

Analyzing Language Learning Strategies: Effectiveness of Technology Enhanced Language Learning Strategies

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Abstrak

Penelitian ini bertujuan untuk menganalisis efektivitas strategi pembelajaran bahasa berbasis teknologi atau Technology Enhanced Language Learning (TELL) dalam meningkatkan kemampuan berbahasa peserta didik. Metode yang digunakan meliputi studi literatur, studi kasus, serta wawancara dengan mahasiswa untuk memperoleh data yang komprehensif terkait penggunaan teknologi dalam pembelajaran bahasa, khususnya di Pontianak, Indonesia. Hasil studi literatur menunjukkan bahwa TELL, yang memanfaatkan aplikasi digital, platform kolaboratif, pengenalan suara, konferensi video, dan simulasi virtual, mampu menciptakan lingkungan belajar yang lebih interaktif, personal, dan autentik. Selain itu, penerapan strategi TELL meningkatkan motivasi, keterlibatan, serta memberikan fleksibilitas dan akses ke sumber belajar digital yang beragam. Namun, efektivitas strategi ini sangat bergantung pada kesiapan guru, perencanaan implementasi, penyesuaian dengan konteks lokal, dan evaluasi berkelanjutan. Studi kasus dan wawancara menunjukkan bahwa meskipun siswa dan guru mengakui peran positif teknologi, masih terdapat tantangan terkait kesenjangan digital, pelatihan guru, metode evaluasi, dan adaptasi materi. Penelitian ini menyoroti pentingnya pendekatan kontekstual dan kolaboratif dalam implementasi TELL serta perlunya penelitian lanjutan untuk melihat efektivitas berbagai teknologi pada aspek keterampilan berbahasa yang spesifik. Temuan penelitian ini diharapkan menjadi acuan bagi pendidik dan pengambil kebijakan dalam mengoptimalkan pemanfaatan teknologi guna meningkatkan hasil pembelajaran bahasa di berbagai konteks pendidikan di Indonesia.

Kata Kunci: Pembelajaran Bahasa Berbasis Teknologi, Strategi Pembelajaran Bahasa, Motivasi Belajar dan Digitalisasi Pembelajaran.

Abstract

This study aims to analyze the effectiveness of Technology Enhanced Language Learning (TELL) strategies in improving learners' language proficiency. The employed methods include literature review, case studies, and interviews with students to gather comprehensive data concerning technology use in language learning, especially in Pontianak, Indonesia. Literature findings indicate that TELL, utilizing digital applications, collaborative platforms, speech recognition, video conferencing, and virtual simulations, creates a more interactive, personalized, and authentic learning environment. TELL implementation fosters greater motivation, engagement, learning flexibility, and access to diverse digital resources. However, its effectiveness is highly dependent on teacher preparation, planned implementation, adaptation to local contexts, and continuous evaluation. Case studies and interviews reveal that while teachers and students acknowledge the positive role of technology, challenges remain regarding the digital divide, teacher training, evaluation methods, and material adaptation. The study highlights the importance of contextual and collaborative approaches in TELL implementation and the necessity of further research to investigate the effectiveness of different technologies on specific language skills. The findings are expected to guide educators and policymakers in optimizing

technology-assisted language learning to enhance learning outcomes across different educational settings in Indonesia.

Keywords: *Technology-Enhanced Language Learning, Language Learning Strategies, TELL, Learning Motivation, Educational Innovation, Digital Learning.*

INTRODUCTION

Language learning strategies are specific actions or ways that learners take to make the language acquisition process easier, faster, and more effective, enjoyable, and independent. These strategies play a crucial role in guiding learners, aiming to create an optimal learning environment, stimulate motivation, and facilitate deep understanding of the language being learned. In general, language learning strategies also involve planning, implementation, and evaluation in the learning process so that the goal of language acquisition is achieved effectively and efficiently. By using the right language learning strategies, learners can become more independent and able to overcome various challenges, so that learning outcomes are maximized.

Strategies in learning are certainly desirable to facilitate and generate motivation in learning through various media, whether modern or not. One of the modern media for learning strategies is technology. Technology has brought many changes in language learning and has become something ecological and normalized, no longer just a support tool in the language classroom. As a result, language learning activities have changed rapidly and have largely changed by normalizing technology in everyday communication. The widespread use of technology such as mobile phones and easy access to bold resources requires learners to understand and use appropriate learning strategies for learning effectiveness, where their teachers are also capable and ready to teach these strategies as needed. Strategies that include strategies for language learning skill areas, language subsystems, and self-regulated learning.

