

Students’ perceptions and effects of technology integration in English learning: A case study at National University of Battambang

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Article Info	Abstract
<p><i>Article History:</i> Received: November 22, 2024 Revised: May 5, 2025 Accepted: May 28, 2025</p> <hr/> <p>DOI: 10.20885/jee.v11i1.37268</p>	<p>This study investigates the perceptions and effects of first-year students at the National University of Battambang (NUBB) regarding the use of technology in English language instruction. Purposive sampling and a structured questionnaire were used to collect data from 205 students in various majors. The analysis employed descriptive statistics, independent sample <i>t</i>-tests, one-way ANOVA, and regression techniques. Findings revealed that online searching was the most commonly used tool (<i>M</i>=1.47), followed by computer software (<i>M</i>=1.53), while mobile applications were considered the most helpful (<i>M</i>=3.30). These results suggest a generally favorable view of technology's role in enhancing English proficiency. A T-test indicated a significant gender difference (<i>p</i> = 0.034 &lt; 0.05), with female students more likely to engage with technology at lower levels. Although most demographic factors did not show significant variation, age emerged as a factor, with older students reporting greater benefits from technology. Hypothesis testing confirmed a positive link between technology use and improved English learning, with the TSLE variable (H4) having an especially powerful impact (<math>\beta</math> = 0.063, <i>p</i> = 0.000). The study recommends providing specific support to female students in using technology and promoting diverse digital tools to further enhance language learning.</p> <p><b>Keywords:</b> Educational technology, English language learning, higher education, technology integration, technology roles</p>

## INTRODUCTION

Technology plays a crucial role in enhancing the learning of English as a Foreign Language (EFL) and has had a notable impact on the education sector. Its widespread presence in daily life highlights the importance of incorporating it into teaching environments. While some believe that the tangible nature of technology may not align well with the abstract processes involved in language instruction, both can in fact complement each other effectively. Integrating technology allows educators to adopt creative teaching methods that cater to diverse learning preferences. Although internet access and digital devices are common in Western classrooms, the real challenge is ensuring they are used meaningfully. Teachers and students alike need to see tools like computers, tablets, and iPads as important educational resources rather than merely sources of entertainment ([Rahman, 2015](#); [Ahmad, 2023](#)).

In the Cambodian context, technology is increasingly being used to support language learning by fostering learner-centered approaches and promoting student autonomy. Through digital tools and online materials, learners are able to tailor their learning experiences, moving away from traditional, teacher-dominated instruction. This method allows for self-paced learning, immediate feedback, and access to multimedia content, all of which enhance comprehension and memory retention. Moreover, it addresses issues like the lack of qualified teachers and resources in rural areas. With the help of mobile devices and internet connectivity, students can obtain useful educational content and interact with native speakers and peers, thereby improving their language skills. As emphasized by [Jewell \(2006\)](#) and [Kerimbayev et al. \(2023\)](#), this shift encourages greater learner independence and supports more engaging, student-centered teaching practices compared to conventional methods.

According to [Gibbs \(1994\)](#), technology involves much more than just computers. [Ammanni & Aparnanjani \(2016\)](#) note that it includes various tools and devices, such as laptops, LED/LCD screens, remote controls, webinars, video conferencing tools like Skype, voice calls, and mobile applications. Skype, however, has been discontinued as of May 2025. These technologies offer a wide range of resources and support for English language learning, encouraging learners to engage with them actively ([Bull & Ma, 2001](#); [İlter, 2015](#); [Khodjiakbarovna, 2024](#)).

Moreover, in Cambodia, educational approaches are evolving through the integration of interactive whiteboards, virtual classrooms, and e-learning systems, which help improve inclusion, build digital skills, and update teaching practices ([Sam, 2024](#)). Over the past 30 years, technology has become increasingly central to education, with educators using various tools to meet learners' diverse needs ([Al-Maashani & Mudhsh, 2023](#)). As [Richey et al. \(2008\)](#) emphasize, there is growing pressure on the education sector to adopt ICT, mobile devices, and multimedia to enhance instruction, supported by a structured process of planning, implementation, and evaluation.

English holds a significant place in daily life and is studied for various reasons. Around the world, it is frequently regarded as a second language and is vital for advancement in numerous sectors, especially given that much scholarly research is published in English. As a result, it has earned its status as a leading global language. Many educational institutions—from primary schools to universities—have adopted English as the primary language of instruction ([Morris & Maxey, 2014](#); [Purwanto, 2024](#); [Bunrosy & Vireak, 2024](#); [Lan et al., 2024b](#)).

However, mastering English presents challenges, as highlighted by [Ishihara & Cohen \(2014\)](#) and [Lan et al. \(2024a\)](#). Over time, language teaching approaches have undergone significant changes, moving beyond traditional methods to include media such as radio, television, and, more recently, digital tools ([Keo et al., 2025](#); [Lan et al., 2024c](#)). The importance of technology in English instruction is well acknowledged, as it has made learning more accessible and effective. [Graddol \(2012\)](#) and [Stasberger \(2023\)](#) emphasize that technology plays a key role in globalization, affecting education, employment, and cultural exchange – especially in today's digital era.

Numerous studies also confirm technology's positive impact on language learning, particularly for speaking and writing. For instance, [Mustafa \(2018\)](#) investigated how platforms like YouTube, Skype (which is now has been discontinued), and WhatsApp enhance EFL learners' speaking skills, and [Yundayani et al. \(2019\)](#) explored Canvas's role in improving writing. Information technology significantly strengthens core language competencies—listening, speaking, reading, and writing—largely due to its accessibility via digital libraries, online dictionaries, and thesauri, which efficiently expand vocabulary and improve reading and writing. Additionally, interactive tools create more engaging and communicative learning environments crucial for developing oral and aural skills. In today's information age and globalized world, technology has overcome traditional language learning barriers and generated new educational possibilities.

