Is Video-Conferencing Helpful for Physical Education Classes in the New Normal? A PLS-SEM Analysis Adopting the Technology Acceptance Model

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Keywords	**Abstract**
educational technology, e-learning, partial least square-structural equation modelling, physical education	Research shows that videoconferencing tools can be used for delivering high-quality instruction in real-time to a large number of students simultaneously during and even in the aftermath of the pandemic. However, there is a lack of data on how favourable it is among students, particularly in the Philippine setting, in the field of Physical Education (PE). In this regard, this study aimed at inspecting exogenous factors linked to students' acceptance of a video-conferencing platform in learning knowledge- and skill-based concepts in Physical Education through the adaptation of the Technology Acceptance Model. After performing the Partial Least Square-Structural Equation Modelling from a purposively selected sample of 250 teacher education students, the results showed that perceived ease of use (PEOU) positively affected perceived usefulness (PU). It was also found that PEOU and PU impacted behavioural intention. Lastly, behavioural intention (BI) positively leverages actual use of the Zoom platform. It can be inferred that students can benefit greatly from using the video-conferencing platform to learn various PE concepts. Moreover, another surprising discovery was that students could use the platform to efficiently learn, thus capitalising on the university's educational system, even in the New Normal.

Introduction

Despite the problems faced by both instructors and students, online learning, distance and continuing education have proven a panacea for this historic worldwide pandemic (Stankovska et al., 2022). During the strike of the deadly Covid-19 virus, most especially in the Philippines, certain higher education institutions in the country established proactive policies for the continuation of education notwithstanding the closure in response to the needs of learners, notably of the 3.5 million tertiary-level students enrolled in about 2,400 HEIs (Joaquin et al., 2020; Lim et al., 2022). Online education in its adapted forms is included in these regulations because of its potential to improve students' educational experiences. Now, after the onslaught of Covid-19 , most HEIs around the world have shifted to what is referred to as the new normal in education (García-Morales et al., 2021). There are many ways in which e-learning has benefited educational institutions in general, and even considering the advent of this new normal, it will continue to be of tremendous assistance to HEIs in their efforts to offer their students an

excellent educational experience (Pokhrel & Chhetri, 2021). Scholars agree that e-learning has many benefits, including adaptability, convenience, and student-teacher communication (Elshami et al., 2021). Educators in higher education all over the world increasingly hold synchronous online meetings with their students via videoconferencing platforms like Google Meet, Microsoft Teams and others (Centeio et al., 2021; Wu, 2021). One of the most well-known and widely used among them is Zoom (Yarımkaya et al., 2023).

Zoom is a cloud-based videoconferencing service that facilitates group communication through online meetings, instant chat, and encrypted recording (Archibald et al., 2019). Similar to Skype, Zoom allows users to video chat with people all over the world from their desktops, laptops, tablets, and smartphones. Teachers and students can have real-time conversations using the Zoom software. Students in this virtual context engage in real-time conversations via webcam and microphone, simulating face-to-face classroom interactions (Alfadda & Mahdi, 2021). Without a doubt, Zoom has become the *de facto* standard for videoconferencing in the academic world, and it has proven its worth as an instructional tool across a wide range of fields, even in the face of a new normal, as seen by a growing body of scholarly literature (Maor et al., 2023; Zhang et al., 2023).

Even though many studies have already been conducted in relation to the acceptability of Zoom to various students across different continents; studies that were conducted in the ASEAN countries, particularly in a middle-income country like the Philippines, is poorly documented. Despite an exhaustive search of relevant scholarly publications, no studies were found to have been carried out in the Philippine context, specifically in the field of PE at the State Universities and Colleges sector. Unlike other fields or disciplines, research papers concerning the acceptability of Zoom in the field of PE is not yet fully studied by Filipino researchers. Therefore, it was imperative to carry out an inquiry of a similar nature in order to compensate for the dearth and gap in the empirical evidence that currently exists concerning the efficiency of the Zoom software as a teaching and learning platform for PE. The primary objective of this study was to investigate the attributes that could influence students' acceptance and perception of Zoom software as an alternative tool for learning knowledge- and skill-based concepts in PE using the Technology Acceptance Model.