By utilizing technology to build learning strategies, one important innovation in today's digital era is TELL (Technology-Enhanced Language Learning). This is an approach to language learning that utilizes digital technologies such as apps, collaborative platforms, speech recognition, video conferencing, and virtual simulations to support interactive language learning, transforming the traditional way of learning into a more dynamic, interactive, and effective way of helping learners achieve language proficiency more optimally. The objectives of TELL are to increase student motivation and engagement through more interactive and fun learning methods, such as game-based learning, provide flexibility to learn anytime and anywhere so that learners can manage the time and way of learning that suits their needs, facilitate easy access to diverse and authentic digital learning

resources by enriching the language learning experience, and support learner-centered learning by customizing materials and methods according to learner needs.

In an increasingly connected and globalized world, foreign language acquisition has become an indispensable skill for communication, cultural understanding and professional advancement. Traditional language learning methodologies, though fundamental, are constantly being re-evaluated in light of rapid advances in educational technology. The integration of technology into language classrooms and independent study has ushered in a new era of possibilities, offering innovative tools and resources that promise to enhance the learning experience and accelerate proficiency development. This “Technology-Based Language Learning” strategy covers a wide array of digital applications, platforms and methodologies, ranging from interactive multimedia programs and online collaborative environments to artificial intelligence-powered tutors and virtual reality simulations.

The theoretical basis of TELL strategies often aligns with constructivist and socio-cultural learning theories, emphasizing active engagement, personalized learning pathways, and authentic communication. Proponents argue that technology can provide instant feedback, expose learners to diverse linguistic input, foster autonomy, and create an immersive learning environment that mirrors real-world language use. However, despite the wide adoption and growing enthusiasm for TELL, a comprehensive understanding of the empirical effectiveness of various technology-based strategies remains crucial. Although anecdotal evidence and preliminary studies show promising results, rigorous and systematic investigations regarding which specific strategies produce the most significant improvements in different linguistic domains (e.g., listening, speaking, reading, writing, grammar, vocabulary) and for diverse learner profiles are still needed. This article aims to contribute to the ongoing discourse by critically examining the effectiveness of various technology-enhanced language learning strategies. Specifically, this article seeks to synthesize existing research, identify key trends, and evaluate the pedagogical implications of integrating technology into language education. By exploring the opportunities and challenges associated with TELL, this study seeks to provide valuable insights for educators, curriculum designers, and learners who wish to leverage technology to optimize language acquisition outcomes. Ultimately, this research is expected to inform best practices and guide future developments in the dynamic and evolving field of technology-based language learning.

Technology Enhanced Language Learning (TELL) strategies offer great potential, but their effectiveness depends on proper and planned implementation. A more detailed classification of TELL strategies, covering the type of technology used (e.g., mobile apps like Duolingo, online platforms like Coursera, or speech recognition software), the language skills targeted (listening, speaking, reading, writing), and the learning approach adopted (game-based learning, flipped learning), is

essential for a comprehensive analysis. Real case studies, such as the implementation of TELL in schools in Pontianak, West Kalimantan, as well as analysis of popular language learning applications in Indonesia, will provide a clearer picture of the strengths and weaknesses of various approaches. Furthermore, critical aspects such as the digital divide, teacher preparation and training in utilizing technology, valid and reliable evaluation methods, and adaptation of TELL strategies to local cultural contexts need to be considered. Integration of the latest research findings and utilization of local digital resources will enrich the understanding and improve the effectiveness of TELL strategies in the Indonesian context.

METHOD

The research methods used in this study include literature studies, case studies, and interviews with students. The literature study was conducted by collecting and analyzing various relevant literature sources to build a theoretical foundation and strengthen research arguments, as the first step in this study with the aim of collecting and analyzing various relevant literature sources. These sources include books, scientific journals, articles, research reports, and other academic documents related to the research topic. This process aims to build a strong theoretical foundation and strengthen research arguments through theoretical studies and previous findings. In addition, the literature study also serves to identify existing research gaps, so that this research can make new contributions in the field under study. Literature analysis is conducted critically and systematically, paying attention to the relevance, credibility, and context of the sources used. Furthermore, case studies are applied to examine in depth certain phenomena or events that are the focus of the research, by collecting data from various sources in order to obtain a comprehensive understanding as well. The case study method is applied to examine in depth certain phenomena or events that are the focus of the research. This approach allows researchers to gain a comprehensive understanding of the context, dynamics, and factors that influence the phenomenon. Case studies are conducted by collecting data from various sources, such as related documents, field observations, and supporting interviews, so that the data obtained is triangulated and strengthens the validity of the research results, providing a concrete and detailed picture that can be used to test theories or hypotheses that have been developed from literature studies. Thus, case studies become a bridge between theory and practice that provides deep insight into the reality under study.

