Harnessing the Power of Technology in ELT

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Abstract

The aim of this paper is to delve deeper into the pivotal role that technology plays in the enhancement of second language (L2) learning, and more specifically, how technology can propel or even fast track L2 proficiency. Drawing upon insights from educational research and English Language Teaching (ELT) resources and practices, this paper aims to illuminate the multifaceted ways in which technology is reshaping the landscape of language education. The paper begins by discussing the advantages of using technology to enhance language learning. It suggests that while these benefits are valuable, it is crucial for ELT professionals to investigate whether relying solely on these benefits can actually enhance students' language proficiency. The next part of the paper looks into a set of widely accepted principles related to second language acquisition. It then proposes how these principles can serve as a foundation for creating tech-enhanced language lessons that can potentially propel students' proficiency development. The paper concludes that technology can and should be used to engage students more actively in their English language learning process.

Keywords: ELT, technology-enhanced language learning, language proficiency development, AI-powered tools

In today's rapidly evolving educational landscape, technology has become an indispensable component of language instruction. The integration of technology into the English Language Teaching (ELT) classroom, for example, has ushered in a new era of language learning, allowing teachers to explore innovative pedagogical approaches that can potentially improve the quality of their teaching. The aim of this paper is to delve deeply into the pivotal role that technology plays in the enhancement of second language (L2) learning, and more specifically, how technology can accelerate L2 proficiency. Drawing upon insights derived not only from educational research but also from ELT resources and practices, this exploration seeks to shed light on the multifaceted ways in which technology has shaped and will continue to do so in the future.

Impact of Technology on Language Learning

Modern classrooms are equipped with a diverse array of technological tools and resources that have changed the dynamics of language instruction. Educators have embraced this digital technology to engage students effectively, monitor their progress, and enhance overall learning outcomes. One noteworthy development in recent years is the integration of Artificial Intelligence (AI)-powered tools, which offer personalized teaching materials, automated feedback, and tailored instruction, further augmenting the impact of technology in language education.

The impact of incorporating technology into language instruction is currently the subject of intensive scrutiny by educational researchers and particularly ELT specialists (e.g., Bernacki et al., 2020; Kessler, 2023; Zhao & Lai, 2023). Some have examined the impact of technology on classroom dynamics (e.g., how technology can increase the quantity and quality student participation), levels of student motivation, access to authentic language learning tasks and access to more interesting and comprehensible language. While research findings are far from being conclusive, most experts seem to agree that tech-enabled instruction can bring about numerous benefits.

Listed below are some of the benefits that have been reported in the professional literature (e.g., Hamilton, 2022).

1. Reducing Teacher Workload and Improving Teaching Quality: Technology allows educators to automate administrative tasks, enabling them to focus more on delivering high-quality instruction. For example, instead of taking attendance manually, teachers can use digital attendance systems available in learning management system (LMS) such as *Google Classroom*, *Canvas*, *Blackboard*, *Moodle*, etc. that record and track students' presence or absence. Moreover, features such as grade books embedded into these platforms make it easy for teachers to assign, grade, organise, and provide feedback to assignment and assessment tasks. The attendance and assessment data can then be easily shared with parents and school personnel. This way, teachers can focus more on teaching and interacting with their students.

2. Increasing Student Motivation and Interest: Technology-based activities are inherently captivating for students, as they align with digital natives' preferences. Students, for example, usually find multimodal teaching materials more interesting than the traditional printed text. The use of game-like learning apps such as *Kahoot*, *Quizlet*, *Quizizz*, and *Mentimeter* can make classroom environments more lively. Thus, tech-induced engagement can translate into heightened motivation and a more enjoyable language learning experience.

3. Promoting Student Participation Through Interactive Tools: Interactive resources encourage active involvement, which, in turn, fosters student engagement and facilitates better comprehension and retention of language concepts. Popular tech tools such as *Padlet*, *Mentimeter*, *Poll Everywhere*, and other similar multimedia supported engagement tools, for example, can help create a more active classroom learning environment where students can freely share their thoughts and ideas before the lesson proper begins, during the lesson itself or after the lesson has finished. In addition, interactive slides developed using *Peardeck*, *Nearpod*, *Slidesgo*, and *Genial.ly* can engage learners during class instead of letting them watch the teacher giving presentation.