Literature Review

Recent years, from the outbreak of the Covid-19 virus attack up until the post-pandemic period, have seen a proliferation of scholarly publications connected to Zoom in various nations and academic institutions across different fields of discipline (Katz & Kedem-Yemini, 2021; Li et al., 2022). In addition, there are numerous recent research efforts to provide valuable information to various higher education institutions regarding other factors that affect students' acceptance and perception of Zoom, and its application to many different fields around the world. Thus, the findings of these articles have proved invaluable in providing insight that aided institutions in meeting student requirements for an effective educational environment.

In connection with this study, the use of Zoom is still contextualised, as many HEIs around the world employ a fully online and even a blended learning modality. Zoom is used by universities and colleges across the world because of its adaptability and ease of use, both of which benefit students. For instance, the newly published paper by Hartono et al. (2023) has revealed that the students felt more confident in their ability to communicate in English because they had more chances to practise, as well as gain exposure to, the language; they received persuasive support in the form of positive reinforcement from their peers and they encountered

less anxiety when doing so. Therefore, students' opportunities to actively study and improve their English-speaking self-efficacy were fostered through group work in Zoom breakout rooms. Additionally, an investigation by Hidayat et al. (2022) found that online education delivered via the Zoom platform was extremely beneficial to all of the studied elementary schools, with 72.50% of pupils demonstrating comprehension. However, implementing online learning with the aforementioned videoconferencing application faces a number of challenges, including a lack of digital knowledge, a lack of student enthusiasm and inadequate internet infrastructure (Hollister et al., 2022; Myyry et al., 2022). As a positive takeaway, the previously discussed scholarly works suggest that Zoom is a useful instructional tool that can bolster education. Though Zoom has greatly facilitated the spread of online education, many obstacles remain that pose significant risks that must be overcome before the platform can be fully utilised. Most educational institutions face these difficulties while still attempting to provide students with a high-quality education, as evidenced by previous research.

In addition, many universities and colleges throughout the world have struggled with how best to implement online Physical Education courses that combine both theoretical and practical components of the discipline. Such challenges include, for example, the monotony of classes held in a confined space, and educational materials that fail to emphasise the significance of PE (Ng, 2021). This lack of competence and experience has led to fewer assessment guidelines for PE classes, making systematic evaluation using e-learning unfeasible (Liu & Zhuang, 2022; Wang et al., 2023). Furthermore, regardless of the type of e-learning platform employed, reports of the effectiveness of online PE classes through videoconferencing in enhancing students' motor skill acquisition and physical activity level were consistently unfavourable (Chan et al., 2021), contrary to other scholarly works that indicate use of technology enhances students' motor skills and engagement in various physical activities (Mödinger et al., 2022; Xia et al., 2022). The main problems with taking a PE course online, even via videoconferencing, are its failure to offer enough hands-on experience, that students lacked interest and drive to learn and they did not have enough opportunities to engage with each other, as accentuated by other scholars (Konukman et al., 2022). Students were therefore extremely dissatisfied with online discussions, interactions and participation. The scholarly works that were discussed earlier have helped shed light on the various difficulties that institutions of higher learning encounter when attempting to teach PE in an online environment, due to the inherent characteristics of the subject matter. On the other hand, there have been reports of significant positive evidence both during and after the worldwide outbreak that affected online PE all around the world. A good example is the exemplary work of Idris et al. (2021), which found that taking PE lessons in an online environment leads to increased levels of autonomy and a greater capacity for adjusting to the new norm. In addition, those who participated in the virtual health and PE programmes had a more positive assessment of their entire educational experience as a result of the instructors' feedback and responsiveness, their comprehension in relation to the subject matter and their health gains (D'Agostino et al., 2021; Webster et al., 2021). For the sake of providing students with meaningful experiences in learning knowledge- and skill-based concepts in PE, it is essential that these obstacles be overcome, even when using an online learning medium.