In addition, interviews with students were conducted as a qualitative data collection method to obtain information, experiences, and views directly from respondents. The combination of these three methods allows the research to obtain valid and rich data, both in terms of theory and field practice. As a qualitative data collection method, interviews were conducted with students as the main

respondents in this research. The interviews aimed to obtain rich information about students' experiences, views, and perceptions regarding the phenomenon under study. The interview technique used is semi-structured, so that researchers can explore data in depth but still directed according to the research focus. The interview process was conducted with due regard to research ethics, including obtaining respondents' consent and maintaining data confidentiality.

The length of the method section is around 15-20% of the entire page.

FINDINGS AND DISCUSSION

Comparison of interview results of three sources on the use of technology in learning English:

- **Experience Using Technology**

Interviewee 1: Frequently, independently using YouTube, podcasts, learning apps.

Interviewee 2: Have used several AI and digital applications such as Canva, tom AI, Piktori AI, ChatGPT.

Interviewee 3: Frequently use translation applications such as google translate, deepl, other AI applications.

- **Perception of the Benefits of Technology**

Interviewee 1: It is very helpful for learning according to one's interests and pace, but still requires clarification from the teacher.

Interviewee 2: Technology greatly supports teacher innovation, makes learning more creative, facilitates material preparation, and increases classroom interactivity.

Interviewee 3: Technology greatly supports teacher innovation, makes learning more creative, facilitates material preparation, and increases classroom interactivity.

- **Type of Media/Application Used**

Interviewee 1: YouTube, podcasts, apps like Duolingo.

Interviewee 2: Canva, Tom AI, Painter AI, ChatGPT, Quizizz, Kahoot, WhatsApp Group.

Interviewee 3: Google Translate, ChatGPT, DeepL, Dictionary, Cici AI.

- **Impact on the Learning Process**

Interviewee 1: More interactive, varied, lots of visual, sound and interactive activities.

Interviewee 2: Help teachers prepare materials, increase learning resources, increase student motivation and participation.

Interviewee 3: Help with assignments, understanding grammar, and accessing difficult-to-understand material.

- **Barriers/Constraints**

Interviewee 1: Sometimes you need a direct explanation from the teacher.

Interviewee 2: Cost constraints (paid mode), need to update technological knowledge, additional preparation time.

Interviewee 3: The internet is not always stable, it can cause laziness and dependence on AI.

- **The Role of Teachers With the Presence of Technology**

Interviewee 1: It is still important for clarification and guidance.

Interviewee 2: Teachers remain essential for motivation, guiding values, and building character. Their role as facilitators and supervisors remains paramount.

Interviewee 3: Teachers are still important to accompany, even though access to materials is widely available online.

- **Suggestions/Developments**

Interviewee 1: Making technology easier and more suitable for learning habits.

Interviewee 2: Innovate materials according to student needs and department specifications, teachers must be creative and continue to learn new technologies.

Interviewee 3: The use of technology must be accompanied by learning motivation and must not make students completely dependent on technology.

This research examines the effectiveness of technology-enhanced language learning (TELL) strategies in the context of independent learning of learners, especially university students, through in-depth interviews with three interviewees. The results of this study reinforce the theories and findings in the introduction and literature review, which state that technology has great potential to increase motivation, independence, and effectiveness in language learning. However, the success of TELL integration is highly dependent on user readiness and other supporting factors such as access, infrastructure, and digital literacy.

All three interviewees reported that they had used technology independently without teacher guidance in the language learning process, showing that technology allows for learning autonomy. The most frequently used apps are Duolingo, YouTube, Google Translate and TikTok. They utilise interactive features such as quizzes, speaking exercises and voice recordings to support comprehension and pronunciation. This finding is in line with constructivism theory which states that learning will be more effective when students actively construct their own understanding through exploration and interaction with the digital environment (Piaget, 1976; Vygotsky, 1978).

In the context of motivation, the interviewees agreed that technology increases the enthusiasm for learning because it makes the learning process more fun, flexible and pressure-free. Apps such as Duolingo provide daily targets, reward systems and progress tracking, which encourage students to learn consistently. This finding supports Deci & Ryan's (2000) view that intrinsic motivation can be

enhanced through fun and challenging learning experiences. In addition, technology allows students to access authentic learning materials from various global sources, which enriches the learning context and accelerates foreign language comprehension (Chapelle, 2001).

In the development of listening and speaking skills, respondents stated that YouTube videos, podcasts, music, as well as pronunciation training features in learning apps are helpful. They also use AI-based chatbots or record their own voices to compare with native speakers' pronunciation. This practice is in line with the Technology-Enhanced Communicative Language Learning approach which emphasises the importance of authentic interaction and real linguistic input in the learning process (Warschauer & Healey, 1998).

Furthermore, the three interviewees also indicated that they have organised their study time with the help of technology. The reminder feature of the app, as well as the daily targets, help them to be consistent even outside the formal school environment. They usually spend 15 minutes to half an hour every day on language learning through apps and online media. This shows that TELL can strengthen self-regulated learning strategies, which is the ability of learners to plan, monitor and evaluate their own learning process.

