Relationship between Technology Acceptance and Technology Anxiety among Iranian EFL Learners

Fatemeh Bagherian Rafsanjani Pour[1], Mehry Haddad Narafshan[2]*

[1]Ph.D. Candidate, Department of English Language, Kerman Branch, Islamic Azad University, Kerman, Iran

[2]Assistant Professor, Department of English Language, Kerman Branch, Islamic Azad University, Kerman, Iran

Citation

Bagherian Rafsanjani Pour, F. & Haddad Narafshan, M. (2022). Relationship between Technology Acceptance and Technology Anxiety among Iranian EFL Learners .*International Journal of Language and Translation Research, 2*(4), pp. 79-106.

Research Article

Available online

Keywords:
Technology-integrated classrooms, technology acceptance, technology anxiety

Abstract

The ongoing Covid-19 pandemic has caused unforeseen interruptions in education worldwide. Many countries have responded to the pandemic crisis by switching to online distance education. To address this need, the current study examined the relationship between technology acceptance and technology anxiety in the EFL context of Iran. Study participants included 116 Iranian students enrolled in B.A. English language courses in English language teaching, translation, and literature at Islamic Azad University, Kerman Branch. The data were derived from Abdul Ghani et al. 's technology acceptance questionnaire (2019) and Loyd and Gressard's (1984) technology anxiety questionnaire. After analyzing the data, the results demonstrated a significant negative correlation between technology acceptance, perceived usefulness, perceived ease of use, behavioral intention to use, attitude, and technology anxiety. An increase in technology acceptance and its components led to a decrease in technology anxiety, and perceived ease of use was the strongest component of technology acceptance to predict technology anxiety. Moreover, the first feature of technology acceptance was perceived ease of use, and the last feature was the behavioral intention to use it. Participants' major was not a meaningful mediator affecting the relationship between technology acceptance and technology anxiety. Therefore, minimizing technology anxiety and optimizing the effectiveness of technology in educational contexts requires teachers, students, and curriculum designers to consider students' readiness and acceptance of technology.

رابطه پذیرش فناوری و اضطراب فناوری در زبان آموزان ایرانی

همه گیری مداوم کووید-19 باعث وقفه های غیرقابل پیش بینی در آموزش در سراسر جهان شده است. بسیاری از کشورها با روی آوردن به آموزش از راه دور آنلاین به بحران همه گیر پاسخ داده اند. برای رفع این نیاز، مطالعه حاضر به بررسی رابطه بین پذیرش فناوری و اضطراب فناوری در زمینه EFL ایران پرداخته است. شرکت کنندگان در مطالعه شامل 116 دانشجوی ایرانی بودند که در مقطع کارشناسی ارشد ثبت نام کرده بودند. دوره های آموزش زبان انگلیسی، مترجمی و ادبیات انگلیسی در دانشگاه آزاد اسلامی واحد کرمان. داده ها از عبدالغنی و همکاران استخراج شده است. پرسشنامه پذیرش فناوری (2019) و پرسشنامه اضطراب فناوری لوید و گرسارد (1984). پس از تجزیه و تحلیل داده ها، نتایج نشان داد که بین پذیرش فناوری، سودمندی درک شده، سهولت استفاده درک شده، قصد رفتاری برای استفاده، نگرش و اضطراب فناوری رابطه منفی معناداری وجود دارد. افزایش پذیرش فناوری و مؤلفه‌های آن منجر به کاهش اضطراب فناوری شد و سهولت درک شده قوی‌ترین مؤلفه پذیرش فناوری برای پیش‌بینی اضطراب فناوری بود. علاوه بر این، اولین ویژگی پذیرش فناوری درک سهولت استفاده و آخرین ویژگی، قصد رفتاری برای استفاده از آن بود. رشته تحصیلی شرکت کنندگان یک میانجی معنادار نبود که بر رابطه بین پذیرش فناوری و اضطراب فناوری تأثیر بگذارد. بنابراین، به حداقل رساندن اضطراب فناوری و بهینه‌سازی اثربخشی فناوری در زمینه‌های آموزشی، معلمان، دانش‌آموزان و طراحان برنامه درسی را می‌طلبد که آمادگی و پذیرش فناوری دانش‌آموزان را در نظر بگیرند.

واژگان کلیدی: کلاس های درس یکپارچه با فناوری، پذیرش فناوری، اضطراب فناوری

*Corresponding Author's Email:
mnarafshan@yahoo.com

P-ISSN:2750-0594
E-ISSN:2750-0608

Introduction

Over the last four decades, the educational technology research field has grown from a highly specialized and niche area of inquiry to a major subfield of education. What was once a tangential area of educational research with only a very few dedicated journals in the 1980s is now an entire subfield of the social sciences with several dozen journals. Accompanying this evolution of the learning technology field has been a shift from an almost exclusive focus on how technology affects learning outcomes to also concentrating on several other aspects of educational technology use and evaluation. For instance, educational technology researchers have variously focused on several other important themes such as the affective impact of learning technology use (Heckel & Ringeisen, 2019), patterns of interaction and behavior (Pursel et al., 2016), possibilities for and consequences of different technology features (Wu, 2016), different pedagogical uses of technology (Garzón & Bautista, 2018), the impact of different learning designs and corresponding approaches (Laurillard et al., 2013), the way technology use can impact on presence and community (Joksimovic et al., 2015), as well as the role of institutional and systemic factors in affecting the use of technology in education (Porter & Graham, 2016). The lack of recent meta-reviews in the learning technology field more broadly means that it is difficult for researchers and educators to understand the trends and patterns across the field, such as those that relate to key areas of evaluative focus such as learning, behavior, affective elements, and other pertinent themes (Lai & Bower, 2019).

