Migration Letters

Volume: 21, No: S3 (2024), pp. 902-917

ISSN: 1741-8984 (Print) ISSN: 1741-8992 (Online)

www.migrationletters.com

Evaluating The Effects Of Zoom Video Conferencing On Student Education: Applying The Technology Acceptance Framework

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Abstract

This research examines the Zoom video conferencing platform and using the Technology Acceptance Model (TAM) to elucidate the effects of adopting new technology on educational results. The study used structural equation modeling to examine the associations between the components of the Technology Acceptance Model (TAM) and the Zoom lessons conducted during the COVID-19 epidemic. A cross-sectional research design was employed to interview 323 Asian university students who were in their 10th week of an English as a foreign language (EFL) conversational English class. The interview included measures of perceived ease of use (PeU), perceived usefulness (P.US.), behavioral intentions, and P.uS. attitude scales (Scheper et al., 2019). Out of the 10 hypotheses tested, 7 were supported by path coefficients that varied in attitude. One significant impact of PeU was its effect on both intended and actual use of Zoom. Furthermore, the students' self-assessments of their learning remained untouched by the perceived usefulness of Zoom. However, it did have a significant impact on their plans to use Zoom in the future. Although P.US. was helpful in predicting students' future behavior, it did not impact their evaluations of their current accomplishment in their video conference class. Video conferencing technology had a significant influence on students' perceptions of their own development, P.uS. attitudes, and the applicability of the information they acquired via collaborative learning. P.US. mediated two significant occurrences, thereby resolving the problem. Upon careful examination of the results, it is evident that students must get thorough guidance on the use of video conference software prior to integrating it into their video conference classes.

Keywords *Technology Acceptance Model, Zoom Videoconferencing, System, COVID-19, and Computer-assisted Language Learning*

Introduction

Teachers at the universities that were affected by the COVID-19 pandemic reported using a wide range of tactics to deal with the challenges of online education (Vladova et al., 2021). Many well-known e-learning platforms provide video conferencing capabilities; this allows students to feel more connected to their peers and actively participate in class (Pal & Vanijja, 2020; Sharma, 2021). The video confe[1]rencing systems' value became clear as the epidemic progressed; they offered a workable solution to the issues of emergency online schooling.

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Many studies undertaken during the COVID-19 pandemic used the technology acceptance model (TAM) as a framework to examine the educational applications of internet technology. A TAM was created to direct the use of online resources during the COVID-19 pandemic (Scheper et al., 2019; Inan, 2020). When it comes to understanding and predicting the behavior of IT implementations, it is among the most well-established conceptual frameworks. Online education and digital pedagogical tools have recently been the focus of academic inquiry because to the introduction of COVID-19's emergency online courses (Selvaraj et al., 2021). Research on TAM is necessary during the COVID-19 pandemic, but it must focus on video conferencing tools in particular (Pal & Vanijja, 2020).

The technology of interest in this inquiry was the video conferencing software Zoom. On this well-liked video conferencing software, many smaller meetings, called "breakout rooms," may be started at the same time. In a BOR, students may practice speaking English in small groups or couples without having to be closely monitored by the instructor. Students are encouraged to collaborate and develop stronger connections during traditional, in-person conversational English courses. Since there is a limited amount of time for students to practice speaking when there is only one speaker at a time, it becomes difficult in EFL classrooms that focus on conversational skills. With the use of video conferencing, teachers may create "breakout rooms" where students can work in smaller groups without disturbing the teacher or other students. This helps students compensate for the absence of face-to-face connection. When students work in groups in these designated areas, they will not be under the teacher's watchful eye, but rather are expected to utilize English. When it comes to virtual meetings, Zoom's BOR function is only one of several multimodal options. Features like screen-share, Attention indicators (such smiling faces or raising hands), and group and one-on-one discussion are more examples. Zoom provides a number of useful features, including video and phone conferencing, file sharing, annotation tools, and the ability to record meetings.

Structured Proposal

To explain the observed association between reported use and perceived learning in online video lectures, the suggested model utilizes the TAM framework's variables of interest (Fig. 1). Students' progress in learning English during the COVID-19 pandemic was found to be aided by Zoom's video conferencing capabilities; the TAM was used to help explain how this was achieved. According to Scheper et al. (2019), research indicates that PeU affects P.US., and that both TAM variables impact P.uS. attitude and behavioral intentions to use the mentioned technology in the future. This provides more evidence that the TAM framework can explain both intentions to use technology and actual use of technology. The TAM has been the basis for several research that have investigated different forms of online education, including mobile learning (Rafique et al., 2020), traditional LMS software (Barteit et al., 2020), and e-portfolio platforms (Salloum et al., 2019). Research comparing several models suggests that the TAM is a solid theoretical framework with potential uses in multimedia and e-learning environments; this may explain its widespread acceptance (Kamal et al., 2020).