Despite its advantages, research also points to challenges educators face in technology implementation. [Pham \(2022\)](#) notes that some instructors, especially older ones, may lack necessary digital skills, hindering their ability to effectively engage students with technology. Although technology use in classrooms is increasing across educational levels ([Van et al., 2012](#); [Murdan & Halkhoree, 2024](#)), teachers and students still encounter difficulties like maintaining engagement and transitioning from traditional methods, leading to hesitancy among some educators. Nevertheless, technology's benefits, such as improved pronunciation, communication skills, and access to learning resources, are driving its growing adoption in English language learning.

Ultimately, the Ministry of Education, Youth and Sport ([MoEYS, 2023](#)) highlighted concerns about educational technology in higher education, especially the lack of qualified researchers to address digital challenges. [MoEYS \(2022\)](#) also noted that poor IT infrastructure and unstable internet – particularly in rural areas – limit the effective use of technology in teaching, with teachers struggling to integrate digital tools and students facing difficulties completing online tasks.

This research aims to investigate the perceptions of students and the effects of incorporating technology into English language learning within higher education. The study focuses on various types of technology, including computer-based tools (e.g., Google Translate Desktop and Longman Dictionary), social media platforms (such as Facebook, Twitter, Instagram, and Telegram), audio-visual resources (like YouTube, Skype, MP3 players, TikTok, and podcasts), mobile and tablet applications (including Learn English Grammar App, Dictionary App, Paragraph App, and English Listening App), as well as word processing software (such as Google Docs, Mind Map, and Microsoft Word). The outcomes of this study are expected to support both learners and educators by refining instructional methods, filling existing research gaps, and boosting students' academic outcomes – ultimately equipping them for success in a digitally connected environment. To fulfill these objectives, the study will explore the following research questions:

1. To what extent does the National University of Battambang (NUBB) currently use educational technology?
2. Do students' perceptions of how men and women use educational technology in English language instruction differ?
3. Do freshmen's opinions on the use of educational technology in English instruction differ significantly depending on their age groups?
4. How does the use of educational technology positively influence students' performance in learning English?

### Defining Technology

According to, Ahmadi and Reza (2018), technology as a tool is used to complete tasks through technical methods or information. Not only to complete tasks, technology specifically used in education is also used to improve learning ([Januszewski & Molenda, 2013](#)). According to [Huang \(2019\)](#) and [Luppiciini \(2005\)](#), it is a method of problem-solving that integrates different tools, strategies, and practices to enhance learning and promote educational reforms.

Additionally, [Dey \(2017\)](#) explains that separating "education" from "technology" helps define "educational technology:" education involves shaping behavior and social development, while technology refers to the use of scientific tools for practical purposes. Therefore, the focus of educational technology is on using media in a way that promotes learning and teaching. It is further defined by [Richey et al. \(2008\)](#) and [Xu \(2024\)](#) as any resources, procedures, or methods – such as instructors, books, projectors, or tests – that are used to enhance learning. Crucially, mobile learning has become more useful and accessible as smartphones and educational apps proliferate. Devices like iPads and smartphones now support ICT-based teaching, which requires teachers to be tech-savvy and flexible ([Sharma, 2019](#); [Ofosu, 2024](#)). The term "technology" in this study refers to tools such as word processing, social media, online audio and video, apps, and computer software, with the goal of examining how these tools affect first-year students at the National University of Battambang's acquisition of English.

### Policy on technology integration

The Royal Government of Cambodia (RGC) plans to shift to a knowledge-based economy by 2025, aiming to improve citizens' quality of life through greater ICT integration. For national competitiveness, MoEYS emphasizes the value of 21st-century skills, particularly ICT use. MoEYS will evaluate international best practices, provide ICT recommendations, and improve data-driven decision-making through the Department of Information Technology (DIT). The ministry wants to give students ICT skills for the modern workforce and modernize education governance.

### Pedagogical approaches

[Meutia et al. \(2024\)](#) and [Dudeney \(2007\)](#) provide advice on how to use lesson plans and websites efficiently for teachers who are new to integrating ICT into language instruction. It is crucial to make a detailed plan and make sure the website is reliable – ideally, a professional one. In order to handle unforeseen technical issues or power outages, educators should prepare their materials ahead of time and have backup plans. When working with younger students, teachers should check the websites and content, ensuring that the language is age-appropriate or limiting access with software. But a more useful strategy is to teach students how to use the internet efficiently.

According to a number of studies, incorporating technology into teaching methods is important because it increases both teachers' and students' involvement in the learning

process ([Salam et al., 2019](#)). In addition to helping students use technology more effectively, Islam et al. (2019) contend that integrating technology into the classroom enables teachers to hone their pedagogical and subject-matter expertise. The advantages of technology for educators are also highlighted by more research. Vongkulluksn et al. (2018) discovered, for instance, that teachers who are proficient with technology typically spend more time instructing in the classroom. As their technological skills allow them to use a range of teaching techniques and strategies, their performance improves.

Additionally, [Englund et al. \(2017\)](#) list five methods for incorporating technology into instruction. With the help of pre-made materials, the first two are teacher-centered and primarily use technology to deliver content and enhance comprehension. The third strategy makes use of communication tools to facilitate group projects and simulations for students. The fourth encourages problem-based learning and teamwork among students in online environments. The fifth is student-centered, where students use open resources and multimedia to help design curricula and produce digital content that prepares them for future careers.

### **Digital platforms and software tools to support language learning**

According to [Keo et al. \(2025\)](#), integrating technology into higher education in Cambodia requires overcoming challenges while utilizing available opportunities. For better results, teachers should use technology in conjunction with communicative teaching strategies and a learner-centered approach, according to [Bunrosy & Vireak \(2024\)](#). [Vonog \(2021\)](#) highlights the effectiveness of digital platforms like Zoom, Skype, Webinar, and Discord in delivering English education, offering features such as screen sharing, video/audio communication, and private session rooms. The choice of platform depends on the institution's resources, teachers' goals, and experience, with these tools simulating real-time communication to enhance the learning process.

