The Effectiveness of Using Technology in Learning English among Secondary School Students in The Endemic Phase

Paul Chandra Bose Selvarajoo, Haysriq Thomeeran, Norul Huda Mohd Ghazali, Durga Ganesen

Faculty of Education and Humanities, UNITAR International University, Malaysia
Corresponding Author Email: paul_chandra@unitar.my

Abstract
English language education in Malaysia traditionally relies on conventional face-to-face instruction, introduced at an early age. However, the 2019 pandemic necessitated a shift to online learning. This study investigates the attitudes and perceptions of secondary school students in Petaling Jaya regarding the efficacy of English language learning during the endemic phase. A total of 50 students, aged between 13 to 17 years, participated in the study, providing their insights through a questionnaire featuring a Likert scale (ranging from strongly agree to strongly disagree). The questionnaire consisted of two parts: Part 1 captured demographic information, while Part 2 delved into the study's main themes. The findings revealed that a majority of respondents expressed strong agreement regarding the significant improvement in their speaking and reading skills through online learning. A considerable proportion of students found online learning highly beneficial for acquiring new skills. Additionally, the instructional materials provided by teachers in online learning environments and the engaging activities and discussions facilitated a deeper understanding of the subject matter. While technology undoubtedly offers numerous benefits in the realm of education, it is essential to recognize that each learner possesses unique characteristics, preferences, and learning styles. Therefore, future research endeavors should strive to address the complexities associated with individual differences among learners.
Keywords: Perception, Attitude, Secondary Students, Effectiveness, English acquisition, Endemic phase

Introduction

The integration of technology into education, including English language learning, has seen a significant rise, reflecting its growing influence in other areas of life. This trend has been accelerated by the Covid-19 pandemic, which necessitated a rapid shift to online learning. Institutions and schools have adopted various technological tools to enhance the learning

experience, offering students increased access to research materials and educational resources (Apuke & Iyendo, 2018). Despite these advancements, many secondary school students struggle with English language acquisition and often exhibit a lack of enthusiasm and motivation in the classroom, significantly impeding their progress (Mekheimer, 2023).

Technology presents innovative ways to engage students in English language instruction. Integrating multimedia elements such as images, videos, and music into lessons has been shown to positively impact students' intellectual curiosity and cognitive skills (Mazzuco et al., 2022). Given the pervasive influence of technology in students' lives, leveraging it for educational purposes can be particularly effective. However, this dependency on AI tools may alter fundamental psychomotor and cognitive skills, raising concerns about students' holistic development (Morales-García, 2024).

Despite these challenges, the benefits of technology, such as improved pronunciation and communication skills, drive its continued adoption. Kaur and Nadarajan (2020) found that modern hardware and software effectively increase student engagement and active participation in the classroom. Understanding the impact of technology on student learning is crucial, as it has the potential to either significantly hinder or enhance learning outcomes. According to Siyabi et al (2022), technology empowers English language learners by enhancing learning styles and facilitating information exchange through digital literacy and web-based educational platforms.

Modern instructional technology supports collaborative, learner-centered, and autonomous learning environments. Tools like educational blogs, wikis, and discussion forums enable resource sharing and academic discussions between teachers and students, promoting a more interactive and engaging learning experience (Martin & Bolliger, 2018). Teachers can use technology to gain insights into student performance and adapt their instructional methods to meet students' needs more effectively. For instance, addressing specific grammatical challenges with advanced technological tools, such as AI and big data, can enhance the learning process's efficiency and effectiveness (Mahmudi, 2023).

This study aims to explore these dynamics further, investigating how technology affects student engagement and learning outcomes in English language education.

Objective of This Study
1. To identify the effectiveness of using technology to acquire the English language.
2. To investigate students' attitudes towards using technology in English language classrooms.

Research Questions
The following research questions are addressed in the study:
1. How do students perceive learning through technology?
2. What are students' attitudes towards the use of technology in the classroom?

Literature Review
Evolution of Technology in Education
The advent of technology has drastically altered the educational landscape, presenting both opportunities and challenges for educators. As Shyamlee and Phi (2012) note, technology profoundly impacts social and linguistic aspects of life, making it essential for educators to adapt traditional teaching methods. Especially for ESL students, integrating technology in learning English offers new possibilities and enhances engagement. Teachers are encouraged

to leverage these advancements to create more dynamic and interactive learning environments, facilitating a better understanding and usage of English in academic contexts.

Enhancing Learning through Technology

Technology enriches the learning experience by offering numerous resources and tools for students to engage with English in various ways. Erben et al (2008) highlight that technology provides English language learners (ELLs) with multiple opportunities to read, write, listen to, and discuss texts in English, promoting better language acquisition. Additionally, these technological tools help highlight linguistic patterns, making the learning process more intuitive and engaging.