The ongoing Covid-19 pandemic has caused unforeseen interruptions in education worldwide. Many countries have responded to the pandemic crisis by switching to online distance education. In general, K-12 schooling systems are designed for face-to-face education. Thus, the urgent switch from face-to-face to online distance education has created a state of chaos in many schools. School administrators, teachers, and parents have been struggling to facilitate meaningful and effective learning experiences throughout the chaos (Richmond et al., 2020). In a short period, schools have had to adopt a variety of technologies [e.g., online teaching tools and Learning Management Systems (LMS) to continue their education]. During the transition to online remote education, teachers have faced multiple challenges such as a lack of technological infrastructure and support, inexperience with digital technologies, and a lack of online teaching skills (Khlaif et al., 2020). This has caused immense amounts of workload and stress on teachers (Marek et al., 2020). Consequently, students have expressed several concerns about the quality of online

teaching during the pandemic (Aguilera-Hermida, 2020; Perrotta, 2020). Further, studies have found significant differences between the schools in terms of the quality of pandemic-time education (Maity et al., 2020). Considering these findings, it is important to investigate the factors that facilitate effective technology integration in schools during this extraordinary time (Dindar et al., 2021).

The role of technology in the second language (L2) learning outside the classroom is an important, but often marginalized and neglected, topic of instructed second language acquisition (ISLA) research (Reinders & Stockwell, 2017). On the one hand, technology has become ubiquitous for many L2 learners who wish to study an L2 beyond the classroom (Reinders & Benson, 2017). However, ISLA research into the effectiveness of technology in facilitating L2 acquisition has not kept pace with the situation on the ground. In part, this deficit is due to the rapidly changing nature of the technology used in L2 learning and teaching. But more importantly, research on the use of technology has often focused on describing the technology itself rather than on rigorously investigating if, and how, technology assists L2 development (Loewen et al., 2020).

A significant number of studies have explored the promise and challenges of teachers' ICT usage in school settings through a variety of frameworks (Scherer et al., 2019). For example, the technological pedagogical content knowledge (TPACK) framework has been introduced to conceptualize how technology can be blended with pedagogical practices in the classrooms (Mishra & Koehler, 2006). In addition, different technology acceptance frameworks have been utilized to explain the factors that contribute to teachers' technology acceptance. Among those, the Unified Theory of Acceptance and Use of Technology (UTAUT) has been a prominent framework for studying teachers' behavioral intention to use technology for teaching and learning (Chao, 2019). UTAUT originally comprises four key factors (performance expectancy, effort expectancy, social influence, facilitating conditions) and several mediators (gender, age, experience, and voluntariness of use) that impact the behavioral intention to use a specific technology (Venkatesh et al., 2003).

Although recent reviews of smart learning environments address problems such as technology evaluation (Lai & Bower, 2019), student engagement (Schindler et al., 2017), technology-supported peer assessment (Fu et al., 2019), and the use of smart boards (Mun & Abdullah, 2016), literature is limited in capturing and presenting the range of underpinning socio-technological challenges of smart classrooms. The recent development in technology and web-based services has provided support to online education and real-time interactions (Lee, 2010). E-learning has all

that it takes to replace the traditional classroom setting expanding the reach of learning beyond the boundaries, time, and space (Baylari & Montazer, 2009). E-learning has the potential to be an alternative to take teaching to another level (Ozkan & Koseler, 2009). Online learning has shown rapid growth over the past few decades. To ensure good quality of online education and to gain colossal success in the usage of these technical resources in e-learning, some factors, especially from the instructors' side need to be considered like instructor attitude, competency, and interaction. Incompatibility in any one of the factors will disproportionate the entire teaching process (Soong et al., 2001). Technology-based learning has played a significant role in every field, and it has deeply influenced academics.

Davis (1989) suggested a technology acceptance model (TAM) explicates a potential individual's behavioral intentions of using a technological method. In existing e-learning technology studies, TAM is the most common theory being used to understand the intention to accept e-learning (SUmak ˇ et al., 2011). It mainly focuses on the analysis of how learners' or instructors' attitudes toward ICT influence the acceptance of it (Elkaseh et al., 2016). Many researchers used TAM to assess the acceptance of e-learning in different contexts (Al-Fraihat et al., 2020; Baby & Kannammal, 2020; Eraslan Yalcin & Kutlu, 2019). There are two factors, which predict the users' perception of the technology acceptance in TAM-perceived ease of use and perceived usefulness (Abdullah et al., 2016). In some studies, external factors were tested with these two factors to examine the acceptance model in different contexts (Liang, 2019). There are debates about the use of TAM to explain teachers' and students' acceptance of information systems within the educational context (Goh et al., 2020). Bunz et al. 2020 recently transformed the TAM into Virtual Reality Technology Scale (AVRTS) to develop the scales measuring attitudes toward virtual reality technology. Thus, this signifies the robustness of the model to test the acceptance of information systems in different contexts and environments like the current crisis. Glahn and Gruber (2020) raised an important issue of contextual education design and found that interactive environments and learning resources lead to contextualization passively by permitting learners to enlarge their learning ambit into new settings (Baber, 2021).

Resources to support language educators learn how to deliver their instruction effectively online are only part of the story. At the same time, many language learners are also ill-prepared for the new learning environment and are working under considerations of significant stress. Students may not only lack knowledge of instructional technologies but many of them

may also lack the motivation to learn online, which requires them to have self-discipline and to take greater responsibility for their learning (Russell & Murphy-Judy, 2020). Moreover, most students did not voluntarily elect to take language coursework online at this time; therefore, they may have negative feelings associated with online learning. In addition to these factors, students may have anxiety related to using new educational technologies, anxiety about language learning, and/or general anxiety related to their home situation as well as the worldwide pandemic. In this context, it is especially useful to examine foreign language anxiety, how it is measured, and what steps instructors can take to reduce their students' feelings of anxiety while learning online. While it may not be possible to alleviate all the anxiety that students are experiencing at this time, language educators can help reduce the anxiety that students may feel because of learning a language online (Russell, 2020).

