

Understanding Technology Use Intentions Among Generation Z English Language Learners: A Correlational Study

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Abstract: Using technology in foreign language learning can provide a variety of possibilities, significant opportunities, and significant benefits. Considering that Generation Z is a generation born into technology and grew up with it, it is critical to understand the intentions of Generation Z students to use technology in learning English and to find out what variables might affect these intentions. For these reasons, in this article, a correlational research design was used to understand the technology use intentions of schools of foreign languages' preparatory class students while English learning and to investigate whether variables such as technology use anxiety, technology access, attitudes towards technology use and digital literacy level are a predictor of these intentions. The participant group consists of 310 preparatory class students at the Foreign Languages School of Çanakkale Onsekiz Mart University. According to the study's results, it has been revealed that students' attitudes towards technology use are upbeat and high, their anxiety is low, their digital literacy levels are high, and their technology access is high. It is understood that digital literacy and the attitude of using technology in English language learning are positive predictors of technology use intentions. It is also understood that technology anxiety is a negative predictor. In addition, weekly laptop/desktop PC usage time while learning a language is also a positive predictor of technology use intentions.

Anahtar Sözcükler:

İngiliz dili öğrenimi
Teknoloji kullanım niyeti
Dijital okuryazarlık
Teknolojiye erişilebilirlik
Teknoloji tutumu

Z Kuşağı İngilizce Öğrenenlerinde Teknoloji Kullanım Niyetlerinin Anlaşılması: Bir Korelasyon Çalışması

Özet: Yabancı dil öğreniminde teknolojinin kullanımı çeşitli olanaklar, önemli fırsatlar ve önemli faydalar sağlayabilir. Z kuşağının teknoloji içinde doğan ve teknolojiyle büyüyen bir kuşak olduğu düşünüldüğünde, z kuşağı öğrencilerinin İngilizce öğrenmede teknoloji kullanım niyetlerini anlamaya çalışmak ve bu niyetleri hangi değişkenlerin etkileyebileceğini bulmak kritik öneme sahiptir. Bu nedenlerle, bu makalede, yabancı diller yüksekokulu hazırlık sınıfı öğrencilerinin İngilizce öğrenirken teknoloji kullanım niyetlerinin ne olduğunu anlamak ve teknoloji kullanım kaygısı, teknolojiye erişim, teknoloji kullanımına yönelik tutumlar ve dijital okuryazarlık düzeyi gibi değişkenlerin bu niyetlerin bir yordayıcısı olup olmadığını araştırmak amacıyla ilişkisel bir araştırma deseni kullanılmıştır. Katılımcı grubu, Çanakkale Onsekiz Mart Üniversitesi Yabancı Diller Yüksekokulu'nda öğrenim gören 310 hazırlık sınıfı öğrencisinden oluşmaktadır. Çalışmanın sonuçlarına göre, öğrencilerin teknoloji kullanımına yönelik tutumlarının olumlu ve yüksek, kaygılarının düşük, dijital okuryazarlık düzeylerinin yüksek ve teknolojiye erişimlerinin yüksek olduğu ortaya çıkmıştır. Dijital okuryazarlığın ve İngilizce dil öğreniminde teknoloji kullanma tutumunun teknoloji kullanım niyetlerinin pozitif yordayıcıları olduğu anlaşılmıştır. Ayrıca teknoloji kaygısının da olumsuz bir yordayıcı olduğu anlaşılmaktadır. Ayrıca dil öğrenirken haftalık dizüstü/masaüstü bilgisayar kullanım süresi de teknoloji kullanım niyetinin pozitif bir yordayıcısıdır.

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1. Introduction

Technology's rapid evolution has profoundly affected educational practices, providing unanticipated opportunities to enrich teaching and learning (Comas-Quinn, 2011). The utilization of digital tools such as computers, mobile phones, and tablets has moved from luxury to necessity, perfecting how students obtain and share information and engage with it (Hubbard & Levy, 2006). This digital transformation, however, has made its most dramatic mark in the foreign language learning field, where technology has become a must-have tool for educators and learners (Yang, 2011).

Generation Z, the current cohort of students, has primarily grown up utilizing technology in various ways, letting it become a part of their lives virtually seamlessly, including language learning (Alzaidiyeen, 2017). This virtual knowledge of technology affords educators a unique chance and a challenge. Not surprisingly, technology significantly affects Generation Z in language learning. Therefore, it is of great importance to find out whether these factors are the key to successful learners using technology in language learning (Çam & Kırıyıcı, 2017). Recent studies have deepened the different aspects of technology integration in language learning like student's attitudes, perceptions, and the impact of digital literacy (Al Arif, 2019; Buzzetto-More, 2015; Kohnke, 2020; Tran, 2020; Wang & Hsu, 2020). Nevertheless, a gap needs to be filled via more investigation into the specific factors that predict Generation Z's intention to use technology in English language learning. The findings will give educators the knowledge they need to use technology effectively and to create learning experiences that grapple with the background of this generation.

The increased amount of information and its rapid spread have made it easier to access information, so the use of information technologies in foreign language teaching and learning has become inevitable, especially in the late twentieth century. Therefore, the effective use of technology, which brought a movement to the learning-teaching process, has gained importance. In recent years, this has led many countries to integrate technology into their curricula. Nowadays, students who grow up with technology often use it in their language-learning processes, too. Many language learning studies (Comas-Quinn, 2011; Hubbard & Levy, 2006; Yang, 2011) focus on the educational use of language practices and effective technology in language education. Many studies, such as that of Watson and Hempenstall (2008) and Kwon and Eun (2010), revealed that using technology in language learning is valuable and contributes to language use and communication. For this reason, many schools integrate various technologies into their curriculum and adopt blended or hybrid learning approaches that incorporate face-to-face instruction with digital activities and technology-mediated language-learning instruction (Comas-Quinn, 2011). The abovementioned facts underline that technology is used both in foreign language teaching and learning and that students' intensive use of technology in language learning outside the classroom implies the importance of digital literacy.