4. Offering Personalized Instruction: With technology, teachers can create customized texts and tasks tailored to individual students' learning needs. This personalized approach ensures that students receive targeted instruction which is well-aligned with their proficiency levels, learning pace and preferred learning modes. Teachers who employ differentiated instruction methods can leverage on AI-powered tools (e.g., twee https://twee.com/ and https://mylessonpal.com/) to plan, deliver and assess student learning.

5. Providing Customized Feedback for Improvement: AI-powered tools can assess and provide immediate feedback on student work, allowing for targeted improvements and individualized support. This real-time feedback mechanism accelerates language acquisition and proficiency development. Some of the more popular language correction tools are *grammarly* https://www.grammarly.com/ and *PaperRater* https://www.paperrater.com/. Similarly, speech analyser and coach apps such as *Stimuler* and *ELSA Speak* help learners improve their pronunciation, intonation, vocabulary, grammar, and fluency.

6. Fostering Learner Autonomy: Technology empowers students to take ownership of their learning journey. Learner autonomy is a cornerstone of ELT and TESOL, and technology facilitates independent exploration of language resources and self-directed study, nurturing students' ability to become self-directed language learners. For example, there is strong evidence showing that students who engage in self-directed learning beyond the classroom learn substantially more knowledge and skills than those who limit themselves to classroom learning (Nunan & Richards, 2015).

7. Enhancing Collaboration and Communication: Digital platforms enable effective communication and collaboration among students. Collaborative online projects and peer interactions through virtual platforms create a dynamic and interactive learning environment which can mirrors real-world language use scenarios. In addition, thoughtful use of digital platforms can improve students' digital literacy skills allowing them to navigate and create texts using a variety of media (e.g., Instagram, Blogs, Vlogs, Podcasts and Video streaming platforms).

8. Nurturing Creativity and Critical Thinking: Language teachers and learners might benefit from technology when they are stuck in areas where they are unable to flourish, such as inadequate creative inventiveness, poor problem-solving abilities, and an inability to build conceptual connections or generate ideas. AI-powered co-creative tools such as *Canva*, *ComicMaker.ai*, *Designrr*, and *appypie design* offer artistic design suggestions and templates to teachers and learners for task and project completion, allowing them to produce more meaningful language output by engaging in real-world language use while creating projects, performing tasks, and solving problems. *ChatGPT*, *Bard*, *Bing*, and other similar generative AI-powered technologies may aid individuals in co-creating ideas and making connections of ideas and concepts.

9. Access to Authentic Language Resources and Cultural Materials: Technology provides unprecedented access to authentic language resources and cultural materials from around the world. This exposure enriches students' understanding of the language and its cultural context, aligning with the principles of teaching English as an International Language (EIL). One of the key EIL principles states that students need to develop their intercultural competence so that they can engage in socially and culturally appropriate exchanges with socially and culturally diverse users of English (Alsagoff et al., 2012). Another important EIL principle relates to the importance of familiarizing students with a wider variety of English spoken in the world today. Technology allows students to sample different varieties of English such as Singapore English, Malaysian English and Filipino English, sensitizing them to different ways English is spoken in the world.

10. Access to Language Models and Conversational Partners: Technology allows language teachers and learners to generate target language input using generative AI and conversational AI chatbots. Current Text-to-Speech (TTS) technology, such as *Speechify* and *11Labs*, is sophisticated enough to generate natural spoken language from written text, making it possible for language teachers and students to generate language models for language learning. Similarly, Speech-to-Text (STT) applications, such as *Amazon Transcribe*, *Microsoft Azure*, *IBM Watson*,

and *Voice Notebook*, may assist them in converting spoken text to transcripts, allowing language learners to comprehend authentic spoken texts that may otherwise be too difficult to comprehend. More sophisticated STT apps such as audiopen.ai can transform rough speech notes to more polished written texts. Conversational chatbots for language learning (e.g., *TalkPal*, *Languate*, *Soofty*, etc.) and voice-based AI personal assistants, such as Siri, *Google Assistant*, *Amazon Alexa*, *Cortana*, *Bixby* and similar apps can be used as conversational partners.