Development of Language Skills

The use of networked computers has notably improved students' writing skills. Ennis et al (2021) on a telecollaboration project involving online peer feedback highlights the benefits of collaborative writing tasks in enhancing student engagement and language skills. This collaborative approach fosters connections between students, educators, and peers, contributing to a more interactive and engaging learning environment. Pourhosein Gilakjani (2018) supports this, noting that technology-mediated teaching methods enhance pedagogical effectiveness and learning styles, opening new pathways for learning through multimedia resources.

Integration of Technology in Classrooms

Technology's role in classrooms extends beyond engagement; it significantly enhances the curriculum. Teachers can model how technology can be used effectively, encouraging students to integrate these tools into their learning processes. Saidu and Mamun (2022) emphasised that teachers' beliefs and attitudes play a crucial role in determining their intention and actual use of technology in the classroom. Positive teacher attitudes can inspire student interest and motivation, making technology a valuable educational tool.

Impact of Technological Tools

Tools like PowerPoint and Kahoot! have become integral in modern classrooms. PowerPoint aids in creating visually appealing and interactive lectures, enhancing student engagement. Teachers can incorporate images, audio, and video, making lessons more dynamic. Kahoot!, a game-based learning platform, allows teachers to create interactive quizzes and games, promoting active learning and critical thinking. Kaur and Naderajan (2019) argue that Kahoot! fosters an engaging learning environment, helping students review course material more effectively.

Technological Advancements and Student Achievement

Effective use of technology can significantly boost student achievement. It provides students with necessary skills for future workplaces, breaking down geographical and temporal barriers. Dörnyei (2020) notes that technology positively affects students' attitudes towards learning, boosting self-confidence and self-esteem. Technology serves as both an educational and assessment tool, offering valuable insights into student progress and achievements. Caton et al (2022) highlight that by leveraging the internet as a virtual library, educational institutions can create more inclusive learning spaces that cater to the diverse needs of all learners, including those with disabilities.

Methodology

This study adopts a quantitative research design, specifically chosen for its effectiveness in elucidating the relationship between variables without exerting control over them. This approach allows for a comprehensive understanding of the phenomena under investigation. Methodologically, several pivotal aspects were meticulously considered. Firstly, a sampling frame was established, with a secondary school in Petaling Jaya serving as the focal point. The research aimed to explore the utilization of technology in English language instruction and its impact on student academic performance. The target population comprised secondary school students in Petaling Jaya, aged between 13 to 17 years. To ensure a representative sample, simple sampling methodology was employed, involving the selection of students from the same class, thus ensuring an equitable chance of selection and bolstering both internal and external validity. The study obtained responses from 50 participants. The unit of analysis focused on individual students from the selected secondary school in Petaling Jaya.

Data Collection Procedures

Google Forms questionnaire was utilized, comprising questions derived from existing literature to ensure relevance and validity. Prior to distribution, the questionnaire underwent validation by a lecturer to ensure its suitability and validity for the study. With the assistance of a teacher from the selected school, the questionnaire was distributed to students via WhatsApp groups. The timeline for data collection was carefully managed, with questionnaires posted despite challenges during final examinations, all 50 responses were collected within a month. The instruments of study were clearly outlined, with the questionnaire's purpose and study objectives explicitly stated, and the validated questionnaire distributed to participants.

In terms of data analysis, Statistical Package for the Social Sciences (SPSS) was employed for analysis, conducting frequencies and descriptive analysis to analyze the data and determine the relationship between independent and dependent variables. Additionally, a detailed examination of demographic data of the study to further understand the characteristics of the sample population and their relationship to the study variables. This methodology and data collection procedure ensure a systematic and rigorous approach to gathering and analyzing data, providing a solid foundation for the study's findings and conclusions.

Results
Descriptive Analysis
Socio-demographic

The questionnaire administered for this study included three key demographic questions: gender, age, and nationality. Statistical analysis was applied to examine the data pertaining to these demographic items. The survey data was collected from a total of 50 secondary school students in Petaling Jaya who actively participated in the study.

Table 1.1.1
Mean and Standard Deviation of Demographic Background

	Age	Gender	Race
Mean	3.5400	1.7200	1.9000
Standard Deviation	1.51469	45356	67763
N	50	50	50

GENDER

Table 1.1.2

Frequency and Percentage of Gender

Gender	Frequency	Percent
Male	35	70
Female	15	30
Total	50	100

The gender analysis of the respondents reveals that out of the 50 participants, 35 identified as male, representing 70 percent of the sample, while 15 identified as female, constituting 30 percent of the sample. This distribution suggests a higher proportion of male students compared to female students among the secondary school population in Petaling Jaya.

