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The Role of Technology in English Language Learning in Online Classes at Tertiary Level

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Abstract: The primary objective of the study is to investigate the relationship between the TAM (Technology Acceptance Model) factors and online applications usage for language learning. Additionally, the influence of gender and prior technology use practice have been investigated by the study. In order to comprehend the user's responses to the technology used for language learning, this study used a quantitative approach and a TAM questionnaire to collect data. The study's participants are one hundred undergraduate English as a second language students who took online courses during the COVID-19 pandemic. Students' behavioral intentions, attitudes, and app use were found to be significantly positively correlated in the research results. Besides, a positive affiliation exists between the factors; seen usability, perceived use, genuine use, and behavior. In addition, the experience has been found to be positively correlated with TAM factors, whereas gender does not appear to be associated with any TAM factors. The study suggested using technology in the classroom to make learning a second language more fun for students.

Introduction

According to Moore et al. (2011), technology is employed by many students as online learning. Al Fadda (2020) stated that approximately one-third of every undergraduate learner uses online learning somehow, and students usually choose to participate in this type of learning. However, online learning has become compulsory instead of optional in recent months due to some unpredictable universal events.

According to Winthrop (2020), 87% of schools worldwide had closed by March 30, thrusting almost 1.5 billion students and instructors into an unfamiliar domain. Covid-19 influenced society in innumerable ways; from

which the most substantial one was modifying the countries' educational system. The health authorities in Wuhan, China, say that a slew of pneumonia cases were brought on board by covid-19 in December 2019. Due to the virus's spread to other nations, COVID-19 a pandemic will be declared by WHO by March 11, 2020 (World Health Organization, 2020). To continue educational communication after the suspension of physical classes, numerous university students and teachers utilized online applications to receive and deliver information. Lack of students' motivation in English language learning is hindered by low confidence, short of vocabulary,

and teachers' use of traditional methods instead of modern tools (Gurmani, Latiff, et al., 2022; Gurmani, Salmani, et al., 2022; Shahid, Abbasi, & Bhutto, 2022; Shahid, Muhammed, et al., 2022).

This research considered students' experience utilizing online applications and web conference systems as an instrument for interceding the move to at-home education. This encompassed online education during the pandemic because of the TAM model, which acted out as the theoretic source for this study. An existing literature review demonstrates that the technology acceptance model (TAM) had not been utilized in investigating the user's attitudes toward online applications, despite the model has applied to a variety of implementations and learning atmospheres by previous studies (Liu, 2010). Henceforth, this study aims to analyze students' insights into utilizing online applications in learning language regarding PEU (Perceived Ease of Use), activities, behavioral intention, PU (Perceived Usefulness), and attitude.

Literature Review

The covid-19 epidemic directed the unpredicted closings of educational institutions across the country. Most of nations round the globe had instructed the closure of all institutes by May 15, 2020, for the rest of the academic year. As a result of these unexpected closings, many educational institutes shifted to online education to ensure education continuity. Both positive and negative consequences have been allied with online learning. Learners who joined online schools showed only slight performance improvement over the succeeding years with reduced accomplishment in math and language subjects (Fitzpatrick et al., 2020). Although, there are numerous differences between students who shifted to online education because of the epidemic and students at virtual charter schools. According to Fitzpatrick et al. (2020), on the positive side, traditional schools have less student and teacher ratio than online schools,

and before the pandemic, learners in conventional schools had already developed an optimistic relationship with their teachers. According to Li and Lalani (2020), the maintenance of material by students and decreased learning time is another possible advantage of online classes. Inaccessible infrastructure in brick-and-mortar private and public institutes and inadequate time to properly plan and deliver education virtually challenged the conversion to online delivery is the negative side of online education. Because of the pandemic, it was sudden and unexpected for teachers and students to shift online. This resulted in various learning problems associated with the technology regarding internet skills and curriculum design. To cope with these difficulties, numerous schools held work-shops related to technology usage in classrooms for their teachers. Furthermore, from the learners' side, technology would direct to unsatisfactory prospects for learning. Li and Lalani (2020) stated that it was due to parental support throughout the lesson or the accessible use of technology.