11. Access to Machine Translation and Dictionaries Language teachers and learners now have access to powerful machine translation and dictionary resources. AI-powered translation technologies, such as *Google Translate* and *DeepL*, have advanced to the point where they can deliver relatively accurate translations across various languages, assisting learners in better comprehending and interpreting content. Furthermore, AI-powered dictionaries that combine content of standard dictionaries and online databases, such as *Englia* and *tl;dr*, provide detailed definitions, synonyms, examples, as well as personal vocabulary list and flashcards assisting language learners in expanding their vocabulary. These AI-powered language tools supplement traditional learning techniques and enable users to more efficiently explore and comprehend the complexities of languages.

Impact of Technology on L2 Proficiency

While the advantages of technology integration in language learning are evident, it is essential to explore further whether these practices *alone* can propel L2 students to higher language proficiency levels. In other words, we need to ask if there is strong empirical and/or experiential evidence that unambiguously show the direct effect of technology integration on students' English proficiency development. More specifically, we need to ask if technology integration can actually improve our students' vocabulary and grammar knowledge and skills? Can it improve our students' reading, listening, speaking and writing skills? Can it improve students' ability to use the target language for a variety of social and academic purposes?

Answers to the questions above are of crucial importance to English language teachers whose main job is to help their students develop a working level (if not higher) of proficiency in the target language. Making classroom learning more interesting and motivating is a good thing; having students work collaboratively in a digital environment is also a welcome feature of a tech-enhanced classroom learning. But these alone do not necessarily improve our students' language proficiency, that is, they don't directly contribute to students' improvement from, say, A1 to A2 or A2 to B1.

Researchers have indeed begun to investigate the questions above, seeking empirical evidence to substantiate the relationship between technology use and proficiency development. One large scale meta-analysis study examined the effect of technology use on foreign language learning (Golonka et al., 2014). The researchers analyzed some 350 empirical studies that compared traditional language teaching methods with tech-enhanced teaching methods. Despite the promulgation of the positive impact of technology, the results of their analysis are rather disappointing. In their words:

> The review of over 350 studies (including classroom-based technologies, individual study tools, network-based social computing, and mobile and portable devices) revealed that, in spite of an abundance of publications available on the topic of technology use in FL [=foreign language] learning and teaching, evidence of efficacy is limited.
>
> (Golonka et al., 2014, p. 70)

The table below highlights the most relevant results of Golonka et al.'s (2014, pp. 89-90) review of the impact of technology on language acquisition.

Table 1
Evidence of the Impact of Technology on Language Learning

	Expected language learning outcomes	Evidence
1.	Enhanced pronunciation	Strong
2.	Increased output	Strong
3.	Enhanced accuracy of speech	Weak
4.	Enhanced grammatical knowledge and awareness	Weak
5.	Enhanced input & comprehension	Weak
6.	Enhanced learning enjoyment	Weak
7.	Enhanced metacognition	Weak
8.	Enhanced vocabulary learning	Weak to Moderate
9.	Enhanced feedback	Weak to Moderate

As can be seen from Table 1, technology has some, albeit, limited impact on language proficiency development. One area where technology's impact on language learning is particularly evident is in pronunciation skills. Technology can provide targeted practice in the phonological aspects of language learning, which is crucial for achieving clear and accurate pronunciation. This is perhaps not surprising. Pronunciation, being a relatively less complex aspect of language acquisition, benefits more prominently from technology integration.

There are several apps for Automatic Speech Recognition (ASR), speech analysis, and speech coach. Many of them, such as *Pronunoid*, *Speakit*, *English Pronunciation*, and *Quick Pronunciation Tool*, are exclusively accessible for Android users. Many more, such as *Say It: English Pronunciation*, *Sounds: Pronunciation App*, *Stimuler*, and *ELSA Speak*, are available to Android and iOS users. Some, like *iFLYTEK Pronunciation Assessment* and *Pronounce*, are web-based pronunciation programs. These applications' most beneficial features are pronunciation lessons or training and voice recognition feedback,

which may assist learners with pronunciation examples, practise, and accuracy. For instance, users can record their voice and receive feedback on the accuracy of their pronunciation. In addition, Developers of pronunciation apps often integrate multimedia to assist learners with visualisations of sounds and sound creation.