Possible explanations

The current study utilized a modified version of the TAM to inquire about students' perspectives on the English conversation tasks assigned in their online video lectures, such as EFL speaking exercises for pairs or small groups. In the past, researchers have used the TAM

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to examine topics like as comfort level, perceived usefulness, anxiety, and self-assurance when it comes to technology (Salloum et al., 2019). Student perceptions and intentions about the usage of educational technology in the classroom were considerably affected by their encounters with PeU and P.US., according to the TAM data from the COVID-19 pandemic (Selvaraj et al., 2021). To shed light on the P.US. and P.uS. attitudes around the use of the Zoom video conferencing platform during the COVID-19 epidemic, the following hypotheses are P.uS.t out within the framework of the well-established TAM:

The ease of use of video conferencing technology is positively correlated with the perceived usefulness of these tools, according to hypothesis 1.

The second hypothesis is that people are more likely to use video conferencing tools if they think the UI is easy to use.

Third Hypothesis: People are more likely to embrace video conferencing technology if they see how useful they are.

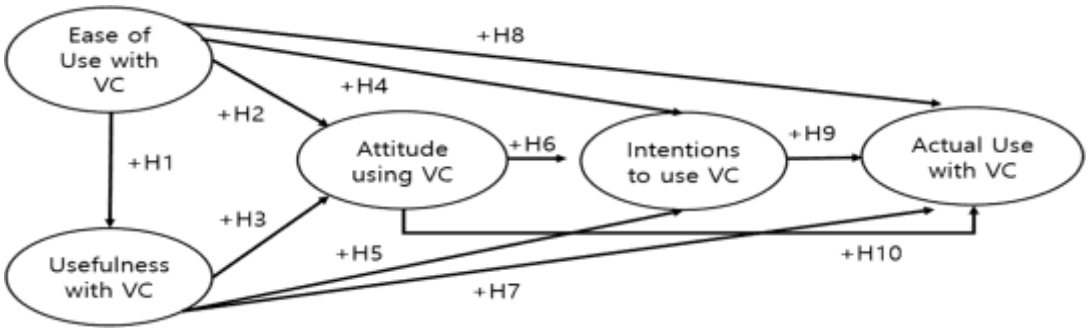

Fig. 1 A Different Model Is Introduced

In this article, we argue that students' intents and behaviors are influenced by aspects such as the ease of using Zoom, the usefulness of the course contents, and the general environment of the classroom. According to the TAM, there are a lot of external variables that influence people's decisions about when and how to utilize technology. A number of variables influence P.US. and PeU, including individual differences, system characteristics, societal effect, and enabling events. In fully online, synchronous classrooms, it is critical to understand how the TAM framework may shed light on students' intentions and behaviors in regard to Zoom's video conferencing features. These factors must be taken into account in order to ascertain the impact that mentality has on the correlation between the use of video conferencing tools and the intended learning outcomes. To learn what drives customers to adopt new technology, we need to know what variables impact P.US. and PeU (Farhan et al., 2019). For this reason, the following hypotheses were advanced:

The degree to which one perceives a video conferencing program's ease of use affects their intention to use the program.

Hypothesis 5: When people see a lot of value in video conferencing solutions, they are more likely to use them.

As a user of video conferencing technology, one's mindset affects their behavioral intentions (H6).

Connecting students' declared opinions and acceptance of the mentioned technology to their learning outcomes regarding the actual usage of that technology is crucial for making the TAM framework more relevant to the e-learning environment (Pal & Vanijja, 2020). Communication courses, like conversational English, which is required at the university level in Asia, are enriched when students actively participate using video conferencing (Rasooli et al., 2018). After implementing the TAM with EFL students, actual use was defined as the perceived learning via the use of the video conferencing platform Zoom (Pal & Vanijja, 2020). Using the TAM, many theories were P.uS.t forth to clarify the relationship between real-world application and the intended learning outcome.

Hypothesis 7: The effectiveness of reported learning is associated with the usefulness of video conferencing technology.

The simplicity of use of video conferencing is favorably connected with its efficacy, according to students' opinions (Ha8).

Hypothesis 9: The perceived knowledge benefits from utilizing video conferencing technologies are positively impacted by one's drive to improve their behavior.