Although it is recognized that the social and collaborative spaces of online interaction provide scope for agency and identity work (Blake, 2016), in the absence of research grounded in specific contexts of digital practice, and without robust conceptualizations of technology acceptance influences arising when language learning involves digitally mediated interactions, the digital technology acceptance, and anxiety remains somewhat of a black box (Henry, 2018). Consequently, the current study investigated the relationship between technology acceptance and technology anxiety in the English as a foreign language context of Iran.

The Problem

A critical factor for the successful implementation of any information system is its users' acceptance (Farzandipour et al., 2019). Although it is evident that preparation generally leads to improvement in learner achievement outcomes, most of the research evidence has been obtained from studies of traditional preparation in face-to-face settings, as well as intelligent tutoring systems (Kulik & Fletcher, 2016; Steenbergen-Hu & Cooper, 2014). Limited research has been directed toward learners' readiness and acceptance in online environments (Baji et al., 2022; Farzandipour et al., 2019). Although there are enough studies that emphasize the importance of student and instructor characteristics to enhance learning, e-learning during the pandemic is more of forced learning than planned one (Bao, 2020), and the issues of e-learning acceptance and anxiety are not the main concern of researchers in the field of language studies. Therefore, further research is required to investigate the factors which are related to the acceptance of this forceful shift toward e-learning. The situation during this COVID-19 outbreak is an exceptional one and

the negative impact of the lockdown and long quarantine period on the learners' psychological condition must be the main point of concern (Brooks et al., 2020).

On the other hand, technology gives learners greater control over presentations of self in interpersonal interactions and increased access to social information and large networks of others to receive feedback and reify self-concepts (Manago, 2015). Since social networks have been growing (Arendt, 2019) and they share lifestyles, experiences, and feelings (Shumake et al., 2017), new effects have emerged in promoting ideals, raising awareness and self-acceptance of adolescents who tend to place greater attention and emotional intensity on their personal identities and selves (Ma~nas-Viniegra et al., 2020). There does seem to be a link between the EFL learners' self-involvement in specific personal, social, and cultural settings and the proliferation of social media in the digital age. As a form of social and intercultural practice, technology leads to self-sensitivity and several social actions for improvement, and it may also help refine participants' self-understanding as L2 learners which affects technology acceptance among its users. This needs instructional planning that provides the required time and space for awareness, acceptance, reflection, and self-exploration. Despite the interest in self-development in digital environments, there are few studies on technology acceptance and no studies on the technology anxiety in digital spaces among EFL learners in the context of Iran.

Students with high e-learning anxiety may have lots of problems (Paul & Glassman, 2017; Rahimi & Soleymani, 2015). For example, they might suffer from physical discomfort (e.g., racing heartbeat), maladaptive thought processes (e.g., I cannot learn in online classes), and avoidance of attending online classes altogether (e.g., avoiding online classes to learn something new). Students' e-learning anxiety may be created by various factors (Bates & Khasawneh, 2007) one of which can be a lack of student readiness and acceptance. Other factors are low learning efficiency and uncertainty (Abdous, 2019), low computer confidence or skills, inability to manage the course tasks, unpreparedness for online courses, and low control of locus due to distractions online (Saade et al., 2013), and students' confidence in completing online classes (Sun & Rueda, 2012). What is clear from the literature is that e-learning anxiety is a critical factor in online classes that may affect and be affected by diverse factors (Azizi et al., 2022).

Research Questions

The present study was guided by the following research questions:

RQ1. What is the relationship between learners' technology acceptance and technology anxiety in English language classrooms?

RQ2. Which variable is predicting the relationship between learners' technology acceptance and technology anxiety in English language classrooms?

RQ3.Is academic major moderating the relationship between learners' technology acceptance and technology anxiety in English language classrooms?

Theoretical Framework of the Study

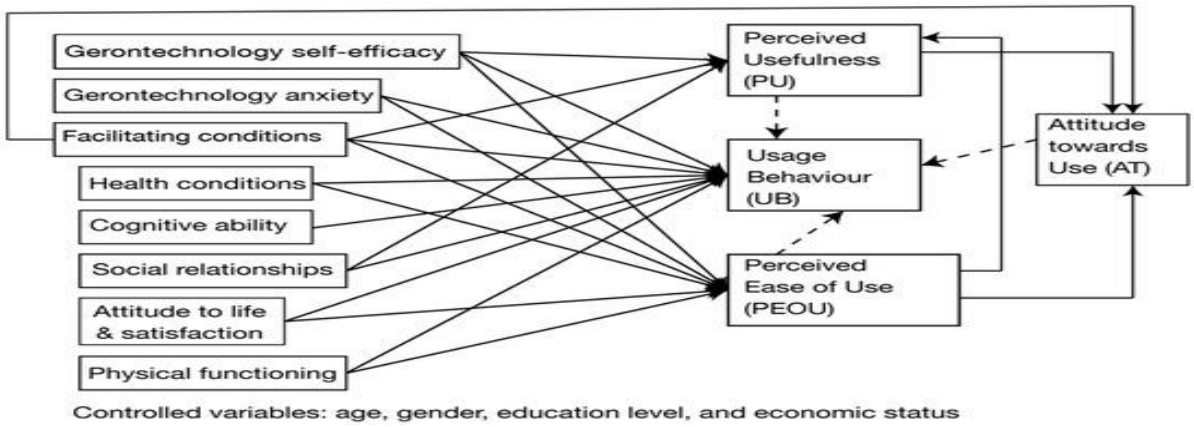
The theoretical framework of this study is based on kemp et al. (2019) Technology Acceptance Model. Kemp et al. (2019) analyzed different technology acceptance models and developed a taxonomy of factors that affect attitudes toward the use of educational technologies by students or educators in higher education institutions. The taxonomy included seven primary categories: a) attitude, affect, and motivation; b) social factors; c) usefulness and visibility; d) instructional attributes; e) perceived behavioral control, f) cognitive engagement, and g) system attributes. The factors that will be considered are attitude, affect, motivation, perceived behavioral control, and cognitive engagement (Aguilera-Hermida, 2020).