To emphasise, scholarly works that tackled the effect of videoconferencing has been explored in various disciplines. In connection with this, after performing a thorough investigation of studies that were conducted in relation with videoconferencing in Physical Education, no studies were documented, most especially in the Higher Education context in the Philippines. In

this regard, this study was focused on determining how videoconferencing could be helpful for the discipline in the new normal.

Revisiting the Technology Acceptance Model and Hypotheses Formulation

Information systems and intention-based models have been developed and introduced over the years to explain why and how people adopt new technologies (Momani et al., 2018). The Technology Acceptance Model developed by Davis (1989) has received the greatest attention and been cited the most frequently. According to Davis, *Perceived ease of use* (PEOU) and *Perceived usefulness* (PU) are two key external elements that impact users' desire to adopt a new technology, which is based on the TAM model. The *PEOU* of a system is the extent to which its use is thought to require little to no mental or physical effort on the part of the user (Mishra et al., 2023). It is when a particular user believes that using a particular technology, like Zoom, requires little to no effort. *PU*, on the other hand, is tied to a system's actual effectiveness and productivity, as well as the broader advantages it offers to boost user performance (Wong et al., 2023). In this regard, a user of a particular technology, like Zoom, perceives that it will be highly beneficial for them to use said platform. The empirical acceptance of this model has led to its use in other fields, including those of education and business, and the combination of TAM with other exogenous variables has also been explored (Peng & Yan, 2022). It has also been demonstrated in the literature that PEOU and PU are significant extrinsic factors influencing students' *behavioural intention* (BI) and *actual use* (AU) of different instructional platforms like Zoom (Huang, 2023). TAM has established its credibility over the past few years as a trustworthy approach for gauging people's openness to adopting new technologies.

Objective and Hypotheses

The research study focused on adopting TAM and investigating what factors influence students' openness to using videoconferencing via Zoom as a replacement for traditional classroom instruction for mastering content in Physical Education classes. The following hypotheses are therefore of interest for this investigation:

H_1: PEOU positively influences the PU of videoconferencing in learning knowledge- and skill-based concepts in PE.

H_2: PEOU influences students' BI to use videoconferencing in learning knowledge- and skill-based concepts in PE.

H_3: PU positively influences students' BI to use videoconferencing in learning knowledge- and skill-based concepts in PE.

H_4: BI of students influences the actual use of videoconferencing in learning knowledge- and skill-based concepts in PE.

Methods

Participants and Sampling Technique

The population consisted of 467 undergraduates from the Bachelor of Physical Education programme at a state university in the Philippines. All the participating respondents were enrolled in the second semester of the academic year 2021-2023. *Purposive sampling* was employed to locate the participants in this investigation. In addition, the suggested sample size was calculated using the total population determined by use of the *Raosoft Sample Size Calculator*. The recommended sample size was 212 out of a total population of 467, with a 95%

confidence level and a 5% margin of error. Surprisingly, 250 students participated in the online survey, and all of their responses were included in the final analysis. In this regard, the bigger the sample size is compared to the recommended sample may provide more robust and accurate results, and make research findings less prone to methodological criticisms (Memon et al., 2020). Table 1 displays the results.

Table 1: Demographic Profile of the Respondents

Variable	Item	*N* (%)
Gender	Male	*105* (42.00%)
	Female	*145* (58.00%)

Instruments

The instrument employed in this research was split into two separate sections. The first section collected the demographic information about respondents. The second section utilised the original 18-item TAM questionnaire by Davis (1989), which comprised four components: PEOU (seven items), PU (six items), BI (three items), and AU (two items). To make the instrument suitable for this study, minor modifications were made to each item for each construct. A 7-point Likert scale was used to record the responses (1 - "extremely disagree" to 7 - "extremely agree").

Data Analysis

The Partial Least Square-Structural Equation Modelling through SmartPLS4 was utilised exploring the factors affecting students' acceptance of Zoom as a learning platform in acquiring knowledge- and skill-based concepts in PE. Instead of using the Covariance-Based tool of Structural Equation Modelling, PLS-SEM was employed to analyse the data, which provided evidence of the reliability and validity of the model. PLS-SEM was an ideal statistical method for processing the data collected in this study, since this particular statistical method is more predictive in nature (Ji et al., 2021).