Students' perceptions of the medium greatly influence their proficiency with video conferencing tools (H10).

Literature review

New Technology Adoption Model

The theory of reasoned action (TAM) is based on the idea that people's present beliefs and intentions dictate their behaviors (Venkataramanan et al., 2020). The TAM is an information systems theory that influences people's adoption and use of technology. The TAM states that the likelihood of adoption of a new technology is dependent on how people perceive it. There are two main assumptions that influence learners' motivation to use technology—P.US. and PeU—and they drive this P.uS. attitude. Also, most of the TAM's assumptions were found to be correct (Farhan et al., 2019), which suggests that better organizational e-learning management may boost acceptance and ensure a smooth rollout. Not everyone is satisfied with the TAM. To get around these issues, researchers may modify TAM so it works better in an online classroom by substituting data collected from user logs for presumptions on the results of the lesson (Pal & Vanijja, 2020).

The technological adoption paradigm includes the following factors as variables: P.uS. attitude, perceived utility, perceived ease of use, and actual use. Adding additional external components like subjective standards, experience, and enjoyment to the TAM allows it to explain a wider range of technology use. In many cases, the TAM's most crucial building components are P.US. and PeU. The term "performance uncertainty," or "P.US.," describes how confident a person is that a specific piece of technology will improve their performance, while "perceived effort of use," or "PeU," partly describes how much mental and physical energy is needed to master a specific piece of technology (Scheper et al., 2019). Research on TAM in the classroom has shown that students' P.US. and PeU have a bearing on their openness to and future usage of e-learning platforms (Rafique et al., 2020; Farhan et al., 2019). For technology to be successfully integrated into the learning environment, it must be readily available, accepted, and used (Abdulrahaman et al., 2020). What we mean by "P.uS. attitude" is the degree to which a user is enthusiastic about the system. Users' P.uS. attitudes shape their intents to utilize the system, which dictates their actual behavior (Scheper et al., 2019). According to Kamal et al. (2020). Research by TAM on 365 students in an online classroom indicates that P.US. significantly influences college students' views on the efficacy of multimedia pedagogy. According to their

findings, students' views influence their behavioral intention to use technology. Teachers and students are more likely to have a positive outlook on e-learning if they see it as practical and easy to use. Research has shown that PeU and P.US. have a substantial impact on students' views of technology (Estriegana et al., 2019; Morzelona, 2021). We also found that PeU predicted P.US. and was a better P.uS. attitude predictor than P.US. itself.

Tools for video conferencing and conference calls

Zoom, Google Meet, and Microsoft Teams are just a few examples of the popular online meeting and conferencing tools that have grown in prominence since the COVID-19 pandemic. Video conferencing software allows users in different places to communicate visually and austerely in real time (Selvaraj et al., 2021). Nevertheless, P.US. and PeU are crucial for these platforms to succeed (Rafique et al., 2020). To ensure students' academic success, these online learning environments must provide them with tools that are both useful and easy to use. According to the proposed usability paradigm for e-learning tools (Zainuddin et al., 2020), students need instructors' assistance to finish complex learning tasks on e-learning platforms. Students who aren't well-informed or who aren't happy with the program's usability may not learn as much (Zainuddin et al., 2020). Sukendro et al. (2020) and Bozdogan and Ugur (2020) both agree that in order to provide the best assistance possible, it is important to intervene early on to address students' acceptance, P.uS. attitude, Purpose, and utilization of technological learning tools like video conferencing.

Two studies that used the TAM to survey college students evaluated Microsoft Teams' potential as a standardized platform (Pal & Vanijja, 2020; Shanthi, 2022). A more intuitive web platform, they reasoned, would Attract more users. (Taat & Francis, 2020) also sought to answer this question by investigating what factors lead to students' enthusiastic adoption of online courses. Their findings suggest that students' P.uS. attitudes about e-learning are strongly influenced by the platform's benefits and practicality, which might lead to an improvement in the efficiency of online education. Also, there is a strong positive correlation between self-efficacy with the technology and the PeU and P.US., which is considered to influence the adoption of Zoom as an e-learning platform. Additionally, 232 students' perspectives on a semester-long online video course were examined during the epidemic (Pal & Vanijja, 2020). Students' perceptions of the system and their subsequent use of it were positively correlated after seeing the training films.