Venkatesh et al. (2003) revised Davis'TAM, TAM2 (Venkatesh & Davis, 2000), C-TAM-TPB (Taylor & Todd, 1995), the TRA (Fishbein & Ajzen, 1975), Theory of Planned Behaviour (Ajzen, 1991), the Motivational Model (Deci, 1971; Vallerand, 1997), the Model of PC Utilization (Thompson et al., 1991), the IDT (Rogers, 1983) and Social Cognitive Theory (Bandura, 1986) in 2003, which resulted in the construction of the Universal Theory of Acceptance and Use of Technology (UTAUT). The UTAUT differs from Davis' original TAM in that it adds a Social Norm construct as a direct influencer of Behavioural Intent to Use, and a Facilitating Conditions construct as a direct influencer of Actual Use. The construction of the UTAUT included judgments about the strength or value of some constructs, and so does not include, inter alia, attitude, affect, or self-efficacy while recent research demonstrates the mediating role of attitude in some situations (López-Bonilla & López-Bonilla, 2017; Moreno et al., 2017; Park et al., 2012) and the variance of self-efficacy in different contexts (Tarhini et al., 2015). The UTAUT has been applied to both general and educational technologies and has internal reliability in various studies (Oye et al., 2014; Sumak et al., 2010), although its utility has not been universal in contrast to the TAM's more flexible structure (Ros et al., 2015). More recently, the General Extended Technology Acceptance Model for E-Learning (GETAMEL) model was produced after extensive review in different

settings and covers a wide variety of educational technologies (Abdullah & Ward, 2016), and has been successfully used in over a hundred studies since its publication. The GETAMEL model comprises the five most-used constructs from reviewed research and so excludes constructs that have nonetheless been influential elsewhere (kemp et al., 2019).

Figure 1

Technology Acceptance Model



Methodology

Research Design

In the current cross-sectional survey, a quantitative research design was used applying two questionnaires. In this study, the predictor variable was technology acceptance, and the criterion variable was technology anxiety.

Participants

The participants of the current study were 116 B.A. English language learners at Islamic Azad University, Kerman Branch during the academic year 2021-2022. According to Table 3.1, all participants were female. And out of 116 Students participating in this study, 53 (45.7%) of them were students of teaching, 34 (29.3%) were studying literature, and 29 (25%) were students of translation. They were invited to complete the questionnaires in the classroom environment, or they were sent to the students as an online questionnaire. Before completing the questionnaires, students were informed about the study aims and the general form of the questionnaires, and that their participation was completely voluntary and anonymous. It took respondents approximately 30–40 minutes to complete the questionnaires. All participation was voluntary, and participants

were willing to share truthfully during the research. They also understood that the results of the data collection were intended only for research purposes.

Table 1

Frequency Distribution of Participants

Sex	Female	Frequency	Percent	Valid Percent	Cumulative Percent
		116	100	100	100

		Frequency	Percent	Valid Percent	Cumulative Percent
Major	Teaching	53	45.7	45.7	45.7
	Literature	34	29.3	29.3	75.0
	Translation	29	25.0	25.0	100
	Total	116	100	100	

Instruments

To investigate the participants' attitudes toward technology acceptance, the researchers administered Abdul Ghani et al. 's (2019) technology acceptance questionnaire. This questionnaire consists of 30 items which are based on a five-point Likert scale, ranging from strongly disagree to strongly agree. To give meaning to the participants' responses and calculate the test results' numerical value, every option was given a value as follows: strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5. This study also conducted a reliability analysis to ensure the internal reliability and consistency of the items used in the questionnaire. According to Pallant (2007), for an item to be reliable, Cronbach's Alpha coefficient for the scale should be 0.70 and above which indicate that the items are homogeneous and measure the same constant. The results of the reliability tests for the measurement scales are shown below. As Cronbach's alpha reliability scores for all the constructs exceed 0.75, it can be deduced that all the items for each construct have considerably good reliability, hence, the questionnaire is a reliable measurement instrument.

Table 2

Cronbach's Alpha Coefficient

Construct	Cronbach's Alpha	No. of Item
Perceived Ease of Use (PEU)	0.818	6
Perceived of Usefulness (PU)	0.870	5
Attitude (AT)	0.846	5
Behavioral Intention to Use (BI)	0.757	4

To investigate the participants' attitudes towards technology anxiety, the researchers employed and administered Loyd and Gressard's (1984)' technology anxiety questionnaire. This questionnaire consists of 12 items which are based on a five-point Likert scale, ranging from strongly disagree to strongly agree. To give meaning to the participants' responses and calculate the test results' numerical value, every option was given a value as follows: strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5.To estimate the internal reliability of the questionnaire, Cronbach's alpha was reported as 0.89, which shows high reliability. To determine the validity of the items in both questionnaires five subject matter experts were also consulted to validate and evaluate the items in the research instrument. Some of the items were amended according to opinions and suggestions given by the experts.