Table 1.1.3

Frequency and Percentage of Gender

Age	Respondents	Percentage
13 years old	6	12
14 years old	8	16
15 years old	6	12
16 years old	8	16
17 years old	22	44

Based on the provided information, it can be observed that the largest proportion of secondary school students, comprising 44% of the total respondents, were 17 years old, totaling 22 students. Following this, the second highest number of respondents were evenly distributed between 16 years old and 14 years old, each accounting for 16% of the sample, with 8 respondents each. The lowest number of respondents were found among the 13-year-old and 15-year-old age groups, each constituting 12% of the total respondents. Consequently, it can be concluded that the majority of participants in the study were 17 years old.

Table 1.1.4

Frequency and Percentage of Nationality

Nationality	Respondents	Percentage
Malay	13	26
Indian	29	58
Chinese	8	16
Other	0	0

Based on the provided data, it can be inferred that 26% of the secondary school students, totaling 13 students, identified as Malay. The highest proportion of respondents, constituting 58% of the sample, were from the Indian community, amounting to 29 students. The lowest number of respondents, comprising 16% of the total, were 8 students. Therefore, it can be concluded that the majority of the participants in the study were from the Indian community.

Descriptive Statistic

Descriptive statistics provide a comprehensive summary of the sample under investigation without relying on assumptions from probability theory. It assists research by presenting basic quantitative measurements such as mean and standard deviation, offering insight into the characteristics of the data. In accordance with APA guidelines, mean and standard deviation are calculated for both independent and dependent variables.

Questionnaire: Technology in learning English improves my learning acquisition
Table 2.1
Mean and Standard Deviation of Technology in learning English improves my learning acquisition

Statement	Mean	Standard Deviation
1. Speaking skills have been better after using technology in learning English	1.52	0.81416
2. Listening skills have been developed after using technology in learning English	1.66	0.65807
3. Reading skills have been improved after using technology in learning English	1.54	0.67643
4. Writing skills have been improved after using technology in learning English	1.7	0.86307
5. Pronunciation has been better after using technology test software	1.62	0.77959
6. I learn many new English words by online learning	1.38	0.63535
7. The usage of online dictionaries bring students benefits	1.44	0.61146
8. Online learning is more flexible to learn English	1.7	0.81441
9. Learning English online is more engaging that learning English in classroom	2.06	1.09563
10. Online learning helps me to communicate with my teacher easily when I have any doubt about learning English	1.94	0.97750
11. Technology gives students motivation and interest to learn English	1.72	0.83397
12. Students like learning English with video clips, images, and games	1.42	0.70247
13. Learning English with the use of technology make students difficult to understand	3.88	1.25584
14. Learning English with the use of technology help students acquire new knowledge more easily	1.5	0.58029
15. Technology tools used in classroom can engage students in learning English	1.62	0.83029

16. Electronic lectures are more interesting that the traditional lectures	1.92	1.00691
17. Students don't like the teacher's using technology to teach English in the classroom	4.06	1.13227
18. Using technology in the classroom increase student's interaction in learning English	1.64	0.87505
19. Technology can't help students in learning English	4.24	1.04119
20. Technology is very useful in learning English language	1.44	0.54060
Average	2.097	0.8362275

Based on the provided information, there are 20 statements analyzed using SPSS, yielding mean and standard deviation values for each statement. The average mean and standard deviation across all 20 statements are calculated as 2.097 and 0.8362275, respectively.

Among these statements, the statement "Technology can't help students in learning English" has the highest mean score of 4.24 and a standard deviation of 1.04119. Conversely, the statement "Learning English with the use of technology helps students acquire new knowledge more easily" has the lowest mean score of 1.5 and a standard deviation of 0.58029.

Discussion
Research Question 1
How do students perceive learning through technology?
The findings from the questionnaire administered to secondary school students in Petaling Jaya indicate a widespread belief among pupils that using technology for learning purposes is both simple and convenient. The overwhelmingly positive response to the questionnaires underscores how technology facilitates quick and straightforward access to information, accelerates learning processes, and offers engaging opportunities for students to practice and reinforce their knowledge. Moreover, technology provides entertaining avenues for learning, fostering deeper comprehension of complex concepts and paving the way for exploration in various fields, especially in STEM subjects. It is noteworthy that technology serves as a valuable tool both within and beyond the classroom, equipping students with essential 21st-century technical skills crucial for their future careers.