Online Communication and Language Teaching

Synchronous communication between educators and students is allowed by online applications programs. Rahayu (2020) stated that participants use a webcam and a microphone in online classes for communication parallel to the traditional classroom settings. According to Dharma et al. (2017), in live sessions, almost 200 persons can actively participate and 3000 participants can have the sight of the meeting. Though this program is based on a subscription with 1800\$ opening price for 20 hosts, a free of cost version is also present with a limited video session of 40 min. In accordance with Online applications Video Communication (2020), the time limit has been removed by the company for elementary and secondary schools. Students get more engaged in classes where they watch and hear the native speakers to enhance their

language ability (Shahid, Ahmed et al., 2022; Latiff, et al., 2023)

Within the online applications environment, learners can contribute to numerous educational activities. According to Rahayu (2020), activities like communication (greeting others), group discussions, Q/A in breakout rooms and classroom lectures, and material-related activities consist of sharing screens or slides with learners, uploading answers to questions, and downloading assignments. Rahayu (2020) stated that study-related activities could be taken in the form of polling questions, whiteboard, and chat box can be used for classroom practice, team work in breakout sessions, and slides and whiteboard for lessons. Teachers can discuss the learner's work individually, and later on these recorded meetings can be reviewed (McClendon et al., 2017),

The use of online applications has a number of advantages in an online education. According to reports, survey of approximately 60% students indicated that this program helped them to communicate easily through speaking and writing (Rahayu, 2020). According to Dharma et al. (2017), it allowed the students to answer with the help of a shared whiteboard and to cooperate efficiently with their class fellows. Sayem et al. (2017) stated that efficient communication during teaching session is one of the advantages of online applications, the capability of the teacher to give authority over a session to a student and the accessibility of the explanation tools like arrows, clear audio, lines and constant internet connection (Ferns et al., 2020). In a study by Lowenthal et al. (2020), along with other means of simultaneous virtual communication, online applications can lessen the feeling of social segregation among students and promote a bond of attachment and globalization (Abbasi, Shahid & Shah, 2022).

Besides advantages, some challenges also exist with online applications. According to Dharma et al. (2017), the features of online applications can be appeared difficult in the

beginning or less instinctive in respect of their use. Furthermore, along with other virtual programs, learners can be unfocussed and involved in multiple things, and lecture time can be lengthier than predicted (Lowenthal et al., 2020). While using online applications, unstable Wifi connections, lack of an inaudible atmosphere, and insufficient microphones create troubles for the students in some online classes (Lowenthal et al., 2020).

Research Gap and Significance of the Study

Satisfaction among EFL students regarding online education might have relied upon personality attributes. Shih et al. (2013) examined the satisfaction of 153 EFL students regarding online learning in Turkey and the association between personality and online learning motivation. Results have shown higher satisfaction and online learning motivation in students with the personality traits of diligence and extraversion. Diligent students wanted to enhance their performance through using new strategies, and sociable students were more vigorous and welcoming to innovative education styles. According to Shih et al. (2013), other aspects associated with enhancing motivation in online atmosphere encompassed social contact, the desire to use social media to run away from the actual world, academic improvement, want of self-development and learning.

Learners of EFL possibly hold optimistic sights of virtual education regardless of personality traits. The execution of mixed learning in which students attended physical and virtual classes is linked with improved resilience. Istifci (2017) stated that positive views regarding online classes have also been reported by students. According to Wu et al. (2017), EFL students also find online classes helpful in improving oral language skills by having the opportunity to record dialogues in the inverted classrooms where class timings are used for practice and instruction is delivered external to class timings online. Tai (2016) stated that enhanced writing performance and self-efficacy

are linked with collaborative online learning experiences. In a study by Wu et al. (2011), videoconferencing motivates EFL students to communicate in English with their class fellows, though it might slightly impact perceived competence and confidence in utilizing language.

