Shaina J. Tolentin**, School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.
ORCID: https://orcid.org/0009-0002-3216-5515
Email: mariashaina.tolentin@usjr.edu.ph
**Montano L. Tapanan Jr.**, School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.
ORCID: https://orcid.org/0000-0003-3676-411X
Email: montano.tapanan@gmail.com
**Arachel L. Galanza,** School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.

ORCID: https://orcid.org/0009-0009-3875-0193
Email: arachel23galanza@gmail.com
**Trisha Mae A. Abella**, School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.
ORCID: https://orcid.org/0009-0003-0169-6011
Email: trishamae.abella@usjr.edu.ph
**Jennifer C. Raganas**, School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.
ORCID: https://orcid.org/0009-0000-3204-0443
Email: jennifer@usjr.edu.ph
**Jacquiline B. Visitacion**, School of Education, Department of Physical Education, University of San Jose-Recoletos, Philippines.
ORCID: https://orcid.org/0009-0004-6154-149X
Email: jacquiline@usjr.edu.ph

## References

Huddleston, R. (2019). Teaching Physical Education Skills to a Student with a Disability Through Video Modeling. David O. McKay School of Education; Counseling Psychology and Special Education, https://scholarsarchive.byu.edu/etd/7510/

Janelle, C. M., Champenoy, J. D., Coombes, S. A., & Mousseau, M. B. (2003). Mechanisms of attentional cueing during observational learning to facilitate motor skill acquisition. *Journal of Sports Sciences, 21*(10), 825-838. https://doi.org/10.1080/0264041031000140310

Jarraya, M., Rekik, G., Belkhir, Y., Chtourou, H., Nikolaidis, P. T., Rosemann, T., & Knechtle, B. (2019). Which presentation speed is better for learning basketball tactical actions through video modeling examples? The influence of content complexity. *Frontiers in Psychology, 10,* 2356. https://doi.org/10.3389/fpsyg.2019.02356

Judge, J. P., & Morgan, K. N. (2020). Video Modeling: Strategies to Support Physical Activity in Children With Autism Spectrum Disorder. *Palaestra, 34*(2). https://doi.org/10.58809/jehl6345

Lee, J., & Chang, S. H. (2020). Video-Based Learning: Recommendations for Physical Educators. *Journal of Physical Education, Recreation & Dance*, Volume 92, Issue 2. https://doi.org/10.1080/07303084.2021.1854018

Liang, H. (2019). The Effectiveness of Video Modeling with Video Feedback on a Given Piece for Mid-to-late Elementary Piano Students (Doctoral dissertation, University of South Carolina). https://doi.org/10.21070/ups.1858

Lubis, F. T. (2019). The Bachelor of Physical Education program in higher education institutions towards the development of an enhanced curriculum. *PEOPLE:*

*International Journal of Social Sciences*, *4*(3), 1306-1318. https://doi.org/10.20319/pijss.2019.43.13061318

Mohnsen, B. (2012). Implementing online physical education. *Journal of Physical Education, Recreation & Dance*, *83*(2), 42-47. https://doi.org/10.1080/07303084.2012.10598727

Mosier, B. (2012). Virtual physical education: A call for action. *Journal of Physical Education, Recreation & Dance*, *83*(3), 6-10. https://doi.org/10.1080/07303084.2012.10598734

Obrusnikova, I., & Rattigan, P. J. (2016). Using video-based modeling to promote the acquisition of fundamental motor skills. *Journal of Physical Education, Recreation & Dance*, *87*(4), 24-29. https://doi.org/10.1080/07303084.2016.1141728

Quinn, M., Narozanick, T., Miltenberger, R., Greenberg, L., & Schenk, M. (2020). Evaluating video modeling and video modeling with video feedback to enhance the performance of competitive dancers. *Behavioral Interventions*, *35*(1), 76-83. ttps://doi.org/10.1002/bin.1691

Raedts, M., Rijlaarsdam, G., & Van Waes, L. (2006). Observational learning through video-based models: impact on students' accuracy of self-efficacy beliefs, task knowledge and writing performances. *Writing and motivation, 219.* ps://doi.org/10.1163/9781849508216_013

Rudd, J. R., O'Callaghan, L., & Williams, J. (2019). Physical education pedagogies built upon theories of movement learning: How can environmental constraints be manipulated to improve children's executive function and self-regulation skills?. *International journal of environmental research and public health*, 16(9), 1630. https://doi.org/10.3390/ijerph16091630

Rukmana D. (2014) Quota Sampling. In: Michalos A.C. (Ed.). Encyclopedia of Quality of Life and Well-Being Research. (pp. 311-1). Dordrecht: Springer Netherlands.

Society of Health and Physical Educators (2018). Guidelines for K-12 Online Physical Education. https://www.shapeamerica.org/uploads/pdfs/2020/guidelines/Online-PE-Guidance-Document.pdf.
https://doi.org/10.1123/jtpe.2018-0169

Suby, J. A. (2019). Effective Use and Implementation of Video Modeling in a Survival Swimming Course (Doctoral dissertation, The University of North Carolina at Greensboro).

Ward, P., Hodges, N. J., & Williams, A. M. (2004). Deliberate practice and expert performance: Defining the path to excellence. In Skill acquisition in sport (pp. 255-282). Routledge. https://doi.org/10.4324/9780203646564-18

Yuan, S., Wang, C., & Zhao, Y. (2015). On the Development of Web-based Distance Physical Education. In SHS Web of Conferences (Vol. 19, p. 02005). EDP Sciences. https://doi.org/10.1051/shsconf/20151902005

Zetou, E., Tzetzis, G., Vernadakis, N., & Kioumourtzoglou, E. (2002). Modeling in learning two volleyball skills. *Perceptual and motor skills, 94*(3_suppl), 1131-1142. https://doi.org/10.2466/pms.2002.94.3c.1131