But while respondents generally found technology to be helpful, they also revealed some pitfalls. These include limited internet connection, paid apps, and social media distractions. One respondent also recognised that self-learning can lead to boredom and lack of discipline. This reinforces Warschauer's (2004) argument on the importance of overcoming the digital divide and provides additional support in the utilisation of technology for language learning. In terms of vocabulary and grammar acquisition, interviewees mentioned that the features of adding new vocabulary, automatic grammar correction, and quizzes and games are very effective. Some apps such as Grammarly, Google Translate and digital dictionaries help them understand sentence structure and correct spelling. They are also helped in monitoring their language development through the tracking system available in apps such as Duolingo. The study also indicates that language learning technology not only improves cognitive aspects such as vocabulary and grammar mastery, but also has a significant positive impact on learners' affective aspects, such as increased self-confidence and sustainable motivation to learn. The improvement of independent speaking skills supported by the interactive features of the technology strengthens the effectiveness of personalised and adaptive language learning as needed. However, the successful utilisation of this technology requires continuous support in the form of teacher training so that they can optimally integrate technology into the learning process, so that technology and the role of educators can work synergistically.

In addition, technology expands learners' access to authentic learning resources from the global environment, which is essential in foreign language learning to build contextualised and

culturally relevant communicative competence. Nonetheless, challenges in terms of the digital divide and technical constraints such as the quality of internet connections remain the main obstacles that must be overcome for TELL to be implemented equitably and effectively in different regions. Therefore, technology-based language learning strategies need to be combined with policies that ensure equitable access and technical support as well as the development of digital literacy for both students and teachers to achieve maximum learning outcomes. Finally, all interviewees agreed that technology cannot completely replace the role of the teacher. While technology supports independence and provides

CONCLUSION

Based on the explanations in this article, we conclude that technology-enhanced language learning (TELL) strategies are proven to have a significant positive impact in increasing motivation, independence, and effectiveness of language learning, especially among university students. Recent research and meta-analysis confirm that the use of technology in language learning consistently has a significant positive impact on the achievement of various language skills, such as speaking, listening, reading, writing, vocabulary, and grammar. Motivation and Engagement: Technology has been shown to increase learner motivation, engagement and confidence. Features such as game-based learning, progress tracking and digital rewards trigger more consistent and enjoyable learning, helping to create a more personalized and meaningful learning experience.

Technology-enhanced language learning (TELL) strategies have proven to have a significant positive impact on increasing motivation, independence, and effectiveness of language learning, especially among university students, through the use of applications such as Duolingo, YouTube, Google Translate, and social media that support independent, interactive learning and access to authentic materials. Authentic and Flexible Learning: Learners benefit from access to authentic materials and global resources, which broaden the learning context and facilitate cross-cultural interaction. Technology also supports flexibility, allowing learning to take place anytime and anywhere according to individual needs. These positive effects are even more evident in the use of apps that are interactive and based on immediate feedback.

The use of apps such as Duolingo, YouTube, Google Translate and social media helps learners learn independently, achieve a more interactive learning experience and expand access to authentic materials. TELL also supports the development of language skills including listening, speaking, reading, writing, and vocabulary and grammar acquisition through interactive features, speaking practice, and immediate feedback. While the benefits of TELL are immense, several key challenges such as the digital divide, issues with access to devices and internet connections, and low levels of

digital literacy, stand in the way of equitable implementation. In addition, the risks of distraction, over-reliance on technology, and inadequate quality of digital content also need to be anticipated. The role of teachers and system support is also a key enabler. The success of technology-based language learning depends largely on the readiness of educators and the education system to provide training, guidance and technical support. Teachers still play a crucial role as facilitators, guarantors of material relevance, and providers of contextual feedback that cannot be fully replaced by technology. In conclusion, technology-based language learning strategies are effective if they are implemented in a planned, adaptive manner, and take into account the local context and individual needs in order to create a maximum and equitable learning experience.

Implementation Recommendations To achieve maximum results, TELL integration requires strategic planning including equal access, teacher training, adaptation of materials to local contexts, and development of digital literacy. Collaboration between the government, educational institutions, and technology providers is essential to overcome challenges and maximize the benefits of TELL in an inclusive and sustainable manner.

By paying attention to the above aspects, technology-based language learning strategies are not only effective and adaptive, but also capable of being an innovative solution to the challenges of language education in the current and future digital era, and with planned, adaptive, and contextualized implementation according to local and individual needs, TELL strategies have great potential to be an innovative solution to the challenges of language learning in the digital era so as to create a maximized, equitable, and sustainable learning experience.

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