Online discussion boards are also essential for improving communication, engagement, and motivation between teachers and students. According to [Hussin et al., \(2019\)](#), platforms such as Google Group, Yahoo Group, ESL Café Forum, and SIEC facilitate increased interaction and idea sharing between students and teachers. Online discussion boards can also increase students' motivation and involvement in the learning process, according to Jose and Zianol Abidin (2016). Students can increase their involvement even more by participating in conferences, debates, and discussions ([Bangert, 2004](#); [Boyle & Nicol, 2003](#); [Delaney et al., 2019](#)).

Additionally, email and instant messaging apps play a vital role in enabling fast communication and interactive learning. Email is one of the most commonly used tools ([Roberson & Klotz, 2002](#); [Dawley, 2007](#); [Kong & Konstan, 2024](#)), enabling fast connections between students and teachers. WeChat, Facebook, Twitter, WhatsApp, and other well-known instant messaging apps provide both synchronous and asynchronous communication options. Platforms like Zoom and Skype enrich English teaching by simulating live interaction, providing students with various ways to receive feedback ([McGreal, 2004](#); [Vonog et al., 2021](#); [Ompidan & Sanusi, 2024](#)).

Language learning is made easier by the widespread use of a variety of technological tools by students, including computers, MP3 players, smartphones, televisions, and personal digital assistants. Students can access lessons from any location outside of the classroom thanks to these devices. Thanks to ongoing technological developments, students can now learn English on their own without going to formal



classes. Numerous easily navigable tools facilitate this self-directed learning, making it accessible to all learners ([Alsulami, 2016](#)).

Technological advances are increasing global interconnectedness, pushing businesses to expand internationally and individuals to become more mobile ([Selwyn et al., 2006](#)). As a result, English language learning is increasingly valuable, especially in non-English-speaking regions. Teaching English has become a profitable field worldwide. For example, 40,000 Chinese students were enrolled in English courses in the U.S. ([Bartlett & Fisher, 2011](#)), highlighting the growing demand for English in global education.

### **Mobile learning (M-Learning)**

For language development, mastering the four language skills via mobile devices (m-learning) is essential. Laufer & Nation quoted in ([Derakhshan & Khodabakhshzadeh, 2011](#)) state that in order for EFL learners to comprehend, they must have at least 5,000 base words. While older tools like CDs and radios have helped, mobile learning is more flexible and portable. It allows learning anytime, offers a low-stress alternative to traditional assessments, and makes use of short breaks for extra practice ([Derakhshan & Khodabakhshzadeh, 2011](#)).

### **Word processing**

Research by [Sulistyaningrum \(2024\)](#) and [Abuseileek \(2006\)](#) demonstrated that word processors have a significant impact on teaching and learning writing skills. According to the study, the structured writing environment provided by word processors helped students recognize and fix their mistakes more quickly. Additionally, students could use word processors for a variety of tasks, including proofreading for spelling, grammar, and style errors.

### **Self-education**

Informal and self-directed learning, which is facilitated by technology and learner-centered methodologies, is essential to lifelong learning because it provides flexibility and independence. [Morris \(2024\)](#) points out that adults are accustomed to this kind of learning, but [Livingstone \(2000\)](#) clarifies that formal education is not necessary. According to [Morgan \(2024\)](#), students are solely accountable for their own development, frequently outside of the conventional classroom. Despite being frequently disregarded, informal learning is particularly prevalent in the workplace, making up roughly 90% of learning ([Medina, 2023](#)) ([Selwyn et al., 2006](#)). ICT developments are making lifelong learning more individualized and accessible, which is facilitating a move toward learner-centered approaches ([John & Wheeler, 2008](#); [Selwyn et al., 2006](#)).

Additionally, self-directed learners should: a) Know when to seek assistance; b) Look for other sources of support; c) Improve their learning through exploration; d) Learn at their own pace and efficiently manage their time; and e) Develop their capacity to learn from mistakes in order to succeed in an online ESL [environment \(Kannan & MacKnish, 2000\)](#).

### **Students' engagement**

Older, conventional teaching strategies have been replaced by modern technological tools and applications, which have greatly increased student participation and engagement in English classes. Teachers can significantly increase student engagement and active participation by utilizing technology tools like computers, tablets, and online learning platforms, according to Kaur and Nadarajan (2020). Traditional English teaching methods, which relied on basic classroom activities with tools like cassette players,

blackboards, and chalk, are now considered outdated. They are being replaced by more contemporary tools like interactive whiteboards, TVs, and projectors in English classes.

### **The role of educational technology to improve English four macro skills**

Computers offer significant benefits for both English language teachers and students through various software applications for vocabulary, grammar, pronunciation, spelling, and reading/writing, aiding teachers in designing effective tutorials ([Nomass, 2013](#)). This section will explore technology's impact on formal and informal English language learning. [Chapelle \(2003\)](#) argues that technology is crucial for developing students' language skills both in and out of the classroom, emphasizing the need for extracurricular English use to enhance communication proficiency and noting that technology can boost student motivation in language learning ([Chapelle, 2003](#)).

According to [Gordon \(2007\)](#), technological integration aids language learning, pointing to numerous studies that demonstrate enhancements in teaching and learning methodologies, particularly in terms of content and approaches. [Gordon \(2007\)](#) also emphasizes how technology can expand the perspectives and improve the understanding of young students. Consequently, technological tools provide a number of advantages that enhance the educational process.

The literature also emphasizes how technology affects the development of reading and writing skills. Word processing software was first developed for simple purposes, but it has since developed to facilitate English reading and writing, especially for online education. Because word processing software is so easy to use, it's perfect for improving writing and reading abilities. According to [Al-Harbi \(2008\)](#), word processors and the Internet have improved the reading and writing skills of ESL students.