Variables of the Study and their Relationship

Technology Acceptance Model

The purpose of developing the technology acceptance model was to anticipate the possibility of a person or organization adopting cutting-edge technology. Sheldon (2016) says that the reasoned action theory was where the model got its start. This theory says that a person's goal, their point of view, and the pressure from society all played a role in influencing their actions. Turner et al. claim that (2010), TAM stated that the model practice at the period the technology was utilized first could anticipate future applications.

Numerous models have been developed to identify and describe the reasons why people use, reject, or continue to use technology (Venkatesh et al., 2003). TAM was developed and introduced by Davis (1989), which was based on Ajzen and Fishbein's TRA (Theory of Reasoned Action) and provided a theoretical framework for describing the relationship between attitudes, intentions, and behaviors. In expecting the innovation's acknowledgment and reception, the innovation acknowledgment strategy recognized functional help for being strong and frugal. According to TAM, in order to accomplish a particular job an individual's accomplishment of a specific action is governed by their behavior intention.

Five variables of TAM are perceived usefulness, PEU, attitude to use, behavioral

intention toward use and actual use. Perceived ease of use believes that struggle will not be compulsory, and perceived usefulness believes that job performance is improved by technology, are the two most important aspects of the model. In combination with attitude toward use, these two variables encompass the essential variables of technology acceptance model. Consequences variables is comprise of actual use and behavioral intention toward use. Significantly, while use is predicted by behavioral intention, such an association may also occur on the contrary track, as behavioral intentions can be governed by positive user involvement. Scherer et al. (2019) stated that exterior variables comprise subjective norms, computer self-efficacy, and facilitating surroundings.

Perceived Usefulness

According to Davis (1989), it is the phenomenon in which an individual believes that the use of certain technology will enhance his/her job. The use or unused of an app is depended on whether they think it will help them do their jobs better. How workers perceive the utility of technology in learning and education determines the positive or negative attitude toward computer utilization.

Perceived Ease of Use

Davis (1989) defines PEU as the faith that using a system would not require any effort on the part of the user. In addition, perceived usefulness has a direct impact on the purpose to use, which is influenced indirectly by attitude. It is claimed by Sumak Hericko et al. (2011) that learners' attitudes are directly influenced by the perceived ease of use.

Table 1 below and Fig. 1 shows the variables of technology model.

Table 1

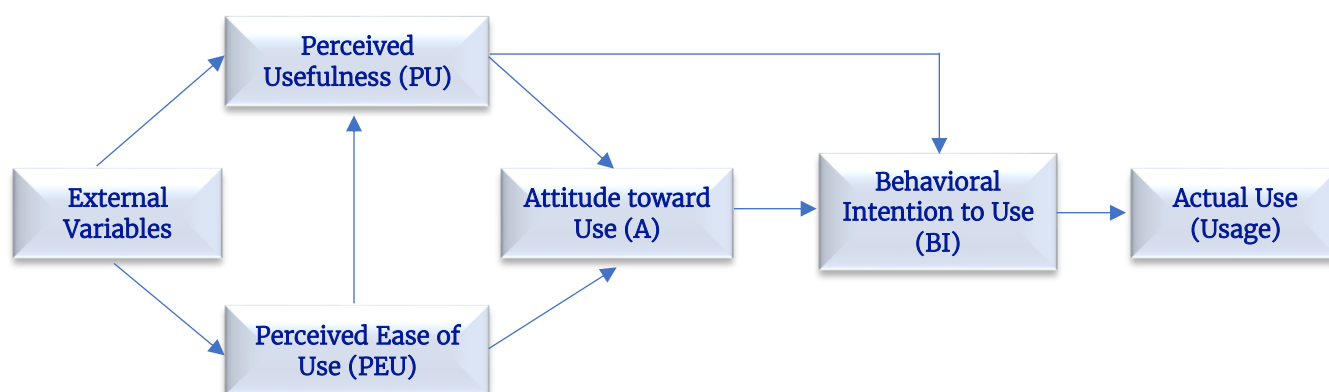
Definitions of the variables in the TAM

Constructs	Definitions
External Constructs	
Self-efficacy of computer use	The ability of the user to successfully use technology (Holden & Rada 2011)