Procedure

The research site was the foreign language departments of the Islamic Azad University of Kerman, Iran during the academic year 2021-2022. After receiving the agreement from the university research department, the researcher approached the professors at the university and clarified the objectives of the research in detail. Answering the questions on the questionnaires took around 30 to 40 min, and participants were free to fill out the questionnaires in their own free time. The two questionnaires were submitted to more than 150 English language learners either in person or electronically through their emails or an already designed Google Doc link of the questionnaires for those who were physically distant from the researchers. Some students remained reluctant to share their responses and refused to fill out the questionnaires, but 116 students completed both questionnaires. Having direct contact with students as a member of the research society formed a bond of trust between the researcher and participants. The participants were oriented to the objectives of the study, procedure, and limitations and then asked to participate voluntarily. To keep the participants' information confidential, all identifications were removed, and pseudonyms were used instead. All questionnaires were treated anonymously.

Results

As shown in Table 3 below, all variables had a normal distribution. (P-value >0.05).

To investigate if there is any significant relationship between Technology Acceptance and Technology Anxiety, the Pearson Correlation was run. Based on the results in Table 4, regarding

the P-Value that is lower than 0.01 (P-Value= 0.01), it can be said with more than 99% confidence that there is a meaningful negative correlation between Technology Acceptance and Technology Anxiety, with increasing Technology Acceptance, Technology Anxiety decreases (r =-0.638, n=116). Therefore, by increasing Technology Acceptance, Technology Anxiety will decrease and vice versa, too. Regarding R Square (R^2=0.406), it means that Technology Acceptance predicts 41% of Technology Anxiety variance.

Table 3

Kolmogorov-Smirnov Test

Variables	N	Mean	Std. Deviation	Statistics	P-value
Technology Acceptance	116	79.68	9.70	0.993	0.772
Perceived Usefulness	116	21.10	2.64	1.189	0.118
Perceived Ease of Use	116	22.71	3.33	0.974	0.299
Behavioral Intention to Use	116	15.11	2.65	0.947	0.331
Attitude	116	20.76	2.85	1.221	0.101
Technology Anxiety	116	28.14	7.21	0.976	0.584

Table 4

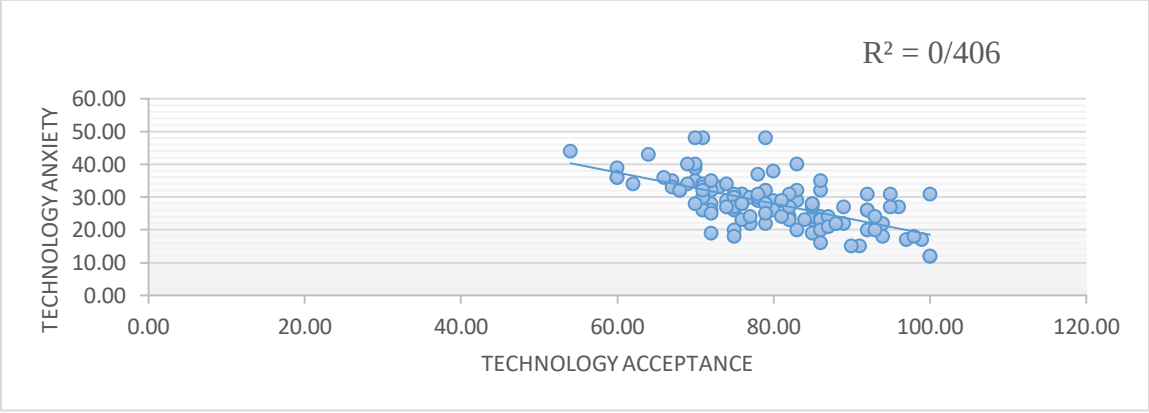
Pearson correlation analysis between Technology Acceptance *and Technology Anxiety*

Variables	Technology Anxiety		
	Pearson Correlation	P	R square
Technology Acceptance	-0.638	0.000	0.406

**p<0.01

Figure 2

Scatter Plot of the Relationship between Technology Acceptance and Technology Anxiety



To investigate if there is any significant relationship between Perceived Usefulness and Technology Anxiety, the Pearson Correlation was run. Based on the results in Table 5, regarding the P-Value that is lower than 0.01 (P-Value= 0.01), it can be said with more than 99% confidence that there is a meaningful negative correlation between Perceived Usefulness and Technology Anxiety, with increasing Perceived Usefulness, Technology Anxiety decreases (r = -0.535, n=116). Therefore, by increasing Perceived Usefulness, Technology Anxiety will decrease and vice versa, too. Regarding R Square (R^2=0.286), it means that Perceived Usefulness predicts 29% of Technology Anxiety variance.

Table 5

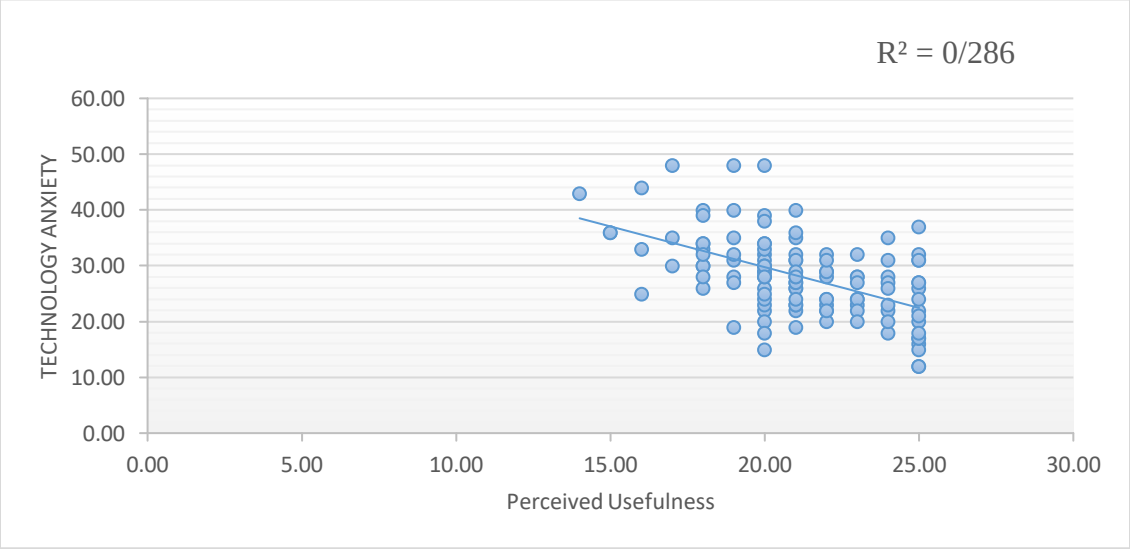
Pearson correlation analysis between Perceived Usefulness *and* Technology Anxiety