[Kasapoglu \(2010\)](#) states that the researcher emphasizes the value of technology, especially word processing software, in enhancing English language learners' reading and writing abilities. Writing development is supported by these resources, including bilingual versions (p. 229). [Peregoy & Boyle \(2012\)](#) also discovered that because technology is easy to use, it enhances writing and reading abilities while speeding up and streamlining learning. According to their findings, students learn better when using technology because English-dominant websites make it simple for them to access lessons from anywhere. Additionally, the study backs up the use of word processing software in students' reading and writing processes. The statement "word processors, including some bilingual versions, are an excellent means to advance writing development and encourage students to write" (p. 229) was emphasized by [Kasapoglu \(2010\)](#). [Peregoy & Boyle's \(2012\)](#) study supported this theory by demonstrating that students' reading and writing skills improved as a result of technology tools' ease of use, which facilitated faster and more efficient learning.

[Herron & Seay \(1991\)](#) found that middle-level EFL students in an experimental group, who listened to radio tapes instead of regular activities, outperformed a control group. This was attributed to the variety of linguistic contexts offered by videos of native speakers, whose visual component more effectively reduced learning anxiety compared to audio cassettes. Research also indicates positive correlations between listening skills and technology use in language learning ([Jones, 2003](#); [Wong, 2005](#); [Beare, 2008](#)), highlighting the benefits of digital innovations like the Internet, multimedia, and dynamic websites. For instance, YouTube, with its extensive video collection and sharing capabilities, has been particularly useful ([Badal, 2008](#); [Cass, 2007](#)).

### **Technology boosts students' self-directed learning and confidence**

Technology, via apps and instructional videos, aids students in independently developing their English reading, writing, speaking, and listening skills. Despite the need for better equipment, training, and awareness, ELT students perceive technology as beneficial for their learning and self-directed study ([Kazu & Issaku, 2021](#)). [Hossain \(2018\)](#) highlighted that apps support vocabulary, pronunciation, and all four language skills, fostering flexible and interactive learning. Furthermore, [Shah et al. \(2016\)](#) showed that smartphones can enhance IELTS learners' listening abilities.

### **Technology enhances students' skills needed for the 21st century**

Technology skills are a key part of 21st-century literacy, helping students learn faster, stay motivated, and be more creative. [John \(2018\)](#) found that tools like CALL, RALL, and MALL support second language learning by combining language skills, easing anxiety, and encouraging motivation through games and creative tasks. These tools also help students build social identity and confidence when interacting with native speakers. Additionally, digital technologies provide instant feedback and track progress ([John, 2018](#); [Long et al., 2024](#)).

### **Integration of technology**

To enhance authentic teaching and learning experiences for both teachers and students, a large number of educators in Cambodia are attempting to incorporate the available educational technologies. [Doeur \(2021\)](#), for instance, notes that digital applications are made to enhance classroom instruction and boost students' motivation to learn a foreign language. Facebook and Telegram are popular in Cambodia and are frequently used for social networking, marketing, and education, especially in language learning. [Shadiev & Wang \(2022\)](#), for example, divided technology into eight categories according to their purposes: (1) collaborative tools (e.g., Google Docs and Padlet) for sharing and co-editing; (2) social tools (e.g., Facebook and Skype) for remote or real-time communication; (3) creative tools (e.g., Photo Story and Adobe Spark) for creating digital content; (4) learning management systems (e.g., Moodle) for individualized online education; (5) classroom interaction tools (e.g., Quizlet and Kahoot) for interactive activities; (6) multimedia resources (e.g., online audio and video); (7) presentation tools (e.g., PowerPoint) for digital presentations; and (8) wearable technology (e.g., Google Glass) for virtual reality experiences.

### **Hypothesis**

**H1:** Purposes of Using Technology (PUT) impact on language performance (LP)

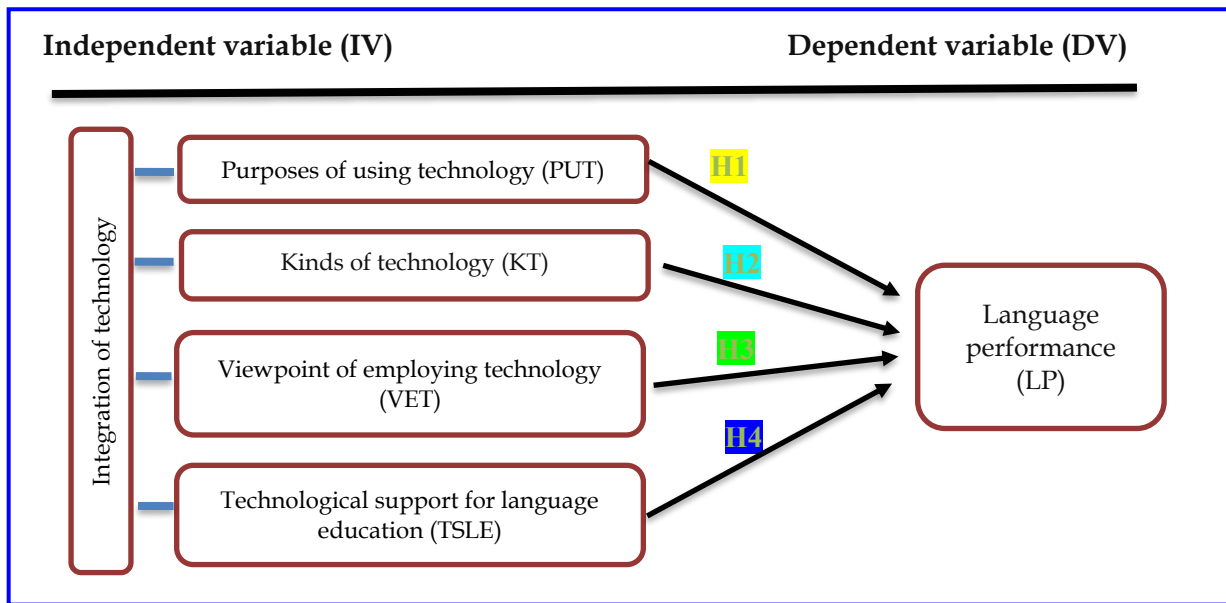
**H2:** Kinds of Technology (KT) influence on language performance (LP)

**H3:** Viewpoint of Employing Technology (VET) influences on language performance (LP)

**H4:** Technological Support for Language education (TSLE) affects on language performance (LP)



### Conceptual framework



**Figure 1.** Conceptual framework

## RESEARCH METHOD

### Research design

The case study at the National University of Battambang (NUBB) in Cambodia aims to investigate first-year university students' perceptions of and reactions to incorporating technology into English language instruction. This investigation uses a quantitative research approach. Three quantitative methods will be employed: regression analysis to evaluate the impact of independent variables on the dependent variable, inferential statistics (*T*-Test and ANOVA) to analyze differences within and between groups, and descriptive statistics to summarize item frequency and levels of agreement.