Subjective Norms	Social pressure build by the society to use computer (Agudo-Peregrina et al. 2014)
Facilitating the use of computer	The user belief in infrastructure to use computer independently (Nikou & Economides 2017)
Main Variables	
Ease of computer use	The level of comfort while using computer (Scherer et al. 2019)
Usefulness of computer	The learners belief about effectiveness of computer (Scherer et al. 2019)
Attitude towards using computer	The learner attitude towards using the computer (Lee & Lehto 2013)
Resulting Variables	
Intention related to behavior	The intension of the user towards computer (Turner et al. 2010)
The real use of Computer	The actual use of computer (Scherer et al. 2019)

Figure 1

The Technology Acceptance Model (Turner et al., 2010)



Gender and TAM

The integration of technology acceptance model in the learning of language can be influenced by several factors. Gender differences in technology acceptance and use have received a lot of attention from researchers. (González-Gómez et al., 2012). However, there are some contradictions in the findings of these studies.

Studies have shown the impact of technology on gender. According to Thompson and Lim (1996), females find the usage of pc difficult compared to males. Investigating variations in computer usage among inward college learners by utilizing information from two other sources, it is argued by Schumacher and Morahan-Martin (2001) that females are less knowledgeable in

computer games and programming than their male peers. Male high interest and involvement in computer gaming and programming may increase their popularity and acquaintance with computer and internet compared to their female fellows (Schumacher & Morahan-Martin, 2001).

According to Braak (2004), females find computer dealing difficult compared to males. Gender differences are investigated by González-Gómez et al. (2012) concerning e-learning and aimed to discover the teaching factors that could be enhanced to increase the satisfaction of both male and female students. In regards of their e-learning teaching gratification major differentiation among male and female students are observed by González-Gómez et al. (2012) who discovered that as compared to male

students, female learners give more attention to schooling approaches, promoting active, and planning contribution in the education process. According to Padilla-Meléndez et al. (2013), gender differences in intentions and attitudes regarding the use of technology were also found in a longitudinal survey of 484 students. According to the discoveries of this research, females' behavior towards utilizing the system is affected by playfulness. However, Perceived usefulness acted as an intermediary between male playfulness and behavior. On the contrary, some researchers have discovered that in terms of using technology, there were no significant differences in gender. According to Whitley (1997), gender disparities in computer-associated manners were minor and did not diverge as a purpose of the education the population. Moreover, while recognizing the constructs that influenced both genders' behavioral purpose to utilize a computer-based valuation, it is discovered by Terzis and Economides (2011) that if the system were exuberant and its content was associated to the course and clear, both genders were more likely to employ it.

Experience and TAM

User experience can influence the acceptance of technology usage. It can be expected that workers with positive experiences may validate a positive behavior regarding technology conversely. To observe the effect of experience on technology acceptance model numerous researches have been directed. To examine how TAM helped managers predict user intent to return to a website and how this changed over time as users gained experience with the Internet and the website, it is discovered by Castañeda et al. (2007) that the familiarity of the operators with the website accomplish a modulating role. For less experienced users *PEU* was found to be a more noteworthy feature to determine the revisit of the website, whereas for more experienced users, *perceived usefulness was more effective*. In another research, it is implemented by Hsu and

Lu (2004) that technology acceptance model, which combined flow experience and social factors as; faith-related concepts to foresee operators' adoption of online games. The suggested model was practically assessed utilizing investigation data of 233 operators around their insights into online games. The outcomes uncovered that social standards, behavior, and flow experience described around 80% of game playing.

Questions and Hypotheses of the Study

Following questions for this study have been articulated

Q1. What attitudes do students have towards the Technology Acceptance Model in online classes with reference to the variables: perceived use, perceived ease of use, behavior and activities?

To support the research question the following hypotheses have been articulated:

Hypothesis 1: Computer Self-Efficacy will positively and significantly influence the overall technology acceptance.

Hypothesis 2: Perceived usefulness use will positively and significantly influence students' attitude towards computer use.

Hypothesis 3: Perceived ease of use will significantly and positively influence students perceived usefulness.