The 21st century has proclaimed digital literacy as a crucial topic (Cengiz & Kaçar, 2024; Sitepu et al., 2024), and it has grasped the educational and normative quality of the whole world due to being the citizenship training (Pérez-Escoda et al., 2019). Being digitally literate implies the skill of searching for, assessing, and using digital technologies and information sources (Meyers et al., 2013). Digital literacy is not restricted to the simple knowledge of using digital gadgets; it is the ability to solve problems and the willingness to learn and explore new technologies that are now crucial for an individual (Buchholz et al., 2020; Joseph & Khan, 2020). Digital literacy has grown from a narrow definition to combining technical

skills and cognitive and social-emotional aspects. This term includes thinking critically about digital content, seeing its context, and creating new content more effectively (Joseph & Khan, 2020; Martínez-Bravo et al., 2022). Moreover, it is regarded as a must-have quality for getting involved in education, work, communication, and other civic activities (Joseph & Khan, 2020). The fruitful edge one gets from digital literacy is the ability to use digital tools for creation, work, sharing, socialization, research, play, collaboration, communication, and learning (Meyers et al., 2013).

Digital literacy implies the capacity to strategically manage, interpret, and produce information through a hundred different digital technologies, thus requiring a higher-order cognitive engagement within digital tools and platforms (Joseph & Khan, 2020). This incurs the aptitude to obtain information by digitally tracking newsfeeds, managing, editing, creating green-screen clips, inserting a piece of media here and there, and adequately communicating through an appropriate tool or process (Koh et al., 2022). Those who possess digital literacy skills are better gainsayers for problems associated with technology, can fit in easier in a digital environment, and can thrive in digital communication without any trouble. Digital literacy has broadened and deepened, and it has been modeled in many different ways; each model of digital literacy portrays different aspects of the whole complexity and scope (Batanero et al., 2021; Joseph & Khan, 2020).

The development of digital literacy models has become a focal point in educational research, with the emergence of several frameworks to define and evaluate digital competence. Digital literacy has now become an essential skill that is widely recognized. Therefore, researchers and educators have devised different theoretical frameworks to break it down and evaluate its various aspects. These frameworks provide different perspectives through which we can read digital literacy, bringing various aspects and components to light. These models often aim to offer a structured approach that facilitates understanding and developing digital literacy, including technical, cognitive, and social aspects. DIGCOMP Project, Krumsvik model, TPACK model, JISC model, ISTE Standards, and P21 model are prominent models. Each model is known for the skills and competencies built by digital literacy and reflects various angles on the nature and scope of digital literacy (Pérez-Escoda et al., 2019). So, for instance, the DIGCOMP model emphasizes the different core aspects of digital competence: information and data literacy, communication and collaboration, digital content creation, safety, and problem-solving.” The TPACK model is a digital learning platform that integrates technology, pedagogy, and content knowledge, explaining why technological literacy is crucial and how technology can bring teaching and learning to a new level. The JISC model was formulated in the U.K. and explains the importance of digital capabilities for learning, teaching, and research, covering competencies like information literacy, digital creation, innovation, communication, collaboration, and digital identity management. These frameworks stress how individuals should acquire a wide array of skills and the capability to evaluate information critically, communicate effectively online, make digital content, and protect themselves from online risks.

Digital literacy involves the ability to live, learn, and work in a society where digital technologies such as social media, computers, and mobile devices are intensively used for communication and accessing information. The high level of digital literacy provides students with many skills and competencies regarding proper understanding and interpretation of the information presented through technology. Some are problem-solving, critical thinking, and good ICT skills (Knobel & Lankshear, 2014). Right here, it is crucial to understand whether

a relationship exists between students' digital literacy levels and technology use intentions. High levels of digital literacy are essential for students to be conscious, comfortable, critical, and good at analyzing and interpreting information correctly while using technology to learn foreign languages. However, when the relevant literature is examined, we see that studies on technology-based foreign language learning are mainly aimed at understanding students' attitudes and perceptions towards the use of technology or computer-assisted foreign language learning (Al Arif, 2019; Buzzetto-More, 2015; Kohnke, 2020; Tran, 2020; Wang & Hsu, 2020). Further, the studies investigating the importance of digital literacy in technology-based language learning or the relationship between digital literacy and technology use intentions appear to be limited. Considering the close connection of the Z generation with technology, despite its profound importance and potential, the intentions of the Z generation students to use technology in learning English can still be considered an unexplored area, especially in foreign language learning.

Generation Z, also called the Zoomers, is the generation following the Millennials and before Generation Alpha, usually born between the mid-1990s and the early 2010s. This generation is unique for their deep connection to technology since they were raised at a time when the internet was accessible everywhere, there were mobile devices, and all social media platforms were available (Benítez-Márquez et al., 2022). This moveable connectivity and technological advancements have directly influenced their social interactions, learning, and jobs (Ranieri et al., 2021). The characteristic that distinguishes Generation Z from the others is their authentic mode as "digital natives." They have lived their whole lives in a technological environment, which has given them an innate feeling and integrated technology into their daily lives without effort (Benítez-Márquez et al., 2022). Their technological experience, for example, goes beyond their learning styles, which differ from those of older generations, and brings out the new side of their learning characteristics that are potential use cases in higher education (Alruthaya et al., 2021). The transition was smooth because digital technologies became a routine part of Generation Z's lives, so their educational preferences have changed, and their day-to-day activities imply the redefinition of norms and expectations (Alruthaya et al., 2021; Seemiller & Grace, 2017). In addition, the widespread technology got them involved in digital technology, consequently boosting their ambition and self-confidence (Benítez-Márquez et al., 2022; Turner, 2015).