### Population and sample size

EFL students from the National University of Battambang's Faculty of Foreign Languages, including freshmen, sophomores, juniors, and seniors, participated in the case study. Two hundred male and female pupils were chosen at random ([Hossan et al., 2023](#); [Rahman et al., 2022](#); [Li, 2022](#)). A sample size of 200 is sufficient for a population of 400, according to prior research ([Rahman, 2023](#); [Lewis et al., 2021](#); [Kock & Hadaya, 2018](#)). Purposive sampling was used to collect data from 205 freshmen majoring in social sciences, sciences, English literature, and ICT. NUBB was selected because of its prominence in northwest Cambodia.

### Research instrument

A slightly modified version of [Alsulami's \(2016\)](#) survey questionnaire was used as the main research tool. It had two parts: one collected demographic information (gender, age, major, income), and the other focused on technology use, using a Likert scale. Participants filled out the survey during class time with permission from instructors, taking about 20 minutes. To make sure everyone understood, the researcher provided explanations in both Khmer and English.

### Data collection

The researchers collected primary data by distributing questionnaires to students during class, with approval from the Department. Each participant took about 20 minutes to complete the opinion-based survey. To ensure clarity, the researcher explained and translated the questions into Khmer. Additionally, secondary data was also gathered from academic studies and scholarly sources.

### Analyzing of data

This study examines the opinions of first-year students at the National University of Battambang as well as the effects of technology use on English language acquisition. Using descriptive statistics, *t*-tests, ANOVA, regression, and correlation analysis, SPSS 25.0 was used to analyze the data. ANOVA evaluated age group differences, while the *t*-test investigated gender differences. The effects of technology types (H2), attitudes (H3), technology-assisted learning (H4), and usage purpose (H1) on learning outcomes were examined using regression. The data was interpreted using both descriptive and inferential statistics ([Baker, 2017](#)).

## FINDINGS AND DISCUSSION

### The questionnaire's validity and dependability

An education specialist examined the questionnaire prior to the pilot test to make sure that its wording, structure, and content matched the objectives of the study ([Bujang, 2024](#); [Seguí, 2015](#)). Clarity and grammar corrections were also offered. Data was kept private and only the research team had access to it. When reliability was assessed using SPSS's coefficient alpha method, the results showed an acceptable level of internal consistency, with a score of approximately .70 or higher ([Osburn, 2000](#); [Streiner, 2003](#)).

**Table 1.** Questionnaire reliability

Categories	Number of items
Purposes of Using Technology (PUT)	2
Kinds of Technology (KT)	5
Viewpoint of Employing Technology (VET)	7
Technological Support for Language Education (TSLE)	5
Language Performance (LP)	5
	24 items
Total	Cronbach's Alpha = .703

The mean rank interpretation is applied to the following results.

**Table 2.** Mean Rank Interpretation

3.01-4.00	High degree of significance of using technology
2.01-3.00	Moderate degree of significance of using technology
1.00-2.00	Low degree of significance of using technology

### The demographic profile of the respondents

**Table 3.** Participants' demographic profile

Characteristic	Frequency	Percentage
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Gender	Male	46	22.4
	Female	159	77.6
Major	Science	107	52.2
	Social Science	44	21.5
	ICT	21	10.2
	English Literature	33	16.1
Age	18-20	183	89.3
	21-25	21	10.2
	26- above	1	.5

The results stem from the first research question: To what extent does the National University of Battambang (NUBB) currently use educational technology?

**a. How often do students use technology to improve their English?**

**Table 4.** Purposes of using technology (PUT)

Items	Statements	Level of Agreement %			M	SD
		Always	Sometimes	Never		
<b>PUT1</b>	I utilize technological tools to view English-language TV shows, videos, or movies.	36.1	60.5	3.4	1.67	.538
<b>PUT2</b>	I use digital tools to look up information on English-language websites	57.6	38.0	4.4	1.47	.582

\*Level of frequency: 1= Always, 2= Sometimes, 3= Never

Table 4 shows that students use technology more often to look for information in English ( $M = 1.47$ ) than to watch English TV, videos, or movies ( $M = 1.67$ ). This means they search online more regularly, but they only watch videos sometimes. In short, using the internet to find information is a bigger part of how they learn English than watching videos.

**b. What kinds of technology do students use to aid in their English language learning, such as computer software, online audio and video resources, Facebook, Twitter, WhatsApp, and Telegram?**

**Table 5.** Kinds of Technology (KT)

Items	Statements	Level of Agreement %			M	SD
		Always	Sometimes	Never		
<b>KT1</b>	1-To enhance my English proficiency, I use computer programs for learning the language, such as Google Translate Desktop and Longman Dictionary.	51.2	44.4	4.4	1.53	.582
<b>KT2</b>	2- I use social media platforms like Facebook, Instagram, Twitter, and	44.4	50.7	4.9	1.60	.582

	Telegram to improve my English.						
<b>KT3</b>	3-To improve my English, I use online audio and video resources like podcasts, MP3 players, YouTube, Skype, and Tik Tok.	42.9	54.6	2.4	1.60	.540	
<b>KT4</b>	4- To learn English, I use apps on my tablet or smartphone, such as the Learn English Grammar App, Dictionary App, Paragraph App, and English Listening App.	47.3	46.8	5.9	1.59	.601	
<b>KT5</b>	5- To improve my English, I utilize word processing software, such as Microsoft Word, Google Docs, and Mind Maps.	26.3	57.1	16.1	1.91	.661	
*Level of frequency: 1= Always, 2= Sometimes, 3= Never							