First, an item reliability analysis using factor loadings was conducted. A loading value of $> = 0.70$ is required for each item (Hair et al., 2021). After the items with a reliability score < 0.70 have been excluded from the model, the remaining items are all reliable. Cronbach's Alpha (CA) and composite dependability should also be $> = 0.70$. Validating constructs requires the use of the Average Variance Extracted (AVE) measure. Additionally, this is defined as the average value of the squared loadings of the items related to the construct, which is the usual metric for determining whether or not convergent validity has been established. The AVE ought to be $> = 0.50$, and the associated p-value ought to be no greater than 0.50 (Hair et al., 2021). The threshold was reached for Cronbach's Alpha, composite reliability, and average extracted variance, as shown in Table 2: PEOU (CA: 0.86, CR: 0.86, AVE: 0.71), PU (CA: 0.83, CR: 0.0.84, AVE: 0.66), BI (CA: 0.87, CR: 0.87, AVE: 0.79), and AU (CA: 0.86, CR: 0.86, AVE: 0.87). Thus, convergent validity has been demonstrated.

Furthermore, discriminant validity can be determined by checking the Fornell-Larcker criterion, cross-loadings, and the Heterotrait-Monotrait Ratio. Each variable's square root of its AVE (diagonal value) must be greater than the correlation of latent variables as shown in Table 3. As illustrated in Table 4, each indicator's cross-loading should be greater than the loadings of the indicators for the associated variables. Heterotrait-Monotrait (HTMT) predictions are shown

in Table 5. An HTMT of 0.90 is optimal. Results indicate that most values are < 0.90. So, the discriminant validity has been demonstrated.

Table 2: Measurement Model Results

Constructs	Items	Loadings	CA	CR	AVE
Perceived ease of use	PEOU2	0.88	0.86	0.86	0.71
	PEOU3	0.88			
	PEOU4	0.88			
	PEOU5	0.71			
Perceived usefulness	PU2	0.82	0.83	0.84	0.66
	PU3	0.79			
	PU4	0.89			
	PU5	0.75			
Behavioural intention to use	BI1	0.85	0.87	0.87	0.79
	BI2	0.92			
	BI3	0.91			
Actual use	AU1	0.94	0.86	0.86	0.87
	AU2	0.93			

Table 3: Fornell-Larcker Criterion

	AU	BI	PEOU	PU
AU	0.935			
BI	0.686	0.891		
PEOU	0.514	0.651	0.841	
PU	0.674	0.765	0.651	0.815

Table 4: Cross-Loading Results

	AU	BI	PEOU	PU
AU1	0.939	0.661	0.504	0.640
AU2	0.931	0.621	0.455	0.620
BI1	0.594	0.849	0.566	0.645
BI2	0.651	0.915	0.595	0.723
BI3	0.586	0.907	0.576	0.672
PEOU2	0.428	0.571	0.875	0.546
PEOU3	0.414	0.513	0.880	0.556
PEOU4	0.475	0.565	0.882	0.536
PEOU5	0.405	0.531	0.713	0.544
PU2	0.561	0.607	0.518	0.827
PU3	0.508	0.605	0.593	0.788
PU4	0.611	0.706	0.562	0.887
PU5	0.514	0.565	0.437	0.750

Table 5: Heterotrait-Monotrait Ratio (HTMT)

	AU	BI	PEOU	PU
AU				
BI	0.794			
PEOU	0.599	0.754		
PU	0.800	0.897	0.768	

The outcome of the comprehensive collinearity evaluation done to check for Common method bias in the model is shown in Table 6. In this case, VIF readings must be below the 3.3 threshold (Hair et al., 2021). Every item was found to have VIF values < 3.3. This finding can be construed to mean that the model is free of CMB constraints.