The sensation of accomplishment that learners experience is highly dependent on their assessments of how efficient the learning process is. Higher levels of self-efficacy and more favorable learning outcomes have been associated with optimistic views on the learning process. The extent to which a Student feels they have learnt in an online course is proportional to their degree of satisfaction with that course. Landrum (2020) stressed the significance of giving students a comprehensive introduction to the technologies being used in order to assist them succeed in their online courses. Emergency online courses, such as those endured during the COVID-19 pandemic, necessitate research assessing students' P.uS. attitudes and acceptance of video conferencing tools in online learning. Neither the institutions nor the students were ready for the new mode of class delivery.

Methods

Viewpoints and Participants

utilizing a cross-sectional survey research technique, this study assessed PeU, P.US., P.uS. attitude, behavioral intention, and learning outcome utilizing the TAM framework (Scheper et

al., 2019; Lutkenhauses et al., 2023) as its basis. A cross-sectional study just takes a snapshot in time to draw conclusions. The Purpose of this data collection was to examine how EFL students perceive and make use of videoconferencing tools to achieve course objectives (such as improving students' oral and written English proficiency). Due to the COVID-19 pandemic, this survey study included only online courses taken in the second semester. By the conclusion of the second semester, students were considered to have gained sufficient proficiency with the videoconferencing technology that had been studied.

All 323 participants were first- or second-year students in Asia Attending conversational English lessons; the subjects covered ranged from economics and logistics to nursing, nutrition, social welfare, chemistry, history, and interior design (M = 130, F = 193). Participants had to sign up for and finish a Zoom-based conversational English course taught by a native English speaker in order to enter. The instructor of a session in conversational English used Zoom to separate the class into smaller sub-conference rooms, give each pair a subject to talk about, and then keep an eye on their interactions.

Instrumentation

At the beginning of the two-part survey, participants used a nominal scale to identify their gender, level of second language ability, and area of study. Behavioral intents, PeU, and P.US. were the three pertinent TAM measures presented in the second part of the survey (Scheper et al., 2019; Mukherjee & Mandal, 2020). A fourth Attribute that was developed in-house specifically for use in Zoom-based training (such as exercises involving group and pair speaking) was P.uS. attitude. The academic self-efficacy for learning measure was modified to include five items that could be administered using video conferencing software. In both the first and second drafts of the question, "I can tell what is significant in my class," with the second draft specifically mentioning the material presented in a virtual meeting. The reason these five things were chosen is because they all directly relate to what you may learn from using the video conferencing software. Table 1 shows the components of each scale. Each of the five relevant characteristics was evaluated on a 5-point interval scale, with 1 representing strong disagreement and 5 strong agreements, by the participants.

Table 1 Scales and materials used in surveys

Zooming in on learner confidence and the benefits of self-efficacy	
1	English is a difficult language, but I know I am making progress in my online study.
2	I'm confident in my ability to succeed in this online English lesson.
3	In my online English course, I've learned to choose the most crucial topics.
4	What we cover in our English lesson via video conference makes perfect sense to me.
5	In our English distance learning class, I have no problem keeping up with the course content, no matter how advanced it becomes.
the perceived simplicity of using video conferencing equipment in the classroom	
6	Simple to use, video conferencing software is an effective teaching tool.
7	The educational resources for video conferences are straightforward.
8	Using video conferencing technologies is straightforward and easy to grasp.
Value placed on the usage of video conferencing technology in the classroom	

9	In my opinion, learning technologies like video conferences are more effective.
10	I've found that using video conferences for education has helped me immensely.
11	As a Student, I find that my productivity in the classroom increases when I use video conferencing to facilitate learning.
12	Video conferencing as a teaching tool is something I find to be quite helpful.
Pedagogical perspective on the use of videoconferencing technology	
13	This semester's video conference courses are among of my favorites.
14	My video conference class is one of my favorites.
15	Participating in the class's partner activities through video conference is one of my favorite parts.
16	In our video-conferencing class, I really like the opportunities we have to work in smaller groups.
17	In my opinion, having companion activities as part of our video conference lesson would be beneficial.
Plan to employ classroom videoconferencing technologies as a learning strategy	
18	Going forward, I plan to make regular use of video conferencing solutions.
19	The utilization of video conferencing and other online educational technologies is something I want to use regularly in my courses.

Data analysis

First, we used SPSS (26.0) to do some basic statistics like mean score and Pearson correlation as part of our early statistical study. Analysis of Moment Structure (AMOS; Version 21.0) structural equation modeling was the subsequent phase. Following data Clarification and a first review, the measurement model was created using confirmatory factor analysis (CFA) using AMOS. After that, structural equation modeling was used to quantify the causes links in the recommended structural model.