Variables	**Technology Anxiety**		
	Pearson Correlation	P	R square
Perceived Usefulness	-0.535	0.000	0.286

**p<0.01

Figure 3

Scatter Plot of the Relationship between Perceived Usefulness and Technology Anxiety



To investigate if there is any significant relationship between Perceived Ease of Use and Technology Anxiety, the Pearson Correlation was run. Based on the results in Table 6, regarding the P-Value that is lower than 0.01 (P-Value= 0.01), it can be said with more than 99% confidence

that there is a meaningful negative correlation between Perceived Ease of Use and Technology Anxiety, with increasing Perceived Ease of Use, Technology Anxiety decreases (r = -0.554, n=116). Therefore, by increasing the Perceived Ease of Use, Technology Anxiety will decrease and vice versa, too. Regarding R Square (R^2=0.307), it means that Perceived Ease of Use predicts 31% of Technology Anxiety variance.

Table 6

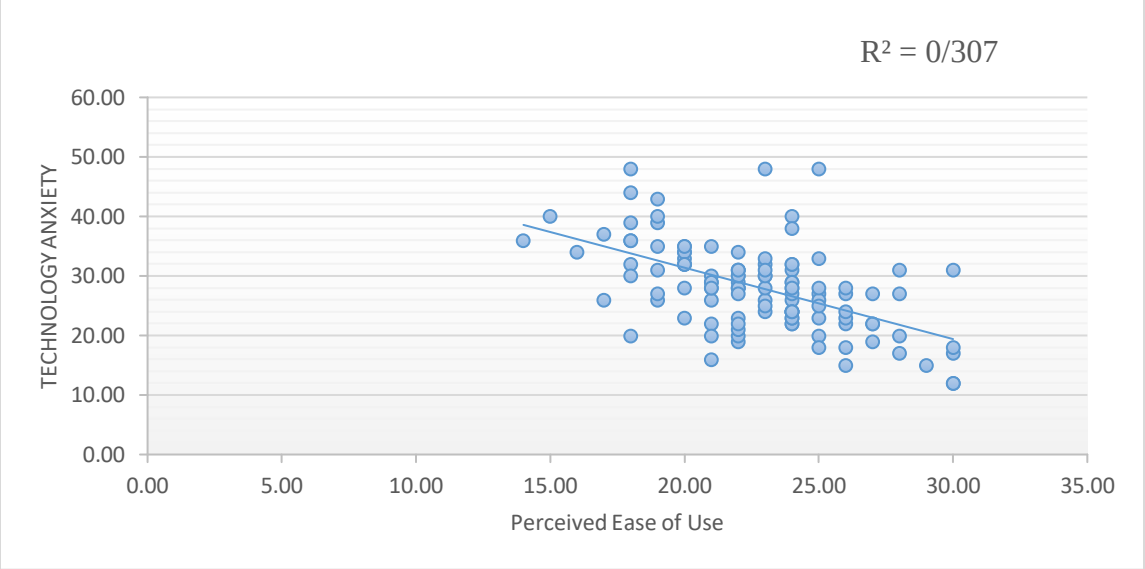
Pearson correlation analysis between Perceived Ease of Use and Technology Anxiety

Variables	**Technology Anxiety**		
	Pearson Correlation	P	R square
Perceived Ease of Use	-0.554	0.000	0.307

**p<0.01

Figure 4

Scatter Plot of the Relationship between Perceived Ease of Use and Technology Anxiety



To investigate if there is any significant relationship between Behavioral Intention to Use and Technology Anxiety, the Pearson Correlation was run. Based on the results in Table 7, regarding the P-Value that is lower than 0.01 (P-Value= 0.01), it can be said with more than 99% confidence that there is a meaningful negative correlation between Behavioral Intention to Use and Technology Anxiety, with increasing Behavioral Intention to Use, Technology Anxiety decreases. (r = -0.492, n=116). Therefore, by increasing the Behavioral Intention to Use, Technology Anxiety

will decrease and vice versa, too. Regarding R Square (R^2=0.242), it means that Behavioral Intention to Use predicts 24% of Technology Anxiety variance.

Table 7

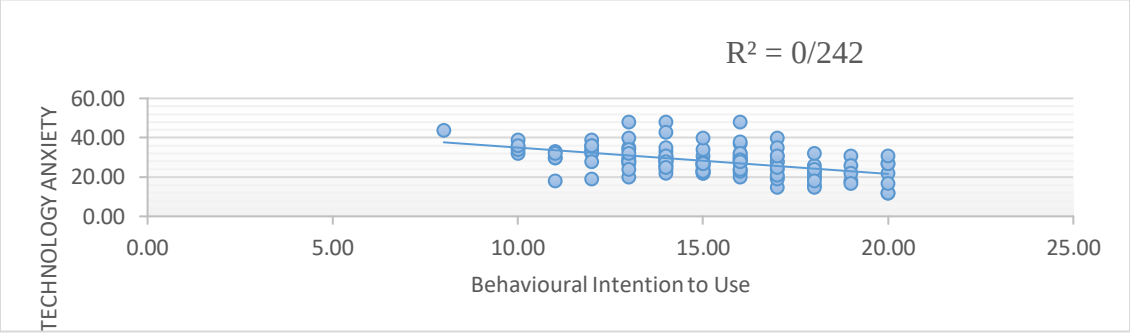
Pearson correlation analysis between Behavioral Intention to Use and Technology Anxiety