The intertwining of digital technology and information has made people use smartphones and computers and learn about social media, digital applications, and platforms (Yoesoef, 2020). In the 21st century, Generation Z has become the largest age group surfing the net, and through their virtual interactions, they have heavily influenced the development of reading culture and literary works in the virtual world (Yoesoef, 2020). Thus, they now influence how information is accessed, processed, or disseminated, including the educational, entertainment, commerce, and communication sectors. They are so put in technology that they are more relaxed and have an enlarged capability to use different media (Ranieri et al., 2021). Getting online, they instantly question online substance, whether they are listening to the right side or are those untruths, and they can make the digital world have no barriers. However, connectivity is a well-known factor in their lives, such as social relationships, education, work, friendships, and relationships (Alruthaya et al., 2021; Ranieri et al., 2021; Yoesoef, 2020).

The immersion in the digital world of Generation Z has also affected their cognitive development, mental skills, and learning styles, and it is important to be aware of their

emotional development and personality as a result of digital living (Ranieri et al., 2021). Their visual content preference and microlearning technology have made them more social, and their ability to work collectively with the achievement of certain tasks necessitates that educators and employers develop strategies that fit both the interactive nature and unshakeable enthusiasm of this one-of-a-kind group of people (Alruthaya et al., 2021; Ranieri et al., 2021; Yoesoef, 2020). At this point, it is of great importance to understand the technology use intentions of the Z generation, who were born into technology, in learning English, and to investigate the effect of the digital literacy skills of the Z generation, which is thought to have high digital literacy skills, on these intentions. In addition, it is essential to investigate the factors that predict the technology use intentions of Generation Z, as there is not enough data on the subject in the literature.

Today, mass media has changed with the development of technology; individuals have become more likely to use tools such as computers, tablets, and smartphones to acquire and disseminate information. The technology is also widely used today by people in foreign language teaching, learning, and other fields (Hett, 2012). Therefore, accessing, detecting, and making sense of texts transmitted through the screen is essential. The fact that especially the Z generation is closely intertwined with technology, spending much time with digital tools and using technological tools frequently in language learning processes has increased the importance of digital literacy more than ever, as the ones who use technology more does not mean that it is a good digital literate (Ilomäki et al., 2016). Researchers have conducted many studies on digital literacy in foreign language learning and teaching (Çam & Kiyici, 2017; Johnson & Tweedie, 2010; Lawrence, 2013; Li, 2014; Miller, 2007). However, most of these studies have targeted the views and perceptions of applying digital literacy through other digital tools, especially computers. The number of studies investigating the effect of digital literacy skills on technology use intentions is minimal. Studies have also revealed technology use and digital literacy's positive contributions to language learning, especially in interpretation, motivation, analysis, access, problem-solving, etc. (Caldwell, 2020; Golonka et al., 2014; Tsai, 2015; Tran, 2020). Considering the effects of technology use on language learning, the field of foreign language learning must investigate the impact of digital literacy and other variables, such as accessibility, anxiety, and attitude, that may affect technology use intentions.

In this context, it is crucial to find out the attitudes of the students who are representatives of the Z generation towards technology-based language learning, their intentions regarding technology use, their technology access, and their anxiety level related to technology-mediated language learning. What is more, understanding whether these variables are concerned about their intentions to use technology and the relationship between their intention to use technology and their levels of digital literacy is an important issue that needs to be investigated, too. When the related literature is examined, it is seen that there are many studies about technology-based language teaching. However, the number of studies on the relationship between digital literacy skills and technology use intentions is very limited. Further, it is essential to investigate the factors that can predict the technology use intentions of Generation Z, as there is not enough data on the subject in the literature.

This study aims to investigate students' technology use intentions, students' digital literacy levels, the students' attitudes towards using technology in language learning, their anxiety about the use of technology, their accessibility to technology and to see whether there is a relationship between these variables and students' intentions to use technology in learning English. Additionally, it aimed to find out whether the students' digital literacy levels, their

attitudes toward using technology in language learning, their accessibility to technology, and their anxiety about the use of technology can predict the intentions of students to use technology in learning English. The research questions of the study are as follows:

1. Is there a relationship between students' intentions of technology use and digital literacy, anxiety about the use of technology, accessibility to technology, and attitudes towards technology-mediated language learning?
2. Can digital literacy, anxiety about the use of technology, accessibility to technology, and attitudes toward technology use for learning a foreign language predict students' intentions to use technology in learning English?

2. Methods

2.1. Research Design

The correlational research design, a quantitative research design, is a reliable exploration method into the relationships between two or more variables. It is an investigative process contoured in a manner that allows researchers to determine the strength and direction of the associations, which may be positive, negative, or negative to no extent, without manipulating any variable affected (Creswell & Creswell, 2018). It is crucial to remember that while correlational research can identify relationships, it does not establish causation. The key points of such studies are to provide information on the degree of relationship between the variables, which is the whole point of the correlation itself, and, secondly, to make predictions based on these relationships. While Pearson's r correlation coefficient is typically used for quantifying the strength and direction of the linear relationships between variables, the regression analysis model is often employed for prediction purposes (Field, 2018). These statistical tools allow the researchers to understand the complex relationships between the variables better and predict more accurately using the knowledge gained, which makes the correlational research method beneficial in various fields such as psychiatry, education, or social sciences.