Table 6: Collinearity Statistics (VIF) — Outer Model

Items	VIF
AU1	2.270
AU2	2.270
BI1	1.850
BI2	2.858
BI3	2.827
PEOU2	2.825
PEOU3	2.615
PEOU4	2.845
PEOU5	1.381
PU2	2.172
PU3	1.632
PU4	2.619
PU5	1.533

The outcomes of running PLSPredict, which evaluates the model's predictive power/validity, are shown in Table 7. As can be seen in the chart, Q^2 forecast values also need to be > 0. In addition, a look at the PLS-SEM MV error histogram reveals that the majority of the indications are mirror images of one another. Therefore, the predictive ability of the model may be evaluated by contrasting the PLS-SEM_RMSE and the LM_RMSE. The results show that the model has moderate predictive potential because PLS-SEM_RMSE is lower than LM_RMSE for most indicators. This meets the requirements specified by Shmueli et al. (2019).

Table 7: Model's Predictive power using PLSPredict

	Q^2 Predict	PLS-SEM_RMSE	PLS-SEM_MAE	LM_RMSE	LM_MAE
AU1	0.234	1.050	0.836	1.067	0.840
AU2	0.194	1.080	0.850	1.093	0.859
BI1	0.307	0.974	0.724	0.991	0.733
BI2	0.338	0.999	0.749	1.011	0.757
BI3	0.318	1.066	0.801	1.073	0.809
PU2	0.247	0.981	0.718	0.973	0.710
PU3	0.337	1.113	0.822	1.125	0.805
PU4	0.298	0.954	0.727	0.944	0.723
PU5	0.176	1.151	0.848	1.171	0.866

Ethical Consideration

All respondents were briefed about the purpose of the study, the nature of the questionnaire, and the variables that were measured. The study's contributions to the academic and research communities were also outlined. Respondents were asked to indicate their agreement by clicking

a button on a Google Form that was emailed to them. In addition, they were allowed to opt out of the study, making their participation entirely voluntary. Reiterated were the minor dangers involved, such as feeling awkward or embarrassed while responding to personal or controversial survey questions. There would also be no monetary reward for sharing any information. It was also mentioned in the consent that the data obtained from their responses would be stored in an Excel file encrypted with a password for six months. After six months, the data will be removed from the system permanently, and the data will not be used for secondary or further studies. Participants, then, are always welcome to opt out of further participation in the study or request a debriefing at any time.

Results and Discussion

Assessment of Structural Model

Assessing the structural model was performed to understand and identify the causal relationship between latent and observed variables. In this regard, the model's ability to explain observed phenomena was determined by quantifying the degree of variation observed in the model's dependent variables. According to Hair et al. (2021), the R^2 and the path coefficients are the primary indicators of the quality of the structural model. Figure 2 shows that the model's R^2 for PU is 42.1%, BI is 62.2%, and AU is 46.9%.
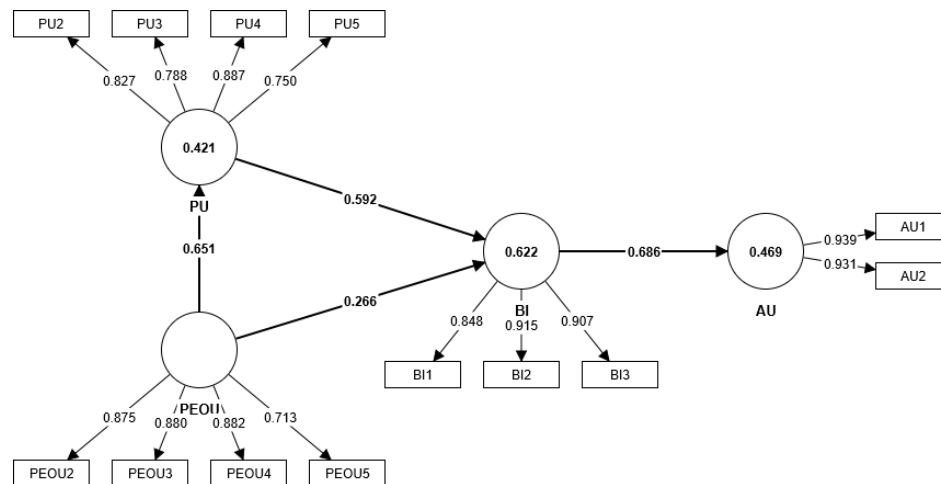