Data cleaning

Finding outliers with an outlier analysis was an early stage in cleaning the data. Eleven outliers were identified by linear regression distance tests and had to be removed. Overall, the distributions of the indicators for the latent components were shown to be quite typical. Kurtosis and skewness values were within the ideal range of -1.0 to +1.0, further supporting the normal univariate distribution. We then looked at Variable Inflation Factors (VIF) to see whether there was multicollinearity. Compared to the bare minimum need of 10, the maximum value discovered, VIF = 3, is much lower. Finding a Kaiser-Meyer-Olkin (KMO) value of 0.901 was considered sufficient sampling, since it is more than the minimum needed value of 0.60. In Bartlett's Test of Sphericity, the result was 2 (55) = 3498.50, p 0.001. This indicates that the result is statistically significant. In conclusion, there was a larger proportion of common features than the cutoff of 0.50. Once sufficient data was determined, structural equation modeling was performed.

Results and discussion

Results

The bivariate Pearson correlation was used to evaluate whether the observed variables were linear. According to Aberson (2019) and Pande et al. (2022), all of the relevant observable variables have moderate to high levels of statistical significance with r values ranging from 0.283 to 0.754. Mean scores for the different components range from 2.84 to 3.44 and standard deviations from 0.71 to 0.84. Pearson correlation is also shown in Table 2. A moderate amount of variation was seen when students were questioned about their comfort level using Zoom. The mean and standard deviation were highest when PeU was used. There were no obvious differences in P.uS. attitude or engagement between the sexes, however females did seem to have a somewhat more optimistic view on Zoom activities. With the help of PeU and P.US., there was a strong correlation between L2 proficiency and use.

Table 2 Standard deviations and associations

		1	**2**	**3**	**4**	**5**	**6**	**7**
Gender								
	L2 Proficiency	-.056						
1	Actual Use	.026	.388**					
2	P.uS. attitude	.141*	.044	.558**				
3	PeU	-.116	.163**	.614**	.217**			
4	P.US.	.043	.272**	.524**	.457**	.511**		
5	BeiNT	.218	.178	.432**	.383**	.612**	.564**	
	M	2.68	3.44	3.87	3.98	2.34	1.85	2.21
	SD	.58	2.84	1.86	1.81	1.74	1.86	1.81
	Kurt	-.488	-2.76	-1.24	-1.172	-1.241	.331	1.133
	Skew	.061	-.513	-1.258	1.177	-1.344	.194	.312
	Cron. alpha	N/A	N/A	.787	1.879	1.778	.826	.715

Actions with the Purpose of altering one's behavior; LeW; P.US. stands for "perceived usefulness," while PeU is for "perceived ease of use." Number of males (M = 1) and females (F = 2); Level of proficiency in a second language (L2P): 1 meaning very low and 10 very high.

Validity Verification

The five-factor model was then double-checked for dimensionality by examining its convergent and discriminant validity. Table 2 shows that the Cronbach alphas were much higher than the minimum permissible value of .81, ranging from .88 to .99. The second point is that the reliability scores were higher than the cutoff of .61. The average extracted variance was more than .51, with the exception of P.uS. attitude, where it was .535. Assuming P.uS. attitude safety was adequate, AVE is satisfactory if the Composite Reliability (CR) number is more than .61. Testing the proposed model followed the validation of the research (Table 3).

Table 3 All three types of validity (construct, convergent, and discriminant)

	CR	AVE	MSV	MaxR(H)	1	2	3	4	5
1 Actual Use	.787	.684	.438	.778	.881				
2 PeU	.778	.799	.548	.984	.683	.741			
3 P.uS.	.892	.535	.388	.727	.637	.484	.762		
4 BeiNT	.879	.734	.681	.881	.481	.728	.462	.878	
5 P.US.	.828	.846	.681	.833	.556	.772	.478	.866	.769