Another area of language acquisition that benefits a great deal from the integration of technology, as reported by Golonka et al. (2014) relates to increased amount of language use. Easy-to-use tech tools such as *Padlet, Flipgrid* and *Wakelet* can encourage students to engage with the target language more frequently, whether through written assignments, online discussions, or project work. One possible reason is that students feel less inhibited when working in digital environments and are more willing to use whatever limited linguistic resources they have at their disposal to share and exchange ideas with their teachers and classmates.

While increased language use by students is a welcome feature of a good language lesson, especially in places where teacher talk dominates classroom discourse, further empirical evidence is needed to establish a direct link between increased language use and noticeable proficiency development (#). The findings from Golonka et al.'s (2014) research however do not allow us to draw such a conclusion. As can be seen in Table 1, accuracy in speech production in tech-enhanced classrooms remains a challenge, with students reporting that their grammatical knowledge remained unchanged. In other words, they may develop some fluency in language use but their speech remains unflattering?.

It is reasonable to postulate that students can make substantial progress in enhancing their grammar and speech accuracy when they are consistently exposed to captivating and understandable language on a daily basis (Renandya & Day, 2020). Regular exposure to meaningful language allows students to encounter essential grammatical features multiple times. Through repeated encounters with essential grammatical elements, students can gradually internalize these linguistic structures, enabling them to incorporate them into both their spoken communication and written expression. The data from Golonka et al. (2014) however

show that evidence for enhanced input and comprehension is weak, which means that many of the tech-enhanced studies reviewed by Golonka et al. (2014) paid little attention to this important aspect of language acquisition.

From the above discussion, it becomes evident that language educators and technology developers should place a greater emphasis on ensuring that the language input students receive is both multimodally appealing and linguistically accessible. By prioritizing the delivery of interesting and comprehensible language content, educators and technology designers can maximize the potential for students to acquire and master the intricacies of grammar and speech, which can in turn lead to more effective language acquisition outcomes.

In the following section, we delve into well-established principles of second language acquisition. These principles have been gleaned from extensive second language acquisition research spanning decades, shedding light on the intricacies of acquiring a second language and the most effective methods for its instruction within the language classroom. We shall illustrate how each of these principles can form the basis for the integration of technology in the language classroom.

Aligning Technology Use with Second Language Acquisition (SLA) Principles

To truly understand the impact of technology-enhanced language learning on proficiency development, it is crucial to align technology usage with key Second Language Acquisition (SLA) principles. One widely accepted set of principles that can serve as a guiding beacon in this endeavor is Paul Nation's Four Strands, which encompasses input-based learning, language-focused learning, output-based learning, and fluency development (Nation, 2017, 2023).

According to Nation (2023), each of the four strands should be given roughly the same amount of time in a balanced second language learning programme. In other words, a quarter of curriculum time should be devoted to each of the four strands. Nation however hastened to say that the suggested time allocation is based on good practices rather than empirical research findings. Teachers are encouraged to use their

informed judgement to decide whether they should give more or less time on the strands. We agree with Nation that in certain L2 contexts, where one strand is notably lacking, such as a lack of meaning-focused input or meaning-focused output, teachers should allocate additional instructional time to strengthen that particular strand.

Input-Focused Learning

The principle of input-focused learning is well-supported by a language acquisition theory known as the Comprehensible Input (now renamed as the Optimal Input) hypothesis (Krashen, 1989; Krashen & Mason, 2020). According to Krashen, second language acquisition is greatly facilitated when students learn a second language in an immersive environment. Put simply, students can advance in their language acquisition by regularly immersing themselves in understandable and captivating materials in the target language through listening and reading.