Variables	**Technology Anxiety**		
	Pearson Correlation	P	R square
Behavioral Intention to Use	-0.492	0.000	0.242

**p<0.01

Figure 5

Scatter Plot of the Relationship between Behavioral Intention to Use and Technology Anxiety



To investigate if there is any significant relationship between Attitude and Technology Anxiety, the Pearson Correlation was run. Based on the results in Table 8, regarding the P-Value that is lower than 0.01 (P-Value= 0.01), it can be said with more than 99% confidence that there is a meaningful negative correlation between Attitude and Technology Anxiety, with increasing Attitude, Technology Anxiety decreases. (r = -0.567, n=116). Therefore, by increasing the Attitude, Technology Anxiety will decrease and vice versa, too. Regarding R Square (R^2=0.321), it means that Attitude predicts 32% of Technology Anxiety variance.

Table 8

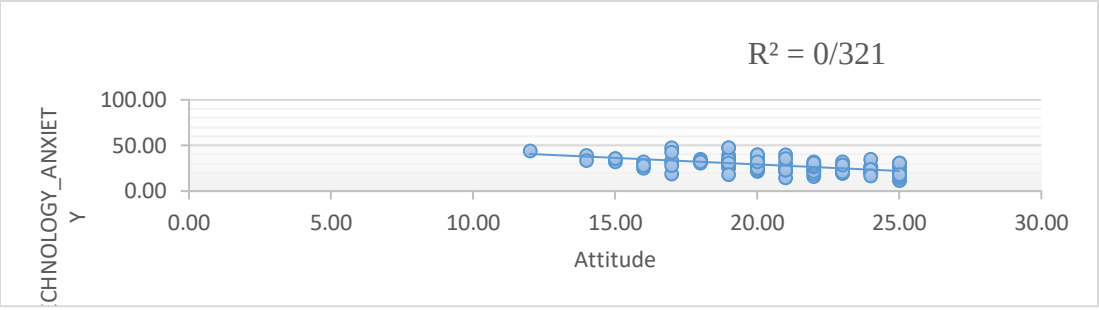
Pearson correlation analysis between Attitude *and Technology Anxiety*

Variables	**Technology Anxiety**		
	Pearson Correlation	P	R square
Attitude	-0.567	0.000	0.321

**p<0.01

Figure 6

Scatter Plot of the Relationship between Attitude and Technology Anxiety



To predict Technology Anxiety considering 4 components of Technology Acceptance, the Multiple Linear Regression Enter Method was run. Based on the results in Table 9, this model of regression was valid enough at the level of 0.01 (F = 20.32, P-Value of F<0.01).

Table 9

Analysis of variance or ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2529.306	4	632.327	20.318	.000[b]
	Residual	3454.487	111	31.122		
	Total	5983.793	115			

Considering the results in Table 11, among 4 variables that entered this model, Perceived Ease of Use (β = -0.19, the p-value of t<0.01) and Attitude (β = -0.26, the p-value of t<0.05) could predict Technology Anxiety meaningfully and negatively but Perceived Usefulness (P-Value of t > 0.05) and Behavioral Intention to use (P-Value of t > 0.05) couldn't. Regarding the adjusted R Square in Table 9 (Adjusted R^2 =0.40), it can be said that Perceived Ease of Use and Attitude factors predict 40% of Technology Anxiety variance. Therefore, it can be concluded that the most effective component of Technology Acceptance in predicting Technology Anxiety was the first Attitude and then Perceived Ease of Use.

Table 10

R square or the coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.650[a]	.423	.402	5.57866	1.922

Table 11

Simultaneous Regression of Technology Acceptance Factors on Technology Anxiety

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95,0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	68.162	4.593		14.839	.000	59.060	77.264
	Perceived Usefulness	-.527	.294	-.193	-1.789	.076	-1.110	.057
	Perceived Ease of Use	-.702	.201	-.324	-3.498	.001	-1.100	-.304
	Attitude	-.654	.320	-.259	-2.041	.044	-1.289	-.019
	Behavioral Intention to Use	.040	.315	.015	.127	.899	-.584	.664

To examine if major plays any significant role in the relationship between Technology Acceptance and Technology Anxiety, the Hierarchical Regression was run. Thus, in phase one, Technology Acceptance factors and in phase two, Major as a moderating variable were entered the equation. Based on the results in Table 12, this model of regression in both phase one (F = 20.32, P-Value of F<0.01) and phase two (F = 16.13, P-Value of F<0.01) was valid enough at the error level of 0.01.

Table 12

Analysis of variance or ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2529.306	4	632.327	20.318	.000[b]
	Residual	3454.487	111	31.122		
	Total	5983.793	115			
2	Regression	2531.545	5	506.309	16.133	.000[c]
	Residual	3452.248	110	31.384		
	Total	5983.793	115			

In Model Summary Table 13, R Square lists all Two blocks of regression models. R Square for model 1 is equal to 0.423 and the number for Model 2, is equal to 0.423. The size of the difference in fact does not change the regression model 2 to 1.

Table 13

R square or the coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.650[a]	.423	.402	5.57866	
2	.650[b]	.423	.397	5.60215	1.927

Then to recognize whether the Major played any significant role in the relationship between Technology Acceptance factors and Technology Anxiety or not, Statistical Changes of both phases were compared. Based on the results in Tables 13 and 14 regarding (ΔR^2=0.423) ΔR, (ΔF=20.32) ΔF, and its P-value (P-value of ΔF<0.01) in phase one; also, (ΔR^2=0.423) ΔR, (ΔF=16.13) ΔF, and its P-value (P-value of ΔF>0.05) in phase two, it can be concluded the entrance of major variable didn't have any meaningful increase in R^2. In other words, the academic degree variable didn't play any moderating role in the relationship between Technology Acceptance factors and Technology Anxiety.