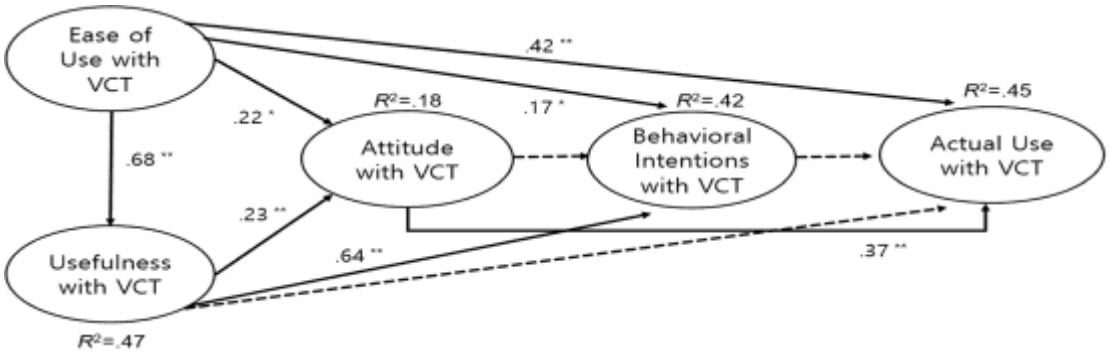

Fig. 2 Completed model with predictive and directional variables

Table 4 Tested predictions using path-coefficient-based regression weights

	Path	Hypothesis	B	SE	β	p	R^2	
HI	PeU P.US.	Confirmed	.728	.167	.787	.114**	.48	
HII	PeU ATTI	Confirmed	.343	.188	.327	.028*	.19	
HIII	P.US. ATTI	Confirmed	.386	.218	.344	.011**		
HIV	PeU IBC	Confirmed	.254	.176	.278	.142*	.43	
HV	P.US. IBC	Confirmed	.674	.188	.749	.112**		
HVI	ATTI IBC	Null	.146	.157	.159	.557		
HVII	P.US. AUSE	Null	.152	.188	.161	.788	.46	
HVIII	PeU AUSE	Confirmed	.477	.185	.524	.111**		
HIX	IBC AUSE	Null	-.141	.221	-.141	.898		
HX	ATTI AUSE	Confirmed	.384	.164	.478	.111**		

p** = 0.02; p* = 0.06; Actual Use; Perceived Ease of Use; Perceived Utility; P.uS. attitude (ATTI); Intentional behavior change, or IBC.

A Structural Model

This model's parameter was determined using AMOS confirmatory factor analysis. RMSEA, CFI, and NFI were employed to evaluate model fit. The structural equation model fit well after modification indices modifications (3/df = 3.269, p 0.001; TLI = 1.853; CFI = 1.963; NFI = 1.836; RMSEA = 0.060; PCLOSE = 0.061). Figure 2 shows regression weights and path coefficients in the final model. Dashed lines show less important directions, whereas solid lines represent essential ones (Table 4).

Route coefficients for relevant outcomes varied in effect Magni attitude. R2 was 0.48 (p 0.002), with PeU to P.US. having the greatest route coefficient. A total regression weight (R2) of 0.19 (p 0.002), which is in the small effect size range, was obtained from PeU and P.US. positive path coefficients to reported P.uS. while using video conferencing technologies (Aberson, 2019; Gordillo-Rodriguez et al., 2023). P.US. was the best predictor of future behavior, showing consumers like the video conferencing product. However, PeU showed a modest impact size between attitude students' intentions to use video conferencing technology in the classroom and their actual behavior. The total regression weight (R2) of P.US. and PeU was 0.43 (p 0.001) for behavioral intention to use Zoom for English discussion. The overall regression weight (R2) was 0.46 (p 0.001), and only PeU and P.uS. attitude had significant pathway coefficients for actual use.

The 5600-sample bootstrap post hoc investigation showed two mediated correlations. Future behavioral intention to use video conferencing technologies rose by 0.448 points for every one-point increase in PeU (on a five-point Likert scale), corresponding to a standardized regression weight of 0.659 (p 0.002). A one-point increase in PeU was associated with a 0.274-point increase in reported P.uS. attitude toward using video conferencing technologies for conversational English lessons (p = 0.034, standardized regression weight of 0.268). The following chapter explains these findings via literature review.

Discussion

Recent research has evaluated Zoom's video conferencing product using a tweaked TAM. This paper's model sheds light on the extensive usage of video conferencing software during the 2009 COVID-19 epidemic by providing crucial background information. Due to the impracticality of most video conferencing scenarios, the TAM was revised to place more emphasis on students' expectations on the content they would learn. We found some important details. Bivariate Pearson correlation analysis confirmed the presence of statistically significant correlations among all variables; this is a common result in TAM research (Rafique et al., 2020; Basaligheh, 2021). While testing the structural model, a deeper understanding of the interdependence of these ideas became apparent. The TAM's applicability to educational technology, and video conferencing technologies in particular, was supported by seven out of ten hypotheses, which bodes well for its legitimacy.