It is worth mentioning that not everyone agrees with Krashen; indeed, a number of researchers have expressed their concerns about Krashen's theory (e.g., Scarcella & Perkins, 1987). A recent re-assessment of his input theory by two respectable SLA researchers, however, shows that his idea is fundamentally sound from both theoretical and empirical perspectives (Lichtman & VanPatten, 2021).

The question for us then is this: How can technology support meaning-focused input learning? Unlike several decades ago where limited language input was available in print format, today language learners can access large amounts of print as well as digital materials. The Internet, in particular, offers students abundant language learning resources, such as written texts, audio recordings, and videos, that can be accessed anytime and from anywhere. More importantly perhaps, these resources are available at little or no cost. Listed below are some free online resources that offer plentiful reading and listening materials:

- Let's read Asia: https://www.letsreadasia.org/
- Storyline online: https://storylineonline.net/
- ER Central: https://www.er-central.com/

In addition to providing access to a plentiful supply of meaningful and authentic learning material, technology also enables the production and customization of personalised language learning input in both written and spoken modes. TTS and STT applications can generate voice from written text and vice versa. The applications for generating language input can be adjusted to certain proficiency levels of learners. Ebook, presentation, audio, and video creator and editing software can be used to generate multimedia content for language learning that employs several channels of information to enhance understanding and make language input more comprehensible. By exposing learners to language input that is at or slightly beyond their current proficiency level, digital texts can facilitate gradual language acquisition and comprehension improvement.

Fluency Development

Language fluency can be defined as the ability to comprehend and produce language quickly and easily. In most language programmes, fluency is a key goal in language learning as students are typically expected to be able to understand and produce spoken and written language effortlessly. It is important to note that fluency development takes time. In order for students to read a variety of texts fluently, they will need to engage in daily reading activities for an extended period of time. The same is true for the other language skills such as listening, speaking and writing. Extended practice exercises are needed to become fluent listeners, eloquent speakers and skilled writers.

When designing fluency activities, teachers should take note of the following guidelines (Nation, 1996):

1. Students work with familiar, previously learned language elements. This is important as the focus here is to help students develop greater facility in using previously learned grammar or vocabulary items.

2. The activities should be meaning-focused, not language-focused. Meaning-focused fluency activities are by definition more appealing, thus allowing students to do repeated practice in an enjoyable manner.

3. The activities should push learners to do the same task at an increasingly higher level of performance. For example, students can

talk about a topic 2 or three times, but each time they should do it at a faster rate and/or with less hesitation.

Can teachers' leverage of technology give students fluency practice? The past few years have seen a proliferation of tech-tools, including AI-powered tools that can help teachers in this regard. Indeed, simple, easy-to-use tech tools are widely available learners to engage in real-time conversations, language games, and simulations. Examples of such tech tools are described below.

Language learning conversational chatbots (e.g., *TalkPal, Languate, Soofty*, *ZenoChat*, and others) can be utilised as real-time conversational partners. They offer a range of personas for learners to interact with as well as a variety of language learning topics because they are designed exclusively for language learners. Learners can utilise *Siri*, *Google Assistant*, *Amazon Alexa*, *Cortana*, *Bixby*, and other similar applications to chat on a variety of topics with a single voice-based AI personal assistant. One can also consider employing Generative AI Chatbots such as *ChatGPT*, *Bing*, and *Bard* to simulate conversational partners for learners, enabling them to engage in discussions or work together on meaningful language tasks such as creating a short story.

Language-Focused Learning

Nation's Language-focused learning strand emphasizes the importance of explicit language instruction and understanding grammar rules and vocabulary in the process of language acquisition. This strand focuses on structured language learning, including pronunciation, vocabulary and grammar lessons and exercises designed to enhance learners' understanding of the language's structure and rules. It complements the first two strands above by directing students' attention to important language features when processing language input. This in turn enables students to express their thoughts and opinions with clear and acceptable pronunciation, well-chosen vocabulary words and greater grammatical accuracy.

Technology offers a platform for delivering structured language lessons, interactive grammar exercises, and vocabulary drills. By utilizing

technology for language-focused learning, teachers can address specific language challenges faced by their students.

Many language learning websites available on the internet, such as *BBC Learning English, British Council LearnEnglish, Breaking News English, ManyThings.org,* to name a few, are aimed to provide language learners with explicit grammar and vocabulary instruction, as well as listening and reading comprehension practice. The majority of the activities on these websites can also be found in mobile language learning applications, with some gamification components added in the form of a variety of games, level completion challenges, and points or badges rewards to make learning more enjoyable and engaging. Mobile language learning applications such as *Rosetta Stone, Duolingo, Busuu*, and *Mondly* that focus on grammar and vocabulary learning also allow learners to set their own learning goals and send frequent reminders to motivate them to practice or achieve their learning objectives.

Output-Focused Learning

The thinking behind output-based learning is based on the observation that the first three strands alone may not be sufficient to improve students' overall language development. Output-based activities, such as speaking and writing tasks, offer students chances to use the language they have learned in real-life situations. These activities not only allow them to practice what they have learned but also enable them to receive feedback from others who speak the language. This feedback helps students improve their language skills by helping them identify and correct mistakes in their speech or writing. In short, this strand further supports students' proficiency growth as they learn how to navigate the intricacies of exchanging ideas with their communication partners. When speaking to others, for example, students learn how to use a wide range of communication strategies to convey meanings, to share their thoughts and express their feelings in ways that are socially and culturally appropriate.

Technology can support output-based learning by providing opportunities for students to engage in role plays, simulations and discussions, write essays, record speeches, and participate in language

exchange programs or virtual language immersion experiences. Instant messaging apps (e.g., Whatsapp, Telegram, Discord, Kakao Talk, WeChat, Messenger, etc.) and video conferencing apps (e.g., Zoom, Google Meet, Microsoft Team, GoToMeeting, etc.) that mediates learners in performing language learning tasks such as conducting and listening to presentations, role playing, conducting discussions and engaging in collaborative tasks are among the most widely used apps for language learning.

Language learners can also use technology to compose or make recorded speeches that are automatically assessed and commented on by AI. Websites such as the University of Cambridge's *Speak & Improve* and *Write & Improve* are capable of assessing learners' speech and composition based on the CEFR Framework. Grammar checker websites like *Grammarly*, *ProWritingAid*, and *Microsoft Editor* offer intelligent writing aid by providing comments on grammar, spelling, diction, clarity, conciseness, and register that students may utilise to enhance the accuracy and quality of their work. Language exchange websites, such as *Conversation Exchange* and *Easy Language Exchange*, enable language learners to virtually meet and interact with native speakers and other "capable" learners of their choice who can assist them in learning the target language. Furthermore, websites such as *Papora* and *LingoGlobe* provide learners with forums and chat rooms where they can participate in impromptu conversations.

In summary, by utilizing technology to engage students in these four essential strands of language learning, teachers can maximize its potential for meaningful progress and effective learning outcomes. Technology, when strategically integrated into language instruction, complements these SLA principles and accelerates the journey towards language proficiency.

Conclusions

Technology has undeniably revolutionized language classrooms, providing teachers with powerful tools to create engaging, personalized, and effective learning experiences. However, while the advantages of technology integration are apparent, the journey towards establishing

a direct impact on language proficiency development is ongoing. Researchers, educators, and stakeholders in ELT and TESOL continue to explore this dynamic intersection, seeking to bridge the gap between technology use and proficiency gains.

Empirical evidence plays a pivotal role in this ongoing dialogue. Rigorous research studies that measure the impact of technology on language proficiency are essential to validate the effectiveness of various technological tools and approaches. These studies should encompass diverse learner populations, proficiency levels, and language learning contexts to provide a comprehensive understanding of technology's role in language education. Moreover, educators must remain agile and adaptable, continually refining their strategies to align with the evolving landscape of technology-enhanced language learning. As technology evolves, so should teaching methods and materials to harness its potential fully.

By aligning technology usage with SLA principles, educators can harness the potential of technology to facilitate significant progress and meaningful learning outcomes for students on their language learning journey. While the quest for empirical evidence continues, the transformational impact of technology in the field of ELT and TESOL continues to offer exciting possibilities for the future of language education. The ongoing synergy between pedagogy and technology holds the promise of advancing L2 learners' language proficiency development to new heights.

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