Hypothesis 4: Perceived ease of use will significantly and positively influence students' attitude towards computer use

Hypothesis 5: Gender of the students will significantly and positively influence students' acceptance of using Online applications in language learning.

Hypothesis 6: The experience of the students will significantly and positively influence students' acceptance of using Online applications in language learning.

Research Methodology

This study has quantitative approach and a survey method to analyze the factors contributing to in technology model. The

extended TAM was used to incorporate online applications into language learning. A conceptual framework was developed to investigate the usage of online apps in the learning of language by utilizing computer self-efficacy, real use of online apps, PU, attitude, PEU, and behavior intention of English through online applications. This framework was built on the findings of a widespread literature review and tentative study.

Participants of the Study

Undergraduate university students registered in specific Saudi universities in the Departments of English are the research participants. During the academic year 2021–2022, when online instruction gained popularity following COVID-19, students utilized Black Board in addition to online applications as learning tools. This period of time was impacted by unanticipated factors. Cooperation in the survey depended on the readiness of the learners who utilized web-based applications this semester to participate in the review. Almost hundred and fifty individuals were advanced to partake in the study and only one hundred filled out an online survey about how they felt about using online language

learning tools. The sample contained 50% representation of the both the genders, concerning the knowledge with technology, to find the level of skills excellent, very good, good, and fair skills in using Online applications (Table 2).

Instrumentation

A modified version of questionnaire formed by Yang and Wang (2019) used in this study. The survey consisted of two main segments: demographic profiles related questions and questions about the items of the constructs. Demographic data included the participants' age, gender, and previous experience with online applications. Respondents completed a 5-point Likert scale to show agreement with each item from strongly disagree to strongly agree. These objects were taken from numerous related researches that demonstrated the instruments' reliability and validity. The constructs of the scale; attitudes has four items, intention behavior five items, efficacy of computer three items perception of use seven items, real use three items and ease of use of technology four items.

Table 2

Demographic background of Study Participants

Areas	Number	Percentage
Gender		
Male	50	50
Female	50	50
Experience		
Fair	15	15
Good	40	40
Very good	35	35
Excellent	10	10

Table 3

Questionnaire Reliability

Cronbach's alpha	Items
.890	26

Using SPSS, the questionnaire's reliability was assessed using Cronbach's alpha (0.89). According to Table 3, the questionnaire had a reliability of 0.89.

Limitation of the Study

Context and taken sample from only two universities is the limitations of this study, so the results can be generalized in the urban contexts.

Data Collection and Procedures

The responses to a questionnaire from 100 students enrolled in BS programs at two universities—Superior University and the University of Lahore—were used to compile the data. Anderson and Gerbing (1988) suggested a two-step method for analyzing the model in this research. The validity and dependability of the variables were first evaluated using the measurement model, and the significance of the associations between the variables was evaluated using the structural model. The descriptive statistics and Cronbach's alpha coefficients were derived with SPSS 24.0. Moreover, this item was used to survey the essential model's associations.

Analysis of the Data

The collected responses were examined with the assistance of SPSS 24.0. Using Pearson's correlation coefficients (r), behavioral intention, computer self-efficacy, attitude, Perceive Usefulness, perceive ease of Use, activities were

correlated. A Pearson's relationship coefficient among .68 and 1.0 was measured high (Taylor, 1990). An association coefficient analysis was accomplished for the purpose of determining the strength of the links that occur among the six concepts. Pallant (2011) says that a correlation coefficient analysis shows how much of a correlation and how strong the linear relationship between two variables is. A positive correlation is indicated by the plus and minus signs: As the independent variable grows, so does the dependent variable; or a relationship that is bad: Pallant (2011) affirms that when the independent variable ascends, the dependent variable decreases. The worth of one variable can be exactly anticipated with the worth of the other in the event that the ideal relationship coefficient between the two factors is under 1. The upsides of a relationship coefficient can be utilized to sort out how a reliant variable influences a free factor. This guideline was used to evaluate how well the six constructs' relationships worked.