Hypotheses 1 to 3

According to the statistics, there is a positive association between how easy a video conferencing technology is to use and how useful it is. This finding is in line with what has been shown in the literature (Sukendro et al., 2020). The model's greatest path coefficient was discovered between PeU and P.US., which aligns with the growing amount of literature on e-learning video conferencing technologies and supports earlier studies on learning management system technology (Estriegana et al., 2019). The second and third hypotheses, which were backed by similar findings in previous studies, were shown to be correct. Specifically, it was found that P.uS. attitudes toward using video conferencing technologies were positively impacted by the perceived ease of use and usefulness of these tools (Sukendro et al., 2020). These findings provide additional evidence that attitude students' P.uS. attitudes about speaking

exercises in pairs and small groups improve while using Zoom for EFL discussion lessons because to its convenience and P.US..

Hypotheses 4 to 6

In this research, we found that the perceived usefulness and ease of use of video conferencing tools had a positive effect on behavioral intentions to use these tools. This finding supports hypotheses 4 and 5. According to Yang and Wang (2019), who also found similar TAM patterns, PeU had a favorable influence on zoom usage intentions, but not as significant as P.US.. Due to the fact that students learn best when given opportunities to utilize technology that they are interested in, the video conferencing platform Zoom is expected to make its way into classrooms in the near future (Zainuddin et al., 2020). Findings from PeU on future intents to use video conferencing technology were smaller but still helpful; these findings are in line with another study (Sukendro et al., 2020).

Disproved was the sixth hypothesis, which held that P.uS. attitudes would positively influence behavior intentions while using video conferencing technology. The results of this study contradict those of other studies that showed P.US. to have a favorable effect on college students' perceptions of and intentions to utilize technology in online environments (Kamal et al., 2020). Which is why our main findings on P.uS. attitude contradict prior research that indicated P.uS. attitude to be a strong predictor of welcoming behavior (Estriegana et al., 2019). This can be due to the wording of the items on the P.uS. attitude scale that was developed in-house. If the students had been questioned about their thoughts about Zoom instead of the conversational English tasks they did on the platform, maybe the outcomes would have been different.

Hypotheses 7 to 10

The employment of video conferencing technology to mediate the relationship between perceived usefulness and reported learning outcomes, as claimed in No. 7, was also shown to be false. Contrasted with TAM tests performed outside of the virtual meeting area and before to Covid, this outcome was striking (Farhan et al., 2019). This class had a good grasp of the evolution of teleconferencing and its applications to online education, including EFL programs. Zoom conversational English courses were used in this research, and contrary to expectations, there was no correlation between perceived usefulness and reported learning outcome.

The study's findings supported Hypothesis 8: users' impressions of the solution's simplicity of use do, in fact, affect the reported efficacy of their learning while using video conferencing tools. Keep in mind that students' perceptions of the program's efficacy and their personal progress during the learning process determine the amount to which they are able to accomplish their learning goals when comparing our results with those of prior TAM studies (). Students do better in class when they believe in their own ability to learn.

In order to describe how the video conferencing technology in question was really utilized in the pilot TAM, perceived usage was used. Participation in the video conferencing course was measured by students' self-reported levels of learning. The positive relationship between anticipated learning and perceived ease of use (PeU) suggests that users' trust in their own abilities to utilize technology increases their confidence in their own abilities to learn from using that technology. In contrast to P.US., PeU was able to forecast learning outcomes (such as performance on conversational English as a foreign language tasks). Because there is less effort involved in using online learning tools, more time and energy can be P.uS.t into the learning activity, which increases the likelihood of successfully completing the course.

However, regardless of how well a student thinks they are doing academically, the tools may still be helpful for students who aren't sure they're keeping up in a video conference class.

In conclusion, we could not find evidence to support Hypothesis 9, which posited that students' behavioral change goals would positively affect their reported learning results while using video conferencing technology. Sukendro et al. (2020) found no correlation between students' future behavioral intention to use video conferencing technology and their actual use in conversational English classrooms, which contradicts earlier TAM research. Lastly, using video conferencing technology was anticipated to provide improved reported learning outcomes, according to the positive perspective. In keeping with previous research, this found that a positive outlook affected the actual use of video conferencing equipment for e-learning Purposes, which in turn served to lessen the impact of the COVID-19 pandemic.

Achievement in Mediation

Looking back, we discovered two exchanges that used mediation. Utami (2021) found that P.US. mediated the relationship between PeU and behavioral intentions, which is consistent with findings from previous TAM studies and online courses given during the COVID-19 pandemic. Based on research conducted by Joo et al. (2018). According to Joo et al. (2018), P.US. also mediated the relationship between PeU and P.uS. attitude, lending credence to earlier mediation results with the TAM in relation to the persistence of a group of massive open online course (MOOC) students. If video conferencing tools are seen as having essential functions, students will have a more favorable impression of them, which will increase their involvement and positive P.uS. attitude about using them.