This kind of quantitative approach, more particularly, a correlational research design, the type which was utilized in this study to examine the connections between students' intentions to use technology for English language learning - or lack of them - and several other key factors, such as digital literacy, anxiety levels, and accessibility to technology. By viewing these associations without inducing an arrangement for the variables, correlational research enables us to understand the broader view of the various factors influencing language learning. Nevertheless, more precisely, it presents a momentum for predicting how a change in one variable, for example, digital literacy, may move with a change in another, for instance, the student's intentions to employ the provided technology in their English studies.

2.2. Participants

A total of 400 students enrolled in the single-year preparatory program at the School of Foreign Languages constituted the research population. In this case, the sample group consisted of 310 preparatory class students. In order to make sure that the sample was representative, a simple random sampling method was used. In this regard, all 400 students were included, and 310 students were drawn from these students randomly so that each student got an equal chance of being included in the sample, reducing the chances of potential bias. A scale and questionnaire were applied to the 310 students to support the research questions while collecting the study's quantitative data. In this case, a large sample of 77.5% of the research

population was attained through volunteers' participation after a simple random sampling procedure. This is especially significant for statistical validity and reliability (Cochran, 1977); the scores resulting from participating students only indicated that the selected sample correctly mirrors the sampled population, thus enhancing the generalizability of the findings (Krejcie & Morgan, 1970). The resultant participation rate of 77.5% confirms the research's validity, supported by Bartlett et al. (2001). All students are English preparatory class students, use technology in English learning, and are members of the Z generation. Members of this generation were born after the second half of the 1990s and grew up in the 2000s. These are the years when the most profound changes, such as the web, smartphones, laptop computers, and technology access, became easier (Singh & Dangmei, 2016). Of the 310 participants, 27 (8.7%) were international students from different countries, 283 (91.3%) were Turkish citizens, 126 (40.6%) were male, and 182 (58.7%) were female. Two participants did not answer the question about gender in the measurement tool. The average age of the participants was 19.5.

2.3. Data Collection

Four scales and one questionnaire were used to seek answers to the research questions. All of the data collection tools used in the study were previously tested for validity and reliability.

2.3.1. *Digital literacy scale*

In this study, a digital literacy scale [adapted from Ng (2012) by Üstündağ et al. (2017)] was used to obtain quantitative data on students' digital literacy levels. This study used only ten of the 39 original items. The digital literacy scale contains items that determine the level of digital literacy, such as knowledge of digital technology applications and ability to use digital technologies, as well as perception, attitude, and behavior towards digital technology applications. The digital literacy skills scale was adapted using a 5-point Likert scale (1=strongly disagree to agree 5=strongly). Its authenticity is demonstrated by Cronbach's Alpha coefficient of 0.835. The result of the reliability analysis performed on the participant group of this research was 0.836. This result reveals that the measurement tool has a high level of reliability.

2.3.2. *English language learners' attitudes scale*

The scale was developed by Alzaidiyeen (2017) and consists of 30 items. This Likert-type measurement tool consists of the following options: 'Strongly Disagree,' 'Agree,' 'Undecided,' 'Agree,' and 'Strongly Agree.' In Alzaidiyeen's (2017) study, four educational technology experts evaluated the scale's face and content validity separately. The reliability of the attitude scale was confirmed as Cronbach's Alpha coefficient around 0.85. As a result of the reliability analysis performed on the participants of this study, the Cronbach's Alpha coefficient of the measurement tool was 0.952. The measuring instrument is highly reliable. Alzaidiyeen (2017) initially developed and conceptualized a measurement tool that assessed attitudes toward iPad use in language learning. The term "iPad" was replaced with "technology" across all items. This adjustment and the overall content validity of the instrument have been subjected to rigorous expert review. The general agreement from these reviews was that using the term "technology" within the items was most appropriate, confirming the instrument's validity for the scope of the current study.

2.3.3. *Information technology anxiety scale*

The Information Technology Anxiety Scale developed by Lopez-Bonilla and Lopez-Bonilla (2012) was used. The scale consists of 12 items. Items 5 and 7 are reversed. The scale items

were assessed on a 7-point Likert scale: Strongly disagree (1) to agree (7) strongly. On the scale, a low score means low anxiety and a high score means high anxiety. Lopez-Bonilla and Lopez-Bonilla (2012) examined the internal consistency analysis in the reliability analysis of the scale, and Cronbach's Alpha coefficient was 0.94. In this dissertation, Cronbach's Alpha coefficient was found to be 0.875 due to the measurement applied to the research participants. It can be concluded that the measuring instrument is highly reliable.

2.3.4. Accessibility of technology questionnaire

A technology accessibility questionnaire was used to assess students' technology access for English language learning. The questionnaire was designed based on the technology access questions of Kitmitto et al. (2018). The questionnaire is divided into two parts. In the first part, questions are asked about whether technological tools such as computers and smartphones belong to the person or are used in common with others. In the second part, they ask how often these technological tools are used while learning English. The first part is measured using questions with yes/no answers, and the second part uses questions with time-order answers.

2.3.5. Intention to use technology scale

This scale was developed based on Davis's technology acceptance model (TAM) (1989). Despite its popularity as a framework for explaining users' intent to use technology in education, studies have been conducted to extend and expand the model to increase its explanatory ability to address more complex educational relationships involving variables outside of TAM (Hermans, 2008). The measurement tool was developed by Teo et al. (2011). The scale was a 5-point Likert Scale with four factors: Perceived usefulness (PU) (three items), perceived ease of use (PEU) (three items), attitudes towards computer use (ATCU) (three items), and intention to use (ITU) (two items). The Cronbach's Alpha coefficients of the original measuring instrument were 0.940 for PU, 0.951 for PEU, 0.899 for ATCU, and 0.832 for ITU. In this study, the Attitudes Towards Computer Use (ATCU) factor was adapted to technology and used as Attitudes Towards Technology Use (ATTU) since the research did not include only computers. Expert opinion was sought for the content validity of this update and the entire measurement tool, and positive feedback was received from expert opinion. When the reliability results applied to the participants of this study were examined, the Cronbach's Alpha coefficient values were found as follows: 0.875 for PU, 0.807 for PEU, 0.829 for ATTU, 0.679 for ITU, and 0.899 for full scale. It has been concluded that the measurement tool is highly reliable.

2.4. Data Analysis

Quantitative data were analyzed using a quantitative data analysis program (IBM SPSS Statistics V21.0). The data set entered into the program underwent initial data screening procedures. No missing values or outliers were identified within the data set. Reverse item transformations were conducted for measurement instruments, and average scores were computed for each measurement tool. Descriptive statistics, including percentages and mean analyses, were employed for research questions requiring descriptive examination. Correlation analysis was conducted for research questions requiring relationship assessment, and linear regression analysis was performed for research questions demanding predictive exploration.

Regression analysis shows the direct connection between a variable and another one, and it is used more in correlational research designs. Although this method is robust in assessing the strength and direction of the relationship, some gaps concern the causal aspect. Regression analysis is a statistical technique that can determine the size of each predictor variable effect and, therefore, build the best predictive model (Cohen et al., 2003). In addition, through regression coefficients, we get to know the quantity of the relationships and the way they are (Field, 2018). However, it is crucial to stress that regression analysis is not the direct reason for causation. A relation that is remarkably statistically meaningful does not necessarily mean that the values of the predictor variable cause the outcome variable to change. This problem arises specifically regarding the nature of correlational studies in which the uncontrolled variables influence the observed relationships. That is why, for correlation, regression seems a good tool to predict the future, but as for concluding cause and effect, it may not suit (Shadish et al., 2002). For this reason, in correlational research, the regression analysis technique is most suitable for verifying one variable's positive relationship with others and making the best prediction to validate it rather than concluding cause and effect. The regression analysis assumptions were tested and met. To be precise, the line was tested experimentally using scatterplots, the independence of errors was tested using the residuals plot, the homoscedasticity was tested using the residuals plot, and the normality of errors was tested using the histogram of the residuals.

3. Findings

3.1. Students' Intentions of Technology Use

Table 3 presents the results of the analysis examining the relationship between the intention to use technology while learning the English language and the technology anxiety, digital literacy, attitude to use technology, and technology access levels of the School of Foreign Languages students, defined as Generation Z. Since the relationship analysis does not include causality, it cannot be said which variable is determinant.

Table 3.

Relationship between students' intentions of technology use and other variables

Control variable: Foreign student		Information Technology Anxiety	Digital Literacy	Using Technology for English Learning Attitude	Accessibility to Technology		
					Use a laptop or desktop	Use a tablet	Use a smartph one
Intentions of technology use	Correlation	-.317	.547	.522	.115	.032	.037
	Significance (2-tailed)	.000*	.000*	.000*	.043*	.576	.514
	df	307	307	307	307	307	307

*p< .05

This study examined the relationships between the technology use intentions of the participants, the technology anxiety, the digital literacy, and the attitude towards technology use and technology access (disaggregated into weekly English study time across various devices). Although the negative correlation was relatively small, the analysis showed a significant correlation between technology use intentions and technology anxiety ($r = -0.317$, $p < 0.05$), meaning that the greater the technology anxiety is, the more the technology use intentions. In the same vein, significant positive correlations were noticed between technology use intentions and digital literacy ($r = 0.547$, $p < 0.05$) as well as attitudes toward technology ($r = 0.522$, $p < 0.05$), indicating that higher levels of digital literacy and more positive attitudes towards technology are related to the greater intention to use technology.

Regarding technology access, measured by English weekly study time using specific devices, a big. However, no high correlation was found between technology use intentions and weekly English study time on a laptop/desktop PC ($r = 0.115$, $p < 0.05$), inferring that the increased laptop/desktop use for English study goes hand in hand with the heightened technology use intentions. On the other hand, there were no significant correlations between technology use intentions and weekly English study time on tablet PCs ($p > 0.05$) and smartphones ($p > 0.05$).

3.2. Examining the Predictors of Intentions to Use Technology

This section examines the predictors of the intention to use technology while learning the English language and the predictors of technology use anxiety, technology access, technology use attitude, and technology access.

3.2.1. Technology anxiety as a predictor of technology use in English language learning

The analysis results regarding the participants' technology use anxiety levels to predict their intention to use technology while learning English are presented in the table below.

Table 4.

Linear regression analysis results of technology anxiety predicting technology use intentions

Predictor	B	Standard Error	β	t	p	
Constant	4.719	.094		50.073	.000	R = .321 R ² = .103
Technology Anxiety	-.197	.033	-.321	-5.939	.000*	Adjusted R ² = .100 F = 35.268 P < 0.05

Table 4 reveals a simple correlation (R) of 0.321, indicating a low degree of correlation between technology anxiety and intention of technology use, with the R² value showing that technology anxiety explains 10.3% of the variation in intention; despite this low correlation, the ANOVA results demonstrate a significant regression model ($F = 35.268$, $p < 0.05$), confirming that technology anxiety significantly predicts intentions of technology use ($p < 0.05$), as represented by the regression equation: Intention of technology use = $4.7 + (-0.2 \times \text{Technology anxiety})$, meaning a one-unit increase in technology anxiety results in a 0.2 decrease in the intention to use technology.

3.2.2. The prediction level of digital literacy and learning English

The analysis results regarding the level of prediction of the participants' digital literacy levels regarding their intention to use technology while learning the English language are presented in the table below.

Table 5.

Linear regression analysis results of digital literacy predicting technology use intentions.

Predictor	B	Standard Error	β	t	p	
Constant	2.119	.179		11.810	.000	R = .555 R ² = .308
Digital Literacy	.571	.049	.555	11.708	.000*	Adjusted R ² = .306 F = 137.018 P < 0.05

Table 5 demonstrates a moderate positive correlation ($R = 0.555$) between digital literacy and the intention to use technology, with digital literacy explaining 30.8% (R^2) of the variance in intention. ANOVA results confirm a significant predictive relationship ($F = 137.018$, $p < 0.05$), supporting the regression equation: Intention of technology use = $2.1 + (0.57 \times \text{Digital literacy})$. This indicates that a one-unit increase in digital literacy is associated with a 0.57-unit increase in the intention to use technology, thereby establishing digital literacy as a significant predictor of technology use intention.

3.2.3. Attitude toward technology as a predictor of usage intention in English learning

The table below presents the analysis results regarding the participants' technology use attitude levels, which were used to predict their technology use intentions while learning English.

Table 6.

Linear regression analysis results of technology use attitudes predicting technology use intentions.

Predictor	B	Standard Error	β	t	p	
Constant	1.607	.234		6.874	.000	$R = .536$
Using Technology for English Learning Attitude	.610	.055	.536	11.149	.000*	$R^2 = .288$ Adjusted $R^2 = .285$ $F = 124.303$ $P < 0.05$

Table 6 reveals a moderate correlation ($R = 0.536$) between “using technology for English learning attitude” and “intention of technology use,” with the former explaining 28.8% of the variation in the latter ($R^2 = 0.288$). The ANOVA results confirm a significant predictive relationship ($F = 124.303$, $p < 0.05$), demonstrating that the regression model effectively fits the data. Specifically, “using technology for English learning attitude” significantly predicts intentions of technology use ($p < 0.05$), as represented by the regression equation: Intention of technology use = $1.6 + (0.61 \times \text{Using technology for English learning attitude})$, indicating that a one-unit increase in technology use attitude leads to a 0.61 unit increase in technology use intention.

3.2.4. Technology access as a predictor of learning intentions

The analysis results regarding the level of prediction of the participants' technology access levels and their intention to use technology while learning the English language are presented in the table below. The participants' technology access levels were measured by how many hours a week they could work in English with technology tools. Technology tools were examined in three groups: laptop/desktop PC, tablet PC, and smartphone.

Table 7.

Linear regression analysis results of laptop/desktop PC usage level predicting technology usage intentions

Predictor	B	Standard Error	β	t	p	
Constant	4.058	.072		56.038	.000	$R = .119$
Hours (in week) that use a laptop or desktop computer for doing schoolwork	.052	.025	.119	2.106	.036	$R^2 = .014$ Adjusted $R^2 = .011$ $F = 4.436$ $P < 0.05$

Table 7 reveals a weak positive correlation ($R = 0.119$, $R^2 = 0.014$) between weekly laptop/desktop usage for schoolwork and intentions of technology use, with only 1.4% of the variance in intention explained by hours spent. Despite this low correlation, the regression model significantly predicts technology use intention ($F = 4.436$, $p < 0.05$), as evidenced by the equation: $\text{Intention} = 4.1 + (0.05 \times \text{Hours})$. This indicates that each additional hour spent using a laptop/desktop for schoolwork is associated with a 0.05 unit increase in technology use intention, although the overall effect is minimal.

Table 8.

Linear regression analysis results of tablet PC usage level predicting technology usage intentions

Predictor	B	Standard Error	β	t	p	
Constant	4.187	.040		104.149	.000	$R = .017$ $R^2 = .000$
Hours (in a week) that use a tablet computer for doing schoolwork	.007	.024	.017	.291	.772	Adjusted $R^2 = -.003$ $F = .084$ $P > 0.05$ $P = 0.772$

According to the ANOVA result, the regression equation does not fit the data. The regression model does not predict the dependent variable significantly ($F = 0.084$; $p > 0.05$). “Hours (in a week) that use a tablet PC for doing schoolwork” does not predict intentions of technology use.

Table 9.

Linear regression analysis results of smartphone usage level predicting technology usage intentions

Predictor	B	Standard Error	β	t	p	
Constant	4.131	.087		47.335	.000	$R = .044$ $R^2 = .002$
Hours (in a week) that use a smartphone for doing schoolwork	.019	.025	.044	.775	.439	Adjusted $R^2 = -.001$ $F = 0.600$ $P > 0.05$ $P = 0.439$

According to the ANOVA result, the regression equation does not fit the data, and the regression model does not predict the dependent variable significantly ($F = 0.600$; $p > 0.05$). “Hours (in a week) that use a smartphone for schoolwork” does not predict intentions of technology use.

4. Discussion

The negative association between intentions to use technology as well as technology anxiety is consistent with prior studies that aim to examine the effect of anxiety on the use of technology by students (Rafique et al., 2023). Technology-caused anxiety that students show is caused by unfamiliarity with the new tools, fear of failure, and uncertainty regarding online safety. Therefore, it cannot be refuted that students’ perceptions of anxiety primarily arising from their relationship with technology may affect how much they are engaged with the new technological tools published (Hrastinski et al., 2021). However, the positive correlation between digital literacy and technology intentions is unequivocal, as established by Bawane and Pachpande (2021). This confirms that literacy in new technologies equips students with the appropriate attitudes and skills for traversing the ever-growing digital matrix. Consequently, students are willing to use and integrate new technologies in their studies. For this reason, students with positive perceptions about technology tend to develop the right

attitude towards the latter and actively participate in its use. When college students agree that technology is beneficial in promoting their learning, they respond positively by using every opportunity to create an engaging learning environment where technology can enrich how they deliver new knowledge (Akram et al., 2022). Evidence of a significant but weak correlation between intentions to use technology and the amount of time spent studying English on laptops or desktops suggests that, for language learning, this platform appears to be favored (An et al., 2021). Perhaps laptops and desktops support tasks generally associated with writing, research, or interaction with e-learning platforms, as concluded in the study (Yang et al., 2022). The insignificant correlation established with tablets and smartphones similarly indicates that these devices have been perceived as supplementary tools for language learning or informal practice instead of primary platforms for studying the language, with particular emphasis on the study done by Sung et al. (2016). Since the respondents' experiences indicate that they mainly use tablets and cell phones for supplementary purposes, research should be conducted to determine the students' perceptions and specific applications in language learning. The use of these devices should be enhanced to the total capacity they can deliver as learners and teachers live in a world where technology seems to form an integral part of their daily lives; people cannot help but use technology in their learning.

Based upon the findings obtained during this research endeavor, it has been thus identified that technology anxiety can be perceived as a pretty important predictor affecting the intention of users to use technology; in a case when the users have a high level of anxiety associated with the use of technology, the development of their intention to engage in the use of said technology will be reversed. These conclusions are similar to previous studies that examined technology anxiety as a specific obstacle to adopting and using technology, such as those of Cengiz and Kaçar (2024) and Park (2009). It is worth mentioning that the findings suggest that the relationship between technology anxiety and intention to use technology is also mediated by perceived usefulness and perceived ease of use. Hence, the impact of technology brings about an understanding and a perception of technology as helpful and easy to use. Therefore, when an individual suffers from technology anxiety, their ability and willingness to see technology as beneficial and easy is reduced; hence, their intention to use technology, in this case, is also diminished. This research provides significant evidence regarding the necessity of providing adequate interventions to reduce technology anxiety among users if we wish to ensure that the technologies in question are indeed utilized and adopted.

The study's findings reveal a positive predictive relationship between digital literacy and the intention to use technology among Generation Z English language learners. This aligns with existing research emphasizing the role of digital literacy in shaping individuals' technology use intentions. For instance, higher levels of digital literacy positively influence pre-service teachers' intentions to integrate technology into their pedagogical practices (Liza & Andriyanti, 2020). Likewise, research by Karim et al. (2020) on university students revealed that digital literacy was a vital factor in determining their intention to use mobile learning technologies. Therefore, in language learning, Dewi et al. (2024) state that digital literacy is a positive and significant predictor of students' intention to use technology in learning a language. These were compelling findings that would underscore the growing importance of equipping learners with digital literacy to shape their attitude and intention in utilizing the potential of technology to meet their educational needs in an ever-changing world. Moreover, a recent study by Huang et al. (2020) suggests that the predictive power of digital literacy for learners' intentions to engage in online learning environments is even more significant due

to the pandemic. The consistency of these findings across different populations and learning contexts strengthens the argument for prioritizing digital literacy development and promoting effective technology integration in education. We must be cognizant of the fact that the structure of the current world is very much rooted in technological advancement and innovation, and this includes education.

This study's findings shed light on the crucial impact of users' attitudes toward technology use in determining Generation Z English students' intentions to apply technology for English language comprehension. The results find that affirmative attitudes toward the application of technology are solid predictors of using technology for language learning. These results echo earlier research that has spotlighted the importance of users' attitudes in adopting technology, and they determine the possibility of its usage. This is consistent with TAM, which establishes that the perceived utility and ease of use are the foundations of the user's attitude toward technology use, influencing their behavioral intention (Kim & Castelli, 2021). Concerning language learning, people with favorable attitudes toward technology are more apt to regard technology as an essential tool in improving their learning experience and thus have a greater willingness to use technology. Similar findings support this conclusion, finding positive correlations between user attitude toward technology and their actual technology usage rate in educational contexts (Alieto et al., 2024; Dabbagh & Kitsantas, 2012; Zhi & Wang, 2024). This investigation also adds to the existing knowledge by contributing to the fact that users' attitudes regarding the use of technology can play such an important predictive role in their intentions to use such technology in English learning among these situations of the current Generation Z cohort of students.

This study has revealed that there is a statistically significant but weak positive predictive relationship that exists between the amount of time one spends using laptops or desktop computers for school work and the intention of using technology within the language learning process by Generation Z English language learners which indicates that although there exists a relatively positive correlation, it cannot be concluded that the time spent on these devices makes it possible to use them frequently enough as the only requirement needed to guarantee the realization of successful and quality education. This finding is in line with the result of other studies that have looked into the relationship between the use of technology and the learning outcomes of learners; for instance, the research conducted by Limniou (2021) showed that the amount of time students spent using digital devices for learning did not find any statistically significant relationship with the academic achievement of students. With similar outcomes, a study by Lai et al. (2012) indicated that technology use within the learning context did not affect one's motivation to learn. These findings by Limniou (2021) and Lai et al. (2012) propose that only increasing the number of hours when students use technology for learning purposes and becoming targets would not foster significant improvements in either the learning outcomes of these students or their intrinsic motivation to learn as they still would enjoy it. Therefore, instead of merely pasting together various education gadgets and software or piling on endless hours of compulsory digital instruction, educators and policymakers alike need to be most attentive to the specifics of how technology can be utilized to embed the genuineness of experience and help students become more personally engaged, effective learners who can transfer their knowledge and skills across learning environments and contexts. Thus, there is a need for a fresh look at the entire e-learning process because such education implementation is not just about creating a set of informative pages that meet all requirements but also about creating an interaction that motivates students to learn within a digital environment. Consequently, well-structured and goal-oriented didactic e-learning materials, especially with consistent

tutor support, can help learners overcome these barriers and develop personal and cognitive competencies.

This study examined the prediction of smartphone and tablet PC usage levels on technology usage intentions among Generation Z English language learners. The regression analysis yielded results whereby the regression equations did not fit the data, thus indicating that the regression models did not predict the dependent variable's outcomes in a manner that would be considered statistically significant. In that regard, the tablet PC and smartphone usage levels among Generation Z English language learners do not predict their technology usage intentions, which is an important finding of this study. The findings of this study, however, echo those of earlier studies, which point to the fact that the levels of technology use are not a suitable indicator of the usage intentions of technology in the future (Fullan & Langworthy, 2014; Hess & Tremblay, 2024). For instance, the study done by Hess and Tremblay (2024) showed that even the presence of technology in the classroom does not predict whether or not students would want to utilize technology for a purpose in the future. Similarly, Wang et al. (2014) noted that the amount of time spent by students using technology outside school could not predict their intentions to use technology after their time in school. These findings suggest that other factors, such as perceived usefulness, ease of use, and social influences, may be more significant in predicting technology usage intentions than the mere level of technology use among learners (Davis, 1989; Venkatesh et al., 2012). In this regard, the researchers interested in making sense of the factors that influence technology usage intentions among today's learners should consider these variables seriously.

5. Conclusion

The relationship between anxiety towards technology, digital literacy, and the attitudes that one has towards technology generally have a significant impact on the use of technology by Generation Z students who are learning the English language. Understanding these interactions is paramount in shaping effective educational practices aimed at overcoming fears concerning technology, integrating technology into regular classes, and enabling students to be well-equipped with the necessary skills in using technology. This indicates that integrating technology into foreign language education is a complex, dynamic process influenced by numerous factors, thus requiring proper awareness and understanding of such factors for effective integration. Technology integration can be anxiety-provoking, frequently due to a lack of familiarity and fear of the unknown. This can make it difficult for learners to embrace technology. Conversely, technology diffusion creates confidence and capability in learners, which is an important learning process in today's classroom environments. Indeed, it is common knowledge that the learner's attitude towards technology, which develops due to perceived usefulness and ease of use, directly affects the intention to adopt and use technology. The more the learners see technology as valuable and easy to use, the more they are likely to use it actively in their learning processes.

This intricate interaction demands the application of a comprehensive plan for incorporating technology in teaching languages. Confronting apprehensions concerning technology by providing the required assistance and reinforcing appropriate support, enhancing digital literacy using specified training, as well as boosting affirmative perceptions of technology through the presentation of the extraordinary capabilities that technology can offer are key moves to perform in order to develop a suitable milieu for learning English or any other language through the use of technology. In the contemporary sphere of education, accessing or using technologies does not ensure they are effective when integrated into the pedagogical

processes. Hence, the discussion should go deeper and be concerned with what the implementation of the said technologies means in teaching and learning terms and the value of using the above technologies in teaching languages and developing literacy skills among learners.

In conclusion, integrating technology into language education is challenging because successfully implementing this approach requires a thorough understanding of the connections between the students' perceptions, technological skills, and pedagogical methods. Technology will make things a lot easier if we deal with learners' examination fears, determine the digital competence level of the learners, foster digital literacy, and create positive attitudes toward technology for both teachers and learners. The takeaways for you to draw from the given quotation include an overview of what anxieties are and thinking from a digital literacy standpoint, the positive effects of positive technology experiences, etc. The result is that Generation Z English language learners can be engaged and supported as they efficiently acquire the language.

There are certain limitations to the study. Firstly, the sample was restricted to preparatory class students at the School of Foreign Languages, which might limit the generalizability of findings to other language learning contexts. Secondly, this study drew on participants' self-reports. Therefore, there is always a risk of getting socially acceptable answers. Future studies might deal with those limitations, for instance, by increasing the sample size and employing various data-gathering methods like observation and interviews to develop a more prosperous and fuller picture of how technology use intentions among English language learners are affected by certain factors. Based on the findings, several suggestions for future research can be made. First, the relationship between technology use and learning outcomes should be explored through longitudinal studies investigating technology's impact on language proficiency, academic success, and motivation over time. Additionally, the influence of social factors (such as friends, teachers, and caregivers) on Generation Z EFL students' intentions to use technology in language learning should be analyzed, considering both direct and indirect effects. Expanding the research to include other groups of English language learners, such as adult learners, individuals from diverse cultural backgrounds, and those with disabilities, would help determine the broader applicability of the study's findings. Finally, future studies could investigate the potential of emerging technologies, such as virtual reality, augmented reality, and artificial intelligence, in enhancing English language learning by creating more interactive and engaging experiences.

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Ethical Issues

The authors confirm that ethical approval was obtained from Çanakkale Onsekiz Mart University with the decision number 09/38 (Approval Date: 28/04/2022).

Conflict of Interest

The authors declared no conflict of interest.

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