Figure 1: Results of Path Analysis

For the purpose of the path analysis, the model was bootstrapped into a total of 10,000 samples, as was recommended (Hair et al., 2021). Path-coefficients and *p*-values of each hypothesis tested for this study are illustrated in Figure 2 and Table 8, respectively. After performing PLS-SEM, the path between PEOU and PU was first analysed and it was revealed that PEOU is positively associated and affects PU of the Zoom platform ($\beta = 0.65$, p < .05). In this regard, *H₁* has been accepted and supported. Second, both paths for PEOU and PU were tested and it was observed that both constructs (PEOU; $\beta = 0.27$, p < .05); (PU; $\beta = 0.59$, p < .05) were positively interrelated and may influence students' BI towards the Zoom platform. Based on these findings, *H₂* and *H₃* were supported and accepted. Lastly, the path between BI and AU was scrutinised, and it was unravelled that BI is positively correlated and triggers students' AU

of Zoom as a platform in learning knowledge- and skill-based concepts in PE ($\beta = 0.69$, p < .05). Ergo, **H₄** has been accepted and supported.

Table 8: Testing of Hypotheses

Hypotheses	Path	Path Coefficient	*p-value*	Decision
H₁	PEOU → PU	0.65	0.000	Supported
H₂	PEOU → BI	0.27	0.000	Supported
H₃	PU → BI	0.59	0.000	Supported
H₄	BI → AU	0.69	0.000	Supported

It was found that PEOU and PU truly represent variables that are favourably connected with and stimulate students' BI and AU of Zoom as an alternative educational platform in learning knowledge- skill-based concepts in a variety of PE courses. As a result, the findings suggested that the implementation of the aforementioned videoconferencing platform was incontestably uncomplicated and simple to use, consistent with the findings of previous inspections (Hartono et al., 2023; Hidayat et al., 2022). Students' optimistic views of Zoom as a useful platform have the potential to boost their overall academic performance because of its accessibility and practicability. The results corroborate the findings of other scholars who found that online students' academic achievement and drive improved when they used the videoconferencing application Zoom to participate in class (Silalahi et al., 2022).

On the other hand, some scholarly works have observed that using Zoom may have a detrimental impact on students. For example, the findings of Serhan, (2020) also revealed that students attending major educational institutions in the US had a negative attitude regarding the use of Zoom and saw it as having a detrimental effect on both their learning experience and their drive to learn. However, there are concerns that have been raised regarding the level of privacy and security provided by Zoom, and security professionals have stated that the application's default settings do not provide an adequate level of protection (Dassel & Klein, 2023). Similar to other internet-based platforms, Zoom is vulnerable to potential data breaches that have the potential to undermine the security and confidentiality of user data (Chen & Zou, 2023). To mitigate this risk, it is imperative to employ robust passwords, regularly update software, and refrain from disclosing sensitive information during Zoom sessions (Aiken, 2020). Finally, it is imperative to adhere to established protocols for data encryption and adhere to pertinent rules regarding data privacy in order to guarantee a secure and confidential educational setting.

On a positive note, students from the state university perceived Zoom as a learning application that might significantly help them to learn knowledge- and skill-based concepts in PE. Furthermore, to emphasise, this current study has only concentrated on the direct effect that PEOU and PU have as exogenous factors on the behavioural intentions and actual use of the Zoom platform by students pursuing a Bachelor of Physical Education degree. It is limited to the criteria that are discussed in the TAM, and there are no other exogenous variables or factors included in the analysis. As was discussed earlier, additional factors could possibly influence BI and AU, however, these other elements were not included in this inquiry.

The findings of this study are noteworthy as they help fill the gap between research in the fields of educational technology and physical education with new knowledge and data. In particular, the results benefited the state university by providing an accurate depiction of the usefulness of Zoom as a system for students to acquire knowledge- and skill-based concepts in

PE. Moreover, this was particularly valuable for all the PE instructors and the administrators. This is consistent with the university's mission to provide students with a high-quality education consistent with the current educational standard, which increasingly includes online learning.