In a recent study by Kennedy and Dunn (2018), it was revealed that student participants expressed a desire for greater consistency in the integration of technology by their teachers. Specifically, they advocated for the incorporation of recorded lessons in English classes and the utilization of software capable of combining lecture slides with audio. Furthermore, students expressed a need for access to a wider range of resources and reading materials, as well as opportunities for interactive engagement with teachers and peers through technology. This underscores the potential for innovative applications of technology to facilitate easier and more effective learning experiences for students, enhancing their overall understanding and academic success.

The perception of students towards learning through technology is a crucial aspect that influences their engagement and learning outcomes. Research by Kennedy and Dunn (2018) revealed that students seek consistency in the use of technology by their teachers, emphasizing the importance of recorded lessons, software integration for lecture slides, and access to additional resources to enhance their learning experiences. This highlights the students' desire for technology to be seamlessly integrated into their learning environment to facilitate better understanding and engagement .

Moreover, the study by Naveh & Shelef (2020) emphasizes that students perceive technology as a learning tool rather than just an administrative tool. Students prefer technology that is easily accessible and user-friendly, indicating that simplicity plays a key role in successful technology implementation in higher education. This underscores the importance of designing educational technologies that are intuitive and appealing to students to enhance their learning experiences .

Furthermore, the research by Meisuri (2023) aims to deepen the understanding of the impact of the technology revolution in learning by focusing on students' perceptions and experiences. This study sheds light on how students perceive and adapt to technological advancements in education, providing valuable insights for effective implementation of teaching technologies in higher education .

Research Question 2
What is the student's attitude towards using technology used in the classroom?
The results obtained from the questionnaire suggest that a significant majority of students exhibit a positive attitude towards utilizing technology for language learning purposes. Most students are particularly receptive to the idea of employing technology as a tool for language acquisition. Learning a second language necessitates ample practice, active engagement, and constructive feedback. Technology facilitates this process by providing students with highly immersive and interactive learning experiences. Through technology, students can enhance their language skills while acquiring new information and demonstrating improved performance. In essence, student engagement encompasses the enthusiasm, involvement, and active participation of students in the learning process. Nguyen (2021) further underscores the importance of student engagement, emphasizing its role as a crucial form of collaboration within the learning environment. This collaboration should prioritize fostering connections between students and educators, peers, educational institutions, instructional methods, curricula, and educational programmes.

The positive attitude of students towards using technology in the classroom for language learning is crucial for enhancing their engagement and language acquisition process. Student participation is a vital aspect of collaboration within the learning environment, emphasizing the connections between students, educators, peers, institutions, and educational programs. This collaborative approach fosters a conducive learning atmosphere that promotes active student engagement and interaction with the learning materials (Fedorenko et al., 2021).

Furthermore, the integration of technology in language learning offers effective alternative methods, especially in response to challenges like the Covid-19 outbreak. The use of technology provides students with engaging and interactive experiences that facilitate quicker language acquisition by offering opportunities for practice, engagement, and feedback. This aligns with the idea that technology can enhance language learning by providing students with immersive and interactive learning experiences that promote skill development and performance improvement (Kawinkoonlasate, 2020).

Moreover, the influence of technology on educating English language learners plays a significant role in shaping student perceptions and learning outcomes. Technology tools not only aid in language acquisition but also impact student attitudes towards learning, thereby influencing their overall learning experience. By leveraging technology effectively, educators can create engaging and dynamic learning environments that cater to the diverse needs of students and enhance their language learning journey (Jiang et al., 2022).

Conclusion

In conclusion, the study revealed that students view technology as a valuable tool that simplifies and enhances the learning process by providing quick access to information and fostering deeper understanding through interactive and engaging methods. This finding aligns with previous studies that emphasize the importance of consistent and user-friendly technology integration in education. Additionally, students showed a positive attitude towards using technology for language learning, recognizing its role in providing immersive and interactive experiences that facilitate language acquisition. This positive perception is crucial for fostering engagement and improving learning outcomes.

The findings underscore the significant role of technology in enhancing educational experiences. By effectively integrating authentic materials with traditional textbooks, educators can create a more dynamic and engaging learning environment that meets the diverse needs of students. This approach not only enriches the curriculum but also prepares students with essential 21st-century skills, enhancing their overall academic success and future career readiness.

Moreover, the study highlighted that adopting online learning activities was well-received by students. They appreciated the user-friendly nature of online learning technology, which encouraged interaction with their lecturers and peers. However, students also noted difficulties stemming from poor online learning materials. To maximize student engagement and learning, course content and materials should be interesting and relevant. Since online courses heavily rely on autonomous learning, teachers should encourage students to embrace self-directed learning.

Recommendation for Further Research

Future research should focus on how specific technological tools cater to different learning styles and preferences, conducting longitudinal studies to evaluate the long-term effects of technology integration on student outcomes.

Acknowledgement

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