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An Appraisal of the Use of Technology in the Acquisition of English as a Second Language

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Abstract

The study provides an overview of the utilization of technology in Second Language Acquisition (SLA), particularly focusing on the use of Artificial Intelligence (AI), Digital Technologies (AR/VR), and other applications (Apps) and online resources. It examines their incorporation, benefits, and challenges to project future directions. As the research reveals, English is spoken as a second language in many parts of the world, and technology has been crucial to enhancing knowledge through a learner-centered approach, though not without some psychological, environmental, ethical, and pedagogical concerns and challenges. Utilizing a review research design and drawing from existing studies, this paper discusses various technological tools, their current use in SLA, and future directions. It recommends involving English experts in the development of technological tools for better outcomes, and that governments should facilitate and enforce technology-driven education, incorporating it into national language policy on education. It concludes that learners, especially teenagers and young adults, should be guided on the use of technology in SLA, aiming for competence in language use. It establishes that the advent of technology has revolutionized Second Language Acquisition, and its integration in SLA has offered unparalleled opportunities for language learning and instruction.

Keywords: Second Language Acquisition, Technology-enhanced learning, Artificial Intelligence, Digital technologies, English language.

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Introduction

Technology has proliferated in all spheres of human endeavours, and its use in second language acquisition (SLA) has become increasingly prevalent in recent years. It is transforming how language learners access information, develop language skills, and interact with others. Of a truth, the introduction of new technologies into teaching and learning experiences provides great flexibility for accommodating students of varying learning styles and educational demands, especially with the new generation of digital native students already in the classroom (Parker, 2021). As opined by McDaniel (2014), be it formal or informal, technological tools could be employed to synchronise learning spaces for optimal learning experience, via adaptations to transcend physical, simulated, and extended reality experiences.

The incorporation of technology into traditional education has been praised for its enhancement of learning experiences, which are considered to be so close to real-life experiences, tangible enough to immerse the learner into reality, help educators, and improve the quality of education (López-Belmonte, et al. 2022). Notwithstanding, Lampropoulos, et al. (2021) aver that the interests, preferences, abilities, capabilities, personality, and knowledge of learners should be considered when designing technology-enhanced learning activities. This implies that the