The Results and Discussion

Table 4 has presented the results of testing the measure scales' discriminant rationality. According to Teo and Noyes (2011), discriminant validity exists when the variance shared by a construct and any other construct in the model is less than the variance shared by the constructs with its indicators.

Table 4

Correlation between the constructs

Construct	Computer self-efficacy	PU	Actual use	PEU	Attitude	Behavioral Intention
Computer self-efficacy	1	.513**	.290*	.325**	.460**	.510**
		.010	.013	.003	.000	.020
PU	100	100	100	100	100	100
	.513**	1	.541**	.663**	.840**	.831*
Actual use	.001		.010	.003	.001	.001
	100	100	100	100	100	100

PEU	.266*	.434**	1	.540**	.429**	.634**
	.013	.000		.000	.000	.000
Attitude	100	100	100	100	100	100
	.354**	.687**	.524**	1	.814**	.853**
Behavioral intention	.003	.001	.002		.002	.003
	100	100	100	100	100	100

****Correlation is Significant at the .01 level (2-tailed)**

****Correlation is Significant at the .05 level (2-tailed)**

Assuming the square underlying foundations of the typical difference separated (AVE) were more prominent than the off-corner to corner components in the comparing lines and sections, it would recommend that the given development was more unequivocally associated with its pointers than with different builds in the model. The values recommended that the proposed research model's latent variables had discriminant validity. Table 4 displays the AVEs in this study with significant correlations in bold. They point to significant connections between the concepts. For instance, between attitude and PU the AVE is .834 that indicates there is a strong correlation between these two concepts.

Additionally, a strong AVE correlation (.831) exists between PU and behavior intention. A correlation between attitude and behavior intention is strong (.853). The hypotheses analyses is provided below as shown in the Table 4:

Hypothesis 1

The findings of it is abundantly clear from Table 4 that the PU of online applications and computer efficacy have a significant positive relationship (.51). PC self-viability and genuine web-based applications both have a positive relationship with the outcomes (.29). In addition, there is a important positive association among PEU and computer self-efficacy (.32). Moreover, the outcomes demonstrate that there is a critical positive connection between PC Self-Viability

and Social Goal (.51) and Disposition (.46). There is positive connection between PC Self-Ampleness and different factors. The exploration question is addressed totally. It recommends that PC self-viability and utilizing on the web applications are connected in the instructive setting. Ariff (2012) says that this study's results are like those of other studies, indicating a positive relationship between CSF and TAM.

Hypothesis 2

The outcomes in Table 4 make basically there is an important positive relationship (.51) among perceive usefulness and computer efficiency when using online applications. Moreover, the discoveries exhibit a positive affiliation (.54) among genuine use and PU. Besides, a steady certain relationship (.66) among PU and PEU exists. Additionally, the results show a strong positive connection among perceive usefulness and attitude (.84) and behavior intention (.83). Generally, positive associations were found between perceive usefulness and the other variable. Subsequently, the second question of research is well-supported. It recommends a connection between PU and educational use of online applications. Pynoo et al. state that, Perceived usefulness, behavioral intention, and attitude toward computer use are strongly correlated. This is supported by the findings of the study by Sumak et al. (2011).

Hypothesis 3

Table 4 shows a significant positive correlation (.28) among computer self-efficacy and perceive ease of use when using online applications. Additionally, the findings demonstrate a good connection (.43) among perceived ease of use and PU. In addition, PEU and attitude have a significant positive correlation (.54). Additionally, the findings demonstrate a significant positive association (.63) among Behavioral Intention and PEU. The positive associations discovered among PEU and the other variables aids the research question. Additionally, the results are consistent with those of previous TAM-based studies (Weng & Tsai, 2015).