Table 5 demonstrates that, although at varying frequencies, students use a variety of technologies to enhance their English language proficiency. The frequency of use of word processing tools ( $M = 1.91$ ) is lower, usually "Sometimes." The frequency of use of online audio/video tools ( $M = 1.60$ ) and social networking sites ( $M = 1.60$ ) ranges from "Sometimes" to "Always." Apps for smartphones or tablets ( $M = 1.59$ ) are utilized marginally more frequently than online resources and social media. The most common use is computer software ( $M = 1.53$ ), which is usually closer to "Always." According to this, although students employ a variety of resources, computer software is most frequently used to improve their English, whereas word processing tools are used less frequently.

### c. How do you feel about learning English through technological tools?

**Table 6.** Viewpoint of employing technology (VET)

Items	Statements	Level of Agreement %				M	SD
		SD	D	A	SA		
VET1	Using technology to learn English is fun for me.	3.4	2.9	67.3	26.3	3.17	.635
VET2	I am aware that technology can aid in improving my English language learning.	2.4	1.0	57.6	39.0	3.33	.624
VET3	I like using technology to improve my writing, speaking, listening, and reading skills.	2.9	2.4	58.0	36.6	3.28	.655
VET 4	Using online learning resources to learn English is something I truly enjoy.	3.9	14.1	70.7	11.2	2.89	.633
VET5	Multimedia resources (like computers, YouTube, Facebook, TikTok, and Telegram) are excellent for	1.5	8.8	70.7	19.00	3.07	.577

	learning English, in my opinion.						
VET6	I think it's essential to use technology when learning English.	4.9	5.9	39.0	50.2	3.35	.800
VET7	I believe that technology tools are more effective in enhancing my language skills.	2.0	3.9	69.3	24.9	3.17	.582
*Level of Agreement: 1= Strongly Disagree, 2= Disagree, 3= Agree, 4= Strongly Agree							

With mean scores (*M*) ranging from 2.89 to 3.58, Table 6 demonstrates that students' attitudes toward using technology to learn English are generally positive. Students are somewhat in agreement that technology enhances language proficiency (*M* = 3.28) and makes learning fun (*M* = 3.17). Additionally, they acknowledge the educational value of sites like Facebook, YouTube, TikTok, and Telegram (*M* = 3.07). Strong support exists for the idea that technology is essential for learning English (*M* = 3.35), and the greatest agreement was found regarding the usefulness of technological tools for enhancing language proficiency (*M* = 3.58). The marginally lower score (*M* = 2.89) for using online learning platforms, however, points to some hesitancy or a preference for alternative approaches.

**Which of these technologies do you think will help you become more proficient in English?**

**Table 7.** Technological support for language education (TSLE)

Items	Statements	Level of Agreement %				<i>M</i>	<i>SD</i>
		SD	D	A	SA		
TSLE1	To improve my language skills, computer programs for learning English – such as Google Translate Desktop and Longman Dictionary – are crucial.	1.0	4.9	69.3	24.9	3.18	.553
TSLE2	Social media platforms like Facebook, Instagram, Twitter, and Telegram are very beneficial for enhancing my writing, reading, and communication abilities.	.5	5.9	71.2	22.4	3.16	.529
TSLE3	My speaking and listening skills are greatly improved by using online audio and video resources, such as YouTube, Skype, MP3 players, Tik Tok, and podcasts.	2.4	8.3	68.3	21.0	3.08	.621



TSLE4	Applications for smartphones and tablets, such as the Learn English Grammar App, Dictionary App, Paragraph App, and English Listening App, are very helpful in helping me get better at the language.	2.0	.0	65.9	32.2	3.30	.501
TSLE5	My writing abilities are greatly enhanced by word processing software, such as Microsoft Word, Google Docs, and Mind Maps.	1.0	8.8	72.2	18.0	3.07	.551

\*Level of Agreement: 1= Strongly Disagree, 2= Disagree, 3= Agree, 4= Strongly Agree

With mean scores (*M*) ranging from 3.07 to 3.30, Table 7's results demonstrate that all of the technologies mentioned are generally thought to be helpful for enhancing English language proficiency. The greatest degree of agreement was found with mobile apps (*M* = 3.30), followed by social networking sites (*M* = 3.16), and computer software (*M* = 3.18). Additionally, word processing tools (*M* = 3.07) and online audio and video tools (*M* = 3.08) were highly valued. All things considered, these technologies are thought to be useful for assisting language learning, with mobile apps being especially well-liked.

To put it briefly, the results answer the first research question by showing that students at NUBB regularly use technology to learn English, with online searching being more common than media viewing (*M* = 1.47). Word processing tools are used less frequently (*M* = 1.91) than computer software, which is the most commonly used tool (*M* = 1.53). The majority of students have a favorable attitude toward using technology in the classroom, and they strongly agree that it improves language proficiency (*M* = 3.58). There is a significant dependence on digital tools for language learning, as evidenced by the fact that mobile apps are regarded as the most beneficial (*M* = 3.30) and computer software is ranked second (*M* = 3.18).