Conclusion

Through an application of the TAM and the use of PLS-SEM, it was determined that the PEOU and PU of Zoom as a pedagogical tool in learning knowledge- and skill-based concepts in Physical Education can have a significant impact on the BI and AU of Zoom by BPEd students. Important factors that influence students' opinions of the platform are how easy and familiar it is to use. Interestingly, another remarkable finding was that students could rely on Zoom to efficiently learn and acquire knowledge- and skill-based concepts, thereby leveraging the university's educational system. These findings are predicated on the high degree of dependence placed on the platform by students, as measured by the aforementioned constructs. As a result, students may make full use of Zoom by participating in a wide range of training programmes to capitalise on the advantages it may provide. The practical capabilities of the platform should be thoroughly examined to ensure that no students fall behind, especially in light of the rapid pace at which technical discoveries are presently being made.

The provision of in-depth and extended training to PE instructors to enable them to investigate and make the most of the functionality of Zoom should be of major assistance to the instructors' online classes from the point of view of professional development. In addition, training that focuses on creative pedagogical techniques that are applicable in an online learning environment is strongly suggested to improve innovative thinking, which may catch the interest and increase the drive of students taking PE courses, and this may result in exceptional learning outcomes. Studies that have been done in the past that reported on teachers' poor knowledge of how to operate and facilitate teaching and learning in an online learning mode are the basis for these recommendations. Therefore, policymakers and practitioners should provide interventions to solve these issues faced by PE instructors and to increase their familiarity with the platform, which may substantially benefit and help their professional careers. These interventions should also address the fact that the challenges faced by PE instructors are unique to the profession. It is necessary to provide such experiences for teachers, as they make the process of teaching and learning easier. Additionally, it is common knowledge that the abilities and knowledge of teachers to operate the platform can influence the students' interest, motivation and engagement in the classroom. Significantly, the Discussion section highlit the potential hazards that jeopardise the privacy and security of the students. It is strongly suggested to offer specific training to PE instructors to ensure the complete protection of students' privacy and security while utilising the Zoom platform, thus maximising students' acceptance towards said technology.

It is crucial to keep in mind the study's caveats, especially its limits. There are few caveats to this study, the first of which is that it relied solely on the TAM and not on any other exogenous variables, as indicated in the Discussion section. It was also underlined that other exogenic elements were identified as influencing students' BI and AU of a pedagogical platform. Therefore, it is strongly suggested that future research adopt the Unified Theory of Acceptance and Use of Technology, the Extended Unified Theory of Acceptance and Use of Technology, or other behaviour-intention theories and models to determine the influence of these factors on students' BI and AU of Zoom to learn knowledge- and skill-based concepts in PE. Furthermore, a follow-up qualitative or mixed-method research study is strongly suggested as it would provide

a more comprehensive and in-depth understanding of the numerous elements that may affect students' adoption and utilisation of said videoconferencing platform. With these exceptions, the current study only included participants enrolled in the BPED degree at a state university. Since HEIs vary greatly in size and scope, it may be impossible to extrapolate findings from this study to all HEI students in the province, country or the world. Scholars from other HEIs in the future might be interested in replicating the study and seeing whether they can corroborate or refute the results by analysing data from other public and private universities, and whether shifting to online learning may be feasible for their respective students. Finally, a multi-informant approach or design for future research may be applied by collecting reports from PE instructors, as they can provide more in-depth information about how they view and accept Zoom as a pedagogical tool for teaching knowledge- and skill-based concepts in a variety of PE courses. Finally, this study fills a gap in the existing literature by investigating students' perspectives on the usefulness of the videoconferencing platform Zoom for acquiring PE-related knowledge and skills, with a focus on the context of a state university.

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Cite as: Lobo, J., Prevandos, F.G., Tanucan, J.C., & Setiawan, E. (2024). Is video-conferencing helpful for physical education classes in the new normal? A PLS-SEM analysis adopting the Technology Acceptance Model. *Journal of Learning for Development*, *11*(1), 99-114.