Relevance to the Field of Education

The most valuable takeaway from this study is the data it gives on the degree to which students themselves see the continued use of video conferencing tools for instruction in the post-COVID-19 era. Adding to the already substantial contributions to the TAM literature, evidence emerged arguing that university administrators should organize training sessions outside of regular classroom sessions to acquaint students with video-based learning systems and to discuss potential solutions to the reported challenges. In order for teachers to feel confident and capable while using the new video conferencing platform in the classroom, it is crucial to educate them about its features, advantages, and technical difficulties. For instance, the provided resolution should be optimal so that all student may see the movie, irrespective of their Internet connection speeds or data plan constraints. Teachers may do their students a favor by holding pre-tests where students can feel comfortable asking questions and receiving answers about new technologies; this will boost students' confidence and get them excited about trying out new tools.

When making the transition from in-person to online multimodality, it would be helpful to know how teachers and students perceive Zoom's breakout rooms, whiteboards, and screen sharing. Fast and effective implementation of learning systems requires students to be both tech-savvy and optimistic about the resources at their disposal. Colleges and universities may do their students and teachers a favor by adjusting the features of the video conferencing software to meet the specific needs of the classes that will be held there. In order for system designers to fulfill the evolving needs of students in terms of IT assistance, this information is crucial. To Attract the largest potential Student body, video conferencing software should also make the system more user-friendly and practical. Public opinion should be considered by all stakeholders in education when deciding on a learning platform. Consequently, it is advised to investigate what might make a planned platform less than perfect and then implement suitable

fixes. Gathering inP.uS.t from video conferencing platform users on accessibility issues, obstacles, and enhancement suggestions is crucial for e-learning to reach its full potential.

The study indicated that TAM had an effect on college students' interest in using Zoom for educational Purposes. Therefore, there's a possibility that it be helpful in guiding and molding Zoom at a school. Teachers and policymakers should work together to ensure that students have consistent access to professional development opportunities related to e-learning platforms like Zoom. An online course's instructional design, motivation, communication, and support all have a role in how well its students do in the course. As we approach the post-pandemic era, the school system is in dire need of blended learning, which prioritizes individualization and adaptation.

Conclusion

The main point is that there was a substantial effect of PeU with Zoom on P.US., P.uS. attitude, and perceived levels of learning. Furthermore, P.US. with Zoom did not affect perceived learning outcomes in the video conference class, but it did predict future intentions to utilize Zoom, both directly and indirectly via the PeU-behavioral-intentions link. Hence, students' self-reported accomplishment in their video conferencing course was unaffected by P.US., even if it did provide predictions about future use.

Limitations

Additional research could help address the study's many limitations. There are a lot of problems with the data collection process, which occurs during emergency online classes that are performed in response to the COVID-19 epidemic. The circumstances surrounding the changeover and continuation of online education presented a unique chance to examine students' views toward and comfort level with video conferencing tools like Zoom, even if online teaching was not the preferred manner of delivery. Secondly, this study did not investigate the subjective norm, perceived interaction, self-efficacy, or satisfaction in TAM-based models related to video conferencing technology. Furthermore, user log data may be used in future initiatives to P.uS.t Zoom's skills to actual use. Another disadvantage is that the study only used Zoom as a reference platform to compare the P.US. and PeU of other MOOCs. Investigating alternatives (such as Google Meet, WebEx, and Skype) is necessary due to the possibility of a platform gap. Future research should compare many e-learning systems to better understand the presented findings' natural state of the art.

Triangulation of data collecting techniques (e.g., classroom observations, focus individual and group interviews, artifacts) and replication in several locations are necessary for future research to expand upon and validate these first findings. Further study based on self-report or system log files regarding actual use of the Zoom platform may test validity with the original TAM factors. One more thing: this study only included students; faculty members should be a part of future studies. In addition, cultural influences may impact participants' perceptions of usability; this is because the participants' geographical location (i.e., one specific country) serves as a boundary when considering use behavior. Hence, in order to apply the current results globally, future studies can repeat the current ones with digital equality and gender inclusion included as moderators for predicting the real use of video-based systems.

When it comes to last-minute online lectures, video conferencing software has solidified its position as the preferred choice. Students, instructors, and administrators who have had good experiences with video conferencing are more inclined to utilize the technology often and for reasons other than just keeping their distance mentally. This is why research into the use of

video conferencing platforms like Zoom to modernize and improve educational environments is of the utmost importance.

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