**The results are predicated on the second research question: Do students' perceptions of how men and women use educational technology in English language instruction differ?**

**Table 8.** Independent sample t test between genders

	Gender	N	Mean	SD	t	df	Sig
totalput	Male	46	1.64	.443	-1.224	73.621	.225
	Female	159	1.55	.447			
totalkt	Male	46	1.72	.392	-1.536	68.660	.129
	Female	159	1.62	.361			
totalvet	Male	46	3.10	.508	1.247	59.989	.217
	Female	159	3.20	.376			
totallp	Male	46	3.00	.379	2.162	70.271	.034
	Female	159	3.14	.361			
totaltsle	Male	46	3.13	.346	.707	74.726	.482
	Female	159	3.17	.356			

*p*-value < .05 =statistically significant; *p* -value ≥ .05 = not statistically significant

The results of an independent sample t-test that looked at gender differences in NUBB students' use of educational technology are shown in Table 8. The majority of the variables have  $p$ -values above .05, including totaltt ( $p = .129$ ), totalaut ( $p = .217$ ), totaltall ( $p = .482$ ), and totalup ( $p = .225$ ), indicating no discernible differences between male and female students in these domains. In contrast to male students, female students tend to integrate technology at lower levels, according to the statistically significant totalelo variable ( $p = .034$ ).

In conclusion, the analysis found no significant gender differences in most aspects of educational technology use, except for lower-level integration, where females were more engaged than males. This implies that while gender does not generally influence educational technology integration, it may affect certain contexts, such as lower-level usage.

**The results are predicated on the third research question: Do freshmen's opinions on the use of educational technology in English instruction differ significantly depending on their age groups?**

**Table 9.** One-way ANOVA among age

		Sum of	df	Mean	F	Sig.
		Squares		Square		
Purpose of Using Technology(UP)	Between Groups	.410	2	.205	1.028	.360
	Within Groups	40.314	202	.200		
	Total	40.724	204			
Kinds of Technology (KT)	Between Groups	.428	2	.214	1.573	.210
	Within Groups	27.479	202	.136		
	Total	27.907	204			
Viewpoint of Employing Technology (VET)	Between Groups	.805	2	.402	2.422	.091
	Within Groups	33.558	202	.166		
	Total	34.363	204			
Technological Support for Language Education (TSLE)	Between Groups	1.348	2	.674	5.650	.004
	Within Groups	24.091	202	.119		
	Total	25.439	204			
Language Performance (LP)	Between Groups	.942	2	.471	3.553	.030
	Within Groups	26.782	202	.133		
	Total	27.724	204			

$p$ -value < .05 = statistically significant;  $p$ -value  $\geq$  .05 = not statistically significant

The findings of a one-way ANOVA examining how age affects freshmen's use of technology for English language learning are shown in Table 9. Regarding the types and purposes of technology used, the ANOVA results show no significant differences between age groups ( $p = .36$ ;  $p = .210$ ). Attitudes regarding technology use, however, are getting close to significance ( $p = .091$ ). Age does appear to have an impact on these aspects, as evidenced by the significant differences found in the ways that technology supports language learning

( $p = .004$ ) and its impact on English learning outcomes ( $p = .030$ ). According to these results, age has an impact on how well technology supports language learning and enhances English learning outcomes, but it has no discernible effect on technology use.

**The results are predicated on the fourth research question: How does the use of technology positively influence students' performance in learning English?**

**Table 10.** Regression coefficients and hypothesis testing

Hypothesis	Relationship	Beta	SE	t-value	Sig.	Decision
H 1	PUT $\rightarrow$ LP	.047	-.126	-2.192**	.030	Supported
H 2	KT $\rightarrow$ LP	.058	-.106	-1.817*	.071	Supported
H 3	VET $\rightarrow$ LP	.053	.155	2.602**	.010	Supported
H 4	TSLE $\rightarrow$ LP	.063	.511	8.516***	.000	Supported

Beta=regression weight. SE=standard error. Sig. = Significant, \*  $p < .10$  (marginally significant); \*\*  $p < .05$  (significant); \*\*\*  $p < .01$  (highly significant)

According to the regression analysis, LP is significantly positively impacted by PUT (H1) ( $\beta = .047$ ,  $p = .030$ ), indicating that LP improves as PUT rises. LP improves as VET rises, according to VET (H3), which likewise has a significant positive effect ( $\beta = .053$ ,  $p = .010$ ). The strong positive effect of TSLE (H4) ( $\beta = .063$ ,  $p = .000$ ) indicates a very strong relationship. This indicates that there is strong support for the relationships between H1, H3, H4, and LP. However, KT (H2) has a slight but positive effect on LP ( $\beta = .058$ ,  $p = .071$ ), indicating that the relationship is weaker and might require more research. The majority of relationships are solid overall, but further research is needed to determine how KT affects LP.

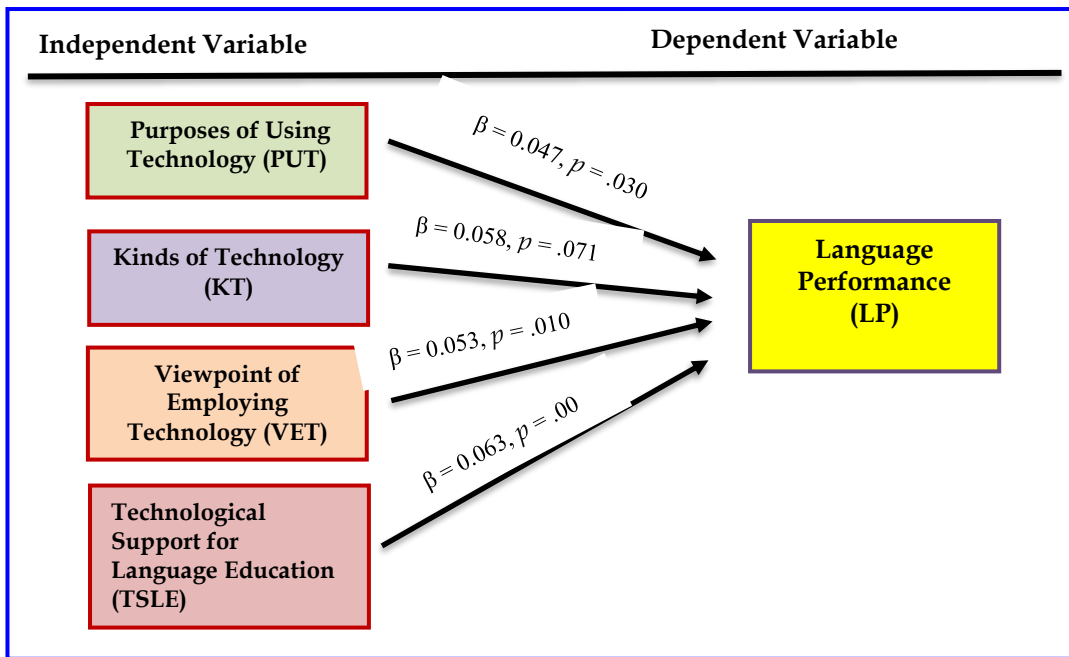


Figure 2. Regression and hypothesis testing

## Discussion

This study's primary objective was to investigate the opinions of students at the National University of Battambang (NUBB) and the ways in which technology use impacts their English learning results. The study's findings answered the research questions and provided insightful information about how educational technology can help students' English proficiency.