Table 14

Hierarchical Regression of Technology Acceptance Factors and Academic Major on Technology Anxiety

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	68.162	4.593		14.839	.000	59.060	77.264
	Perceived Usefulness	-.527	.294	-.193	-1.789	.076	-1.110	.057
	Perceived Ease of Use	-.702	.201	-.324	-3.498	.001	-1.100	-.304
	Attitude	-.654	.320	-.259	-2.041	.044	-1.289	-.019
	Behavioral Intention to Use	.040	.315	.015	.127	.899	-.584	.664
2	(Constant)	68.666	4.984		13.778	.000	58.790	78.543
	Perceived Usefulness	-.541	.301	-.198	-1.800	.075	-1.137	.054
	Perceived Ease of Use	-.702	.202	-.324	-3.484	.001	-1.102	-.303
	Attitude	-.653	.322	-.258	-2.029	.045	-1.291	-.015
	Behavioral Intention to Use	.046	.317	.017	.146	.884	-.582	.675
	Major	-.174	.653	-.020	-.267	.790	-1.468	1.119

Discussion

This study investigated the relationship between technology acceptance and technology anxiety among English language learners in the EFL context of Iran. After analyzing the data, the results demonstrated a significant negative correlation between technology acceptance, perceived usefulness, perceived ease of use, behavioral intention to use, attitude, and technology anxiety. An increase in technology acceptance and its components led to a decrease in technology anxiety, and perceived ease of use was the strongest component of technology acceptance to predict technology anxiety. Moreover, the first feature of technology acceptance was perceived ease of use, and the last feature was the behavioral intention to use it. Moreover, the participants' academic major was not a meaningful mediator affecting the relationship between technology acceptance and technology anxiety.

In line with the findings, Yogesh et al. (2011) indicated that anxiety was evaluated as an external variable of the unified theory of acceptance and use of technology. Our findings confirmed Guo et al.'s (2013) study that technology anxiety effects negatively perceived ease of use and perceived usefulness. Another study, which was done in a digital library context and is in line with our results is Oded and Ye 's (2009) study which indicated that users' computer anxiety and their perception of ease of use are negatively related. In the same way, Deborah, and Christopher (1995) reported that the sense of anxiety emerging from using computer-based systems is related negatively to attitude and behavior toward using technological devices or systems.

Teo (2008) mentioned that attitudes toward computers do play an influential role in determining the extent to which students accept the computer as a learning tool. Negative correlations with computer anxiety were also reported by Korobili, et al. (2010) when they conducted a study on students' computer use and their attitudes. Based on the literature review, having thoughts and intentions to learn and adapt more frequently to computer usage minimizes negative reactions, especially when experiencing computer anxiety (Chua, et al., 1999). Bozionelos (2001) stated that computer anxiety did cause decreased levels of psychological well-being in individuals. Both Wilfong (2006) and Roslani (2007) reported that self-efficacy was a strong predictor of computer anxiety. Technology acceptance models explain the determinants of computer acceptance among user populations (Abdullah & Ward, 2016; Chan, 2013; Kemp et al., 2019; Teran-Guerrero, 2019), and the results of the current study following technology acceptance model confirmed the

relationship that exists between perceived usefulness, perceived ease of use, behavioral intention to use, attitude, and technology anxiety.

Conclusion

With the rapid change in information technology in educational settings, teachers and students will have to continuously learn to adapt to computer environments. The existence of computer anxiety among students at universities should trigger the system to be alert and pay attention before this phenomenon becomes uncontrollable. The findings of the current study indicate the negative correlation that exists between technology acceptance and technology anxiety in English language classrooms. Besides providing computer applications to students, the system needs to reinforce computer acceptance to boost the attitude toward computers and coping with computer anxiety.

Hsu, Wang & Chiu (2009) suggested that learning continuously new software applications could eliminate anxiety among computer users. While Pan & Tang (2004) as cited by (Parayitam, Desai, Desai, & Eason (2010) suggested a method of having application-oriented teaching learning to over computer anxiety. Therefore, educational settings should have a good relationship with local academic institutions in the sense of having a mutual understanding to provide a technostress-free environment among the learners by having proper computer anxiety management. In this extremely competitive and fast-moving global competition, teachers and students are expected to be as technology-savvy as other technology users in other contexts. Thus, teachers and students having skills and knowledge when performing various computer applications would subsequently improve daily practices toward having quality education. The technology acceptance model defines the adaptation of individuals toward a system or technology; on the contrary, anxiety is an obstacle to the hampered to adapt or use a system or technology. As soon as individuals use computers, smartphones, or new systems or technologies, many of them suffer from anxiety. So, anxiety can be examined as a negative antecedent of the technology acceptance model.

Effective use of technology inside and outside the classroom requires proper integration to make it more productive and foster educational development which also entails proper utilization of information resources and the technology that promotes its usage. Understanding technology acceptance and technology anxiety will lead to better prediction of the use of new information resources. Technology acceptance in the EFL context of Iran can lead to increased personal control, flexibility, and competent use of information, and can control the users' anxiety. Therefore, increased knowledge can lead to better productivity. Wilfong (2006) suggested a

method called "computer-based therapy" to overcome negative emotions among adults. There are many avenues for teachers and students who feel they are restless or have mood swings when interacting with computers. For example, many universities offer technology-oriented courses in their curriculum, therefore, it will be beneficial for educational systems if some training on how to overcome computer anxiety is offered to these individuals via their authorized personnel.

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