Hypothesis 5

Table 5

Results of Correlation between other variables and gender

Gender of the Participants	Computer Efficacy – .348**	Perceived Use – .301**	Actual use – .175	Ease of Use – .127	Attitude – .262*	Behavioral intention – .167
.002	.009	.134	.278	.023	.151	
75	75	75	75	75	75	

**Correlation is Significant at the .01 level (2-tailed)

**Correlation is Significant at the .05 level (2-tailed)

According to Table 5, there is a negative relationship among the gender of the students and their acknowledgment of online learning of language applications. This suggests that TAM was unaffected by gender. This study's findings are consistent with the findings of Terzis and Economides (2011), who came to the conclusion that men and women utilized technology more effectively. In some studies, male and female students' perceptions of the associations between the concepts that influence the behavior intention to utilize e-learning and computers fluctuate, as stated by Venkatesh (2000). However, the literature did not contain any conclusive findings. In terms of perceptions and attitudes, previous research (Koohang, 2004) verified that male learners were more supportive of the use of computers in an education

Hypothesis 4

When it comes to using online applications, there is a significant positive correlation (.35) between an individual's attitude and their level of computer self-efficacy. The relationship between attitude and PU is positive (.68). There is a (.52) correlation between activities and attitude. Mentality and conduct expectation has relationship (.85). Attitudes and different factors support the exploration question. The results of this study, like those of others like Chen (2010), Park (2009) and Wong and Co (2010).

environment (Enoch & Soker, 2006). Tondeur and co. (2008) discovered that male instructors utilized computers more frequently than female teachers did for teaching purposes, there was no accurately noteworthy change in male and female perceptions of e-learning usage (Hung et al., 2010).

Hypothesis 6

There is a slight positive relationship between the learners' practice and their acceptance of utilizing online applications of language learning, as shown in Table 6. Since experience is a strong predictor of perceived usefulness, it stands to reason that more experience may result in increased usefulness. This result is consistent with previous research of Hsu and Lu (2004), demonstrated that satisfied users had a favorable attitude toward technology.

Table 6*Correlation between other variables and students experience of computer use*

List of Variable	Computer self-efficacy	Perceived Use	Actual use	Ease of Use	Attitude	Behavior Intention
Experience of computer	.100	.259*	.101	.346**	.332**	.310**
	.393	.025	.389	.002	.004	.007
	75	75	75	75	75	75

**Correlation is Significant at the .01 level (2-tailed)

**Correlation is Significant at the .05 level (2-tailed)

According to the findings, about 80% of the game playing was explained by social norms, attitude, and flow experience (Hsu & Lu, 2004).

Conclusion and Future Implications

The study concluded that TAM influenced university students' intentions to use online learning applications. As a result, the university's online application development and management could benefit from its practical application. Teachers and administrators should try to further develop college understudies' abilities in web applications and some other stages of e-learning. By incorporating e-learning into university courses, managers and developers of e-learning must assist students in improving their positive perception and enhancing their English language skills in the four areas; speaking, listening, reading, and writing (Shahid, Abbasi, & Gurmani, 2022; Shahid, Ong, et al., 2019). This study applied the extended TAM model to online language learning applications. It also looked at how gender and experience affect how people use technology. The study concluded that students' attitudes and behavioral intentions are strongly correlated with their actual use of online applications. Computer self-viability was likewise positively connected with different factors, like PU, PEU, actual use, behavioral intention, and attitude. Gender was also found to have no correlation with any of the model variables. Though, there is a positive association between experience and the TAM variables. Some limitations in this study may be addressed in

subsequent studies. The study's relatively small sample size may limit the results' generalizability. Future research may yield results that attest to the model's efficacy with a larger sample size. Second, the people who participated in this study all had the same cultural and linguistic upbringing. Students from various cultural upbringings may be encompassed in the model to further validate the findings. As a result, it is preferable to include learners at various stages of language from beginning to advance in upcoming research. Thirdly, the analysis of self-reported data serves as the foundation for this study's findings. Future studies may incorporate observational data to triangulate the discoveries and overcome the drawbacks of self-perceived information. Fourthly, perceptions of using online applications and other e-learning platforms may be influenced by cultural issues. As a result, it is suggested that cultural issues be considered in future research. Last but not least, this research is a cross-sectional examination of how learners perceive utilizing online applications. As a result, observations may change in the forthcoming; a longitudinal research with various data sources (such as interviews and observations) may provide a complete picture of the intention to use online applications.

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