According to the findings for the first research question, which examined how technology is currently being used, students frequently use it to aid in their English language learning. Online information searches are more prevalent ( $M = 1.47$ ) than media or video viewing ( $M = 1.67$ ). This confirms earlier research by [Dogruer et al. \(2011\)](#), who found that a large number of students favor search engines due to their effectiveness and ease of use. Computer software, such as Google Translate or the Longman Dictionary, is the most frequently used tool ( $M = 1.53$ ), whereas word processing tools are used less frequently ( $M = 1.91$ ). The majority of students have a favorable opinion of using technology in the classroom. They strongly agree that it helps improve their English skills, especially in reading, writing, speaking, and listening ( $M = 3.58$ ). This finding agrees with [Peregoy & Boyle \(2012\)](#), who found that technology tools helped students learn faster and more easily. Other researchers also agree that technology supports language learning. For example, [Chapelle \(2003\)](#) pointed out that it helps students build language skills both in and out of the classroom, and [Gordon \(2007\)](#) also highlighted its importance. Additionally, mobile apps such as the Learn English Grammar App, Dictionary App, and English Listening App are the most useful to students ( $M = 3.30$ ), with computer software coming in second ( $M = 3.18$ ). These results are consistent with those of [Nomass \(2013\)](#), who noted that more students are using apps, particularly those with touchscreen features, to enhance their writing and increase their confidence.

Examining whether male and female students have different opinions about using educational technology was the study's second goal. The findings showed that there were no major differences between genders in most areas, such as how often they use technology and their overall attitudes toward it. However, one key difference stood out: female students were more likely than males to use technology at a basic or lower level. This

implies that although both sexes use technology in a similar way overall, their methods may vary, with women potentially relying more on less complex digital resources for their education. This supports earlier research by [Kay \(2006\)](#), who found that although there's no big difference in how much technology is used by males and females, the types of tools they use—especially basic ones—can differ. This confirms that female students may lean more toward using foundational technology in their studies.

The one-way ANOVA results showed that while students' age did not significantly affect how often they used technology, it did influence their perceptions of its usefulness in language learning. Because of their expectations and experiences, younger and older students had different opinions about how effective technology was. These findings align with [Teo's \(2011\)](#) study, which also found that age affects perceptions of technology's impact on learning, though not its frequency of use.

Examining how technology enhances students' English learning outcomes was the study's ultimate objective. The study identified a number of significant variables that influence NUBB freshmen's English proficiency. The purpose of using technology (PUT, H1) showed a positive impact on language performance (LP), meaning students tend to do better when they use technology for clear learning purposes ( $\beta = .047, p = .030$ ). Likewise, there was a positive effect on students' personal viewpoint of employing technology (VET, H3) ( $\beta = .053, p = .010$ ), indicating that self-motivation to use technology enhances learning. The most significant impact ( $\beta = .063, p = .000$ ) was caused by the use of technology as a technological support for language education (TSLE, H4). Nevertheless, the kinds of technology (KT, H2) had a negligible effect ( $\beta = .058, p = .071$ ), suggesting that further study is required in this field. Overall, H1, H3, and H4 were clearly linked to better English learning, while H2 showed only slight support. Other studies agree with these results. For example, research by [Rintaningrum \(2023\)](#) in Indonesia found that using digital tools like multimedia apps and online quizzes improved students' language skills and encouraged independent learning. However, challenges such as limited access to tools and fast-changing technology remain issues, similar to what students face at NUBB.

## CONCLUSION

According to a National University of Battambang (NUBB) study, students frequently use technology to aid in their English language learning, particularly through computer software and internet searches. Digital programs and mobile apps are thought to be very beneficial for improving language proficiency. Students generally have a favorable opinion of technology, which enhances their academic performance. While gender differences are mostly minor, female students tend to use basic forms of technology more than males. The research also shows that although age doesn't greatly affect how often students use technology, it does influence how they perceive its usefulness in learning English. Of all the variables, the one that has the biggest positive impact on students' English proficiency is the direct use of technology to enhance language learning.

In order to support skill development, the study advises educators to promote the use of a variety of technological tools, such as educational software and language learning applications. To get better at English, students should use smartphone apps like Google Translate Desktop, the Learn English Grammar App, and the Dictionary App. More significantly, in order to improve students' English learning outcomes, the university is recommended to invest in modern educational technologies, such as sophisticated language learning software and mobile applications.

## Limitation of the study

The study suggests that educators encourage the use of a range of technological tools, including educational software and language learning applications, to support skill development. Students should use smartphone apps such as Google Translate Desktop, the



Learn English Grammar App, and the Dictionary App to improve their English. More importantly, it is advised that the university make investments in cutting-edge educational technologies, like mobile applications and advanced language learning software, to enhance students' English learning outcomes. Moreover, the study mainly focused on specific types of technology – such as computer software, social media, online audio/video tools, mobile apps, and word processing programs – which might exclude other useful technologies that could also impact learning. This narrow focus may reduce the overall scope of the findings. Future studies are encouraged to include qualitative approaches to better explore how individual students experience and are affected by educational technology.

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