Leveraging Technological Tools to Overcome the Negative Effects of First Language Inputs in Expanding Fl Vocabulary and Speaking Skills

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Abstract

Foreign language learners often find learning a new language tedious because of the limitations of traditional learning methods. Unlike conventional methods, technological tools have provided a more engaging and interactive means of learning. FL learners have adopted technological tools to aid their learning process. This is also useful to them in expanding their vocabulary and improving their fluency. This study investigates the various technological tools that can be used in FL learning and their impact on learners' speaking skills. The research question was mainly on technological tools' impact on fluency and speaking skills. The data was obtained using an online survey form and designed using a Likert scale. Further analysis was carried out on the obtained data using descriptive statistics, which measured parameters like mean and standard deviation (SD). The participants were divided into two groups: tech enthusiasts and FL undergraduates. Over 63% of the participants agree that the use of technology improves speaking and fluency, with mean scores of 4.03 and 3.89, respectively. There is over 80% use of technology for FL learning by participants, this shows a high level of acceptance among participants. With this, technology has not only improved students' engagement in FL learning but also has helped them lessen the effects of L1 inputs on FL vocabulary and speaking skills.

Keywords: FL learners, standard deviation (SD).

Language is a means of communication through which we can share ideas, feelings, commands, and wants. A language is peculiar to a particular set of foreign language learners within an area. However, due to certain factors like migration, globalisation, and business activities, the need to learn a second language (L2) to communicate effectively arises within that setting. First language (L1), or mother tongue, influences non-native speakers of L2, which results in language interference or coding switching while speaking. Technology is pivotal in helping second language learners enhance their vocabulary and communicate effectively without pronouncing incorrectly. In today's society, foreign language learners have embraced technology-mediated learning to learn anything, including languages. This has drastically reduced the marginalisation of technology for language learning from being accessed in specific areas to being open to everyone (Zhonghao, 2017). Researchers have conducted various studies to determine the usefulness of these technological tools in second language acquisition (SLA). Still, they have

failed to study the impacts of overcoming the effects of first language (L1).

A foreign language refers to a language that is not the primary language spoken in a particular nation. Typically, foreign language learners study a foreign language either to enhance their communication skills or to be able to read and understand written material in that language. Indeed, it is also humane to acknowledge the role of mothers in facilitating the acquisition of a foreign language (Yang, 2023). Research on the relationship between a person's native and foreign language shows a linguistic connection in several aspects, including the sounds, sentence structure, meaning, and organisation of texts. Globalisation is causing a comprehensive revolution in every facet of our world. In the current context, those who possess a high proficiency in the English language can enjoy the advantages it offers, while those who do not are often excluded or disadvantaged. This dynamic and rapidly progressing era has seen the increasing significance of the English language in many aspects of life. The intentional and unconscious use of English terms in our daily conversations serves as proof of this reality (Deu, 2023). Language learning is very captivating, mainly whether it involves acquiring a new language or dealing with language interference, transfer, or cross-lingual influence, which are significant aspects. Language learning involves proficiently acquiring progressively accumulating structural elements and organising this information into coherent structures, resulting in competent communication in the desired language (Edele et al., 2023). Due to the continuous expansion of educational institutions, we benefit from the conveniences these establishments provide (Ahmed, 2023). However, it still needs to improve the pupils' proficiency or foster their acquisition of English as a language. Second language learners acquire the target language's structural components but need help organising this information into cohesive frameworks effectively. There is a notable disparity between the acquisition and categorisation of knowledge.

Learning a second language (L2) is a psychological process; different approaches help learners understand better and build their vocabulary. However, trial and error, bilingual, and translation methods are used for learning new languages, but they could be better because they impede fluency and can result in language interference (Delbio et al., 2018). According to Sultan (2023), the demand to learn foreign languages (FL) continues to rise due to the quest for world peace, globalisation, and seeking opportunities. Use artificial Teachers of FL, especially non-native speakers, use various technological tools and techniques such as artificial intelligence (AI) and natural language processing (NLP). Technological advancement in society has made it more convenient for learners to use technology-enabled language learning without getting bored, unlike the traditional learning method (Kaur et al., 2021). Mayers' cognitive theory of multimedia learning show that visuals and sounds rather than text alone effectively enhance vocabulary learning and retention (Ramezanali & Faez, 2019; Halil & Rrahman, 2021). learning Most L2 learners adopted the process of self-directed learning (SDL); this gives them a firm reliance on technology to facilitate their learning process and as a form of support. Students who are engaged in self-directed learning are optimistic about using technology to achieve their learning goals (Geng et al., 2019).

The primary objective of this paper is to address a crucial research gap by studying the profound impact of technological tools on overcoming the negative effects of the first language and expanding FL vocabulary and speaking skills. This study is of the utmost importance as it aims to fill a significant void in our understanding of language learning and technology.

Review of Literature

Researchers have explored the effectiveness of technology in enhancing FL and vocabulary learning. Concurrently, studies have been focused on the acceptance and improvement of these tools as a learning aid for FL for both teachers and learners who engage in SDL. This part of the study will be reviewing these literatures to set up a base for analysis and theoretical framework.

2.1. First Language Knowledge and Impacts on FL Vocabulary Learning

Researchers have debated on the impacts of L1 in FL learning and proficiency; some opine that the ability of a child to be able to learn and speak the mother aids in language and cognitive development. In contrast, some studies suggest L1 could negatively hinder FL proficiency and vocabulary development (Liando et al., 2023; Chen, 2022). During SLA, using L1 to help learners grasp the context of the FL is inevitable; this may result in either a positive or negative transfer of L1 thinking, vocabulary or information on the targeted FL (Zhang & Zou, 2022). Teachers are required to actively maximise the positive influence of L1 in SLA to mitigate its adverse effects (Chen, 2022; Deu, 2023). The degree of similarities and differences between two languages also impacts the outputs of learners while speaking, writing or expanding their vocabulary in SLA (Yang, 2023). To enhance the impact of L1 on FL, teachers must establish the relationship between L1 and FL to help learners identify the appropriate use of both languages during interaction.

Vocabulary proficiency is a crucial aspect of effective communication, playing a significant role in creating and understanding language (Littlewood & Yu, 2011). Language is defined as a combination of vocabulary and grammar and other elements such as context, strategy and prior knowledge, and pragmatics. Research conducted by Laufer in 1991 has shown that vocabulary is a reliable indicator of one's ability to succeed in reading. According to Aydin (2018), when the percentage of unfamiliar terms in documents is excessive, it hampers understanding. According to Chen (2022), those who mostly communicate verbally find it crucial to understand at least 95% of spoken language words to estimate the meaning from the context effectively. Mayberry (2007) theorised that a strong vocabulary is crucial for learners to successfully use their language skills to meet their requirements. The significance of vocabulary for language learners is undeniable (Chen, 2022; Aydin, 2022; Liando et al., 2023; Ahmed, 2023; Edele et al., 2023). Therefore, it is logical that the proficiency of communicating in a foreign language is contingent upon one's vocabulary. As the learner's proficiency in a foreign language grows, their existing vocabulary in both their native and second language might aid in acquiring new terms. The enhanced impact on vocabulary learning in a second language has been ascribed to "shared storage in long-term memory". The second language version is kept in the same mental image as the first language vocabulary counterpart or linked next to that representation, which allows for efficiency in time and effort during language learning (Deu, 2023; Kuimova et al., 2018).

Adult foreign language learners with a vast vocabulary have an advantage since they may easily store new words in memory with little effort in organising the conceptual aspect. Another benefit of using the existing "native vocabulary for linguistically related languages" is that it helps speed up the inclusion of specific words similar in form and meaning (known as cognates) into the lexicon. In recent times, scholars have reached a widespread consensus that the native language is the fundamental basis for developing a second language. This concept was made famous by Cummins's (1981) Linguistic Coding Differences Hypothesis. Cummins observed that multilingual primary school students acquire English proficiency at a level equivalent to their proficiency in their original language. The association "between the first and second languages has been shown in

several populations", including adults (Kurbanov, 2023; Yang, 2023).

Consequently, researchers in second language acquisition have examined many elements that contribute to learning one's native language, including "word memory, phonological memory, background information", and grammatical recognition. These findings have also been seen to apply to acquiring a second language (Littlewood & Yu, 2011; Edele et al., 2023). One's native language may help one learn vocabulary in a second language via many means. One way is via the perception of word shapes.

Therefore, acquiring a second language term would consist of renaming the word rather than creating new ideas. Overall, the use of native vocabulary in second language learning helps to bypass the need to form new concepts. Research indicates that having a solid vocabulary in one's first language positively impacts acquiring a second language. Kulimova et al. (2018) researched English reading comprehension in 135 fourth-grade kids who were bilingual in Spanish and English. They discovered that the children who had a greater understanding of Spanish vocabulary were able to read English at a quicker pace. In a study conducted by Sparks et al. (1997), it was found that the vocabulary of intermediate high school students in foreign language study, as measured by the Peabody Picture Vocabulary Test (Liando et al., 2023; Deu, 2023; Chen, 2022), was a more accurate predictor of overall proficiency than the Modern Language Aptitude Test (Aydin, 2018). Mayberry (2007) discovered that after accounting for nonword repetition ability, which is a measure of phonological memory, learning foreign language words was linked to the amount of the native language vocabulary. Therefore, it is evident that the vocabulary of one's native language plays a part in learning a foreign language. However, its specific impact on the acquisition of foreign language vocabulary has yet to be determined. For instance, the vocabulary of one's original language may not have as significant of a positive impact when the two languages are very different from each other linguistically (Zhang & Zou, 2022; Yang, 2023; Sparks et al., 1993).

2.2. Technological Innovations in Enhancing FL Learning

Different technological models have been developed to assist in SLA; this is very useful, especially for learners who engage in SDL. It provides a platform for FL learners to be able to practice and test their abilities in the language as well as connect with other FL learners. Technology is crucial to the FL learning and teaching process; it increases efficiency and productivity (Aslan, 2017; Birinci, 2019). Studies have been done extensively to characterise the importance of these tools in FL learning and how they can be used efficiently. This section summarises the importance of these innovations.

2.1.1. CALL

Computer-Assisted Language Learning (CALL) dates back to the 1950s and is a critical player in SLA (Halil & Rrahman, 2021). However, CALL provides a system that supports SDL, thus enhancing autonomy for language learners. Over the years, CALL has experienced rapid development and technological advancement, integrating hypermedia annotations to build vocabulary and speaking competence. The first stage of CALL development is the behavioristic CALL, the second is the communicative CALL, and the third is the integrated CALL. Each of these stages was developed to improve the limitations of the previous stages, making it more efficient (Halil & Rrahman, 2021). CALL provides learners and teachers with an operational tool for FL learning; the CALL technology is the bedrock on which other innovations for FL learning were built. Tools like podcasts, role-playing games, wikis, and blogs strengthen learners' ability to use FL.

2.2.2. ICT

According to UNESCO, Information Communication Technology (ICT) is defined as

a range of technological tools and resources that aids in transmitting, storing, creating, sharing or exchanging information. Such tools include the Internet, live broadcasting technologies, telephony, etc. ICT provides learning flexibility, which can be synchronous and asynchronous types of learning (Asep, 2020). ICT technology fosters collaboration and interaction and enhances student engagement in learning. Asep (2020), in his study, suggested that ICT is pivotal in improving learners' speaking skills because it provides a supportive environment for practising speaking and vocabulary expansion. Vocabulary and speaking were considered the two major areas where students needed the most support for improvement (Mustafa et al., 2020). ICT tools include smartphones, laptops, the Internet, web 2.0, language learning platforms such as Duolingo, educational websites and digital languages. These tools provide resources for learning and interaction.

2.2.3. CMC

Computer-Mediated Communication (CMC) is becoming increasingly popular in learning, especially with the COVID-19 pandemic. The language sector is included in this revolution, and CMC is an important tool, especially for applied linguistics. The characteristics of CMC technology tackle some of the challenges faced in technology-enabled learning. These characteristics address individual differences, social cultures, time and space. Therefore, learners can choose their preference of learning, to suit their abilities, get real-time feedback, and test their knowledge in using that language (Liping et al., 2022). CMC tools give users adequate exposure to the targeted FL, enabling them to practice effectively and share their ideas with others. CMC tools can be synchronous – learning and providing real-time feedback – such as email, WeChat, WhatsApp, skype, etc. It can also be asynchronous, such as wikis, bulletin boards, blogs, etc.

2.3. Theoretical Framework

To be able to characterize the reliance on technological tools to be able to overcome the negative effects of L1 inputs on FL learning, a theoretical model is needed as a bias for analysis. For the purpose of this study, the Unified Theory of Acceptance and Use of Technology (UTAUT) is used. This theory integrates other theories to study the acceptance of use of technology which is determined on the basis of the users' expectations. The UTAUT model was proposed by Venkatesh, Morris, and Davis in 2003. The figure below shows the UTAUT model as cited by Marikyan et al., (2023).

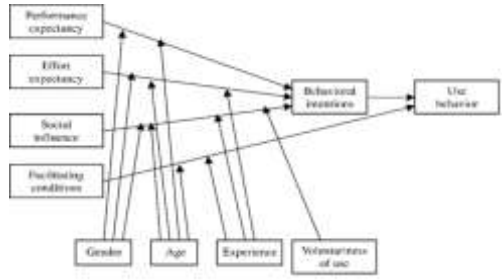

Figure 1: The UTAUT Model (Marikyan, and Papagiannidis, 2023).

Li-Yuan (2022) in his study explored the four determinants of UTAUT model in studying the EFL learners' behaviour, psychological needs, and acceptance in the using the Language Massive Open Online Courses (LMOOCs). The study reveals that motivation was a significant factor in the use of LMOOC, other factors include facilitating conditions, effort expectancy, behavioural intentions and social influence were also contributing factors. Gan (2021), analysed the mental factors of mobile foreign language learning using UTAUT model. The results showed that learners engaged in mobile FL learning due to perception of fun, social influences and expected efforts. Most learners' acceptance towards the use of technology can be categorized under the four determinants of the UTAUT models. This behavioural intention is mostly prevalent among SDL and it can be influenced by age, gender, experience etc.

2.4. Gap in Literature

Significant works have been carried out in identifying the importance of technological tools in FL learning and vocabulary development. However, studies haven't been done to understand the effectiveness of these tools in helping learners overcome the negative effects of L1 inputs in FL. This includes using technological tools to improve pronunciation, fluency and vocabulary of the targeted FL words. The number of times and ease with which learners use an FL word improves their fluency and minimizes L1 interference while speaking. This study fills the gap in research studying how these tools have helped language learners become more fluent and knowledgeable in using the FL.

Study Methodology

3.1. Study Approach

The quantitative research methodology was employed for the purpose of this research; this method enabled us collect and analyse large data sample from the population. The method facilitated the critical evaluation of the impacts of technological tools in overcoming the effects of L1 in FL learning. The survey method will be used to gather data for the quantitative analysis.

3.2. Study Questions

The following questions were developed as a basis to calculate the selected sample of the population being studied:

a. To what extent do participants accept the use of technology in FL learning?

b. How frequent do participants make use of technology in learning?

c. How does the use technology improve L1 effects on FL learning and fluency in speaking among participants?

3.3. Study Hypothesis

In this study, the following hypothesis were tested:

i. There is a correlation between the use of technology and improving speaking proficiency and fluency among FL undergraduates and tech enthusiasts.

ii. There is a correlation between incorporation of gaming features such as badges and leaderboard and increase engagement among FL undergraduates and tech enthusiasts.

iii. There is a correlation between speech recognition technology and instant feedback pronunciation and improvement in speaking accuracy among FL undergraduates and tech enthusiasts.

3.4. Study Participants

Reponses were obtained from 487 participants taken from population of foreign language undergraduates who have access to smart phones and laptops. The participants are classified into two groups which comprises of tech enthusiasts and FL undergraduates. The questionnaire shared is targeted at two groups of the population, to the technology enthusiasts and to the FL undergraduates. Hence, this questionnaire will help in providing information about their acceptance and use of technology for improving their vocabulary and FL fluency.

3.5. Study Sampling

Convenient Sampling method was considered best fit for the purpose of this research. This sampling method is a type of non-probability sampling method that gives you insights about the current trends, and behaviour of a population. For this study, an online survey form was sent across different social media platforms to respond to the questionnaire. Only 487 foreign language learners responded to the online survey form, 193 of the participants were tech enthusiasts, while 294 were FL undergraduates.

3.6. Tools and Administration

This research employed a survey method for data collection, involving the participants providing responses to the set of pre-designed questions in the questionnaire. The questionnaire was designed using online (Google Form) tool to collect data on both the demographic variables of the participants and to answer the research

questions. A 5-point Likert Scale format was used to structure the questionnaire.

3.7. Analysis Tools

The analysis of the acquired data involved the use of statistical tools. Descriptive statistics, including the calculation of means, standard deviations, standard errors, and t-values, were employed to analyze the acquired data. Additionally, data visualization tools were utilized to identify the distribution of demographic variables within the dataset.

Results and Discussions

4.1. Results

The results obtained are tabulated and summarized using descriptive statistics to provide an overview of the dataset. The demographic variables (such as age, gender and status) will be presented. However, this information will contribute significantly to the development of the discussions and will serve as a base for the conclusions drawn in this study.

4.1.1. Demographic Variable

The demographic variables collected in this study were gender variations and age variations. They are used to identify the influence of age and gender on the participants use of technology for FL learning.

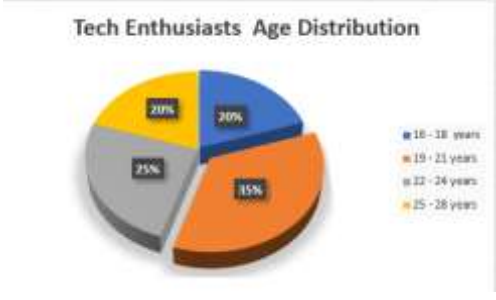

Figure 2: Age Variations for Tech Enthusiasts

From the data obtained from the participants who are tech enthusiasts, 35% of them are between 19 – 21 years old. However, foreign language learners within this age range actively make use of technology for FL learning.

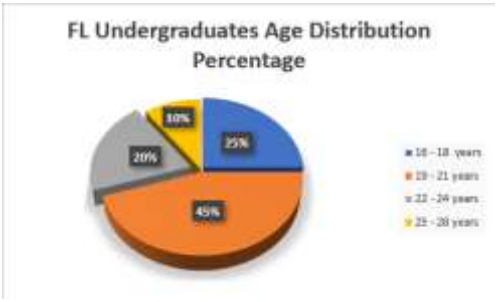

Figure 3: Age Variation for FL Undergraduates

Participants aged 19 – 21 years old also dominated in the use of technology for FL learning. This indicates that foreign language learners within this range believes that the use of technology makes FL learning easier.

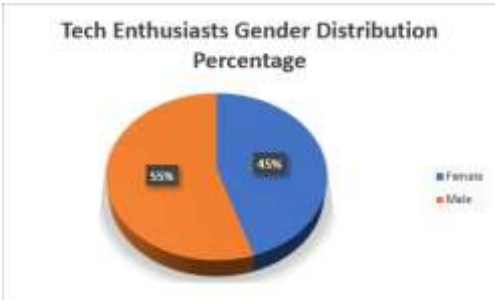

Figure 4: Gender Variation among Tech Enthusiasts

Among the tech enthusiasts, males dominated with about 55% in the use of technology for FL learning, while the females were about 45%.

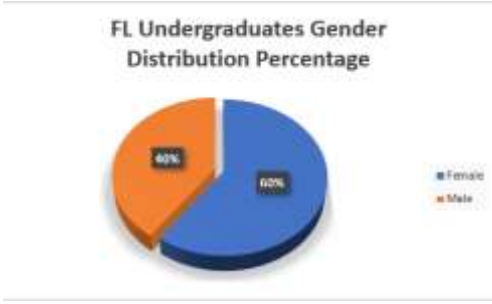

Figure 5: Gender Variations among FL Undergraduates

The data gotten from the FL undergraduates, females dominated in the use of technology with 60%, while the males had about 40%. This indicates that females make use of technology more in enhancing their learning process.

4.1.2. Descriptive Statistics

Statistical tools were used to further analyze the data collected, they are used to measure the mean, standard deviation, standard error and t-value of the datasets.

Table 1: Descriptive Statistics for Tech Enthusiasts (n=194)

Survey Questions	**SD (%)**	**D (%)**	**N (%)**	**A (%)**	**SA (%)**	**MEAN**	**SD**
Technological tools have aided in advancing my FL vocabulary repertoire	2.58%	5.15%	10.31%	46.39%	35.57%	4.18	0.92
I consistently use technological tools to mitigate the impacts of my first language in enhancing my FL vocabulary	0.52%	2.58%	10.31%	41.24%	45.36%	4.38	0.78
Using technological tools, including digital systems, have helped in reducing my dependency on the first language structure in acquiring FL vocabulary	2.06%	7.73%	25.77%	41.24%	23.20%	4.03	0.87

Highest Mean: 4.38, Lowest Mean: 4.03, SD: Strongly Disagree, D: Disagree, N: Neutral, A: Agree, SA: Strongly Agree, SD: Standard Deviation.

The data above shows that, about 46% of the students accepts the use of technology in FL learning. Also 45% of the students makes use of technology in learning FL, and about 41% believes that the use of technology impacts FL learning. Overall, this data shows that tech enthusiasts agrees that the use of technology is useful in FL learning. The findings in the table clearly showed that the use of technological tools directly enhances the development of foreign language vocabulary and expansion of the FL vocabulary repertoire. Technological tools have remained significantly effective in improving foreign language learning skills, especially in expanding the vocabulary skills.

Table 2: Descriptive Statistics for FL Undergraduates (n=294)

Survey Questions	**SD (%)**	**D (%)**	**N (%)**	**A (%)**	**SA (%)**	**MEAN**	**SD**
One process to fully utilize and gain from the advances in technological tools in reducing the negative impacts of L1 interference in L vocabulary is by accepting the usage of the tools	**3.40%**	**6.80%**	**13.61%**	**47.62%**	**28.57%**	**3.92**	**1.04**
Due to consistent use of digital tools to enhance my foreign language vocabulary, depending on the first language becomes almost impossible as a result of the consciousness.	**1.70%**	**5.10%**	**17.01%**	**40.82%**	**35.37%**	**4.15**	**0.87**
Technological tools have transformed by foreign language vocabulary repertoire.	**3.40%**	**10.20%**	**23.81%**	**37.41%**	**25.17%**	**3.89**	**0.93**

The data above shows the descriptive analysis table for the response of FL undergraduate students in the impacts and use of technology in FL learning. 47% of the students accepts the use of technology in FL learning. Also, a significant number of them frequently use technology in FL learning. Generally, they presume that technology has a great impact in improving their fluency and speaking skills.

4.2. Discussions

Technology has helped learners overcome the effects of L1 inputs in FL speaking and learning among FL learners and Tech enthusiasts. This study carefully investigates how the participants perceive the use of technological tools in facilitating their learning process. Section 4.1 of this study analyzes the data gathered from the online survey, from which the analysis provides us with critical insights into the participant's perceptions. The data was presented in four figures and two tables. These visualizations provided insights into the demographic variables and the parameters used to measure participants' responses.

Overall, 79% of the participants accept the use of technology in FL learning; they believe that it will help improve their fluency and speaking skills. They affirm the frequent use of technology in enhancing their learning process. However, 63% of the participants agreed that it has significantly improved their FL learning. These findings are similar to the results presented by Zhang and Zou (2022), Liando et al. (2023) and Ahmed (2023). These studies unveiled how technological tools can assist in limiting the negative impacts of learners' first languages in various aspects of their foreign language learning. Specifically, Ahmed (2023) stated that integrating technological features in foreign language education has enhanced vocabulary development and helped learners avoid depending on their first language knowledge in enhancing their FL vocabulary repertoire.

The gender variable reveals that males and females actively use technology for FL learning; the male participants are 54% while the females are 46%. This finding indicates that the gap in technology use between males and females is diminishing. This contradicts the popular opinion that females shy away from technology. From the analysis, the age variable shows that the age range 19 – 21 years is actively involved in using technology for FL learning. The data suggests that among young adults, technology is a viable tool for improving their learning process.

Generally, the response shows that learners use technology to increase their efficiency and productivity in FL learners. The use of technology is not just unique to tech enthusiasts alone; it is predominant among all FL learners, especially young adults. This agrees with the studies carried out by Asep (2020) and Liping (2022). It provides learning convenience, boosts engagement, gives real-time feedback and allows self-paced learning, allowing room for more engagement among young adults.

The implication of this study is that FL teachers and native speakers should work closely with technology developers to create digital tools that allow instant feedback and real-time responses. This will be useful in allowing FL learners to improve their pronunciation and expand their vocabulary.

Conclusion

Technological tools have played a pivotal role in helping participants overcome the effects of L1 inputs on FL speaking and vocabulary development. This paper critically studies how these tools have improved learners' abilities in speaking and fluency. Also, it examines learners' attitudes towards the acceptance and use of this tool for L2 learning. The UTAT model was used as a theoretical model for analyzing their behaviour. In this study, we surveyed 487 participants, of which 193 were tech enthusiasts, and 294 were FL undergraduates. The study's objectives aided in designing the questionnaire, allowing us to obtain the desired information.

The data collected and evaluated reveals that the participants have a positive attitude towards using these tools for FL learning. The significant findings from this paper will motivate students who wish to learn FL and those who seek to improve their speaking and vocabulary in FL. Over 63% of the participants agree that technology enhances speaking and fluency, with mean scores of 4.03 and 3.89, respectively. There is over 80% use of technology for FL learning by participants, this shows a high level of acceptance among participants. With this, technology has not only improved students' engagement in FL learning but also has helped them lessen the effects of L1 inputs on FL vocabulary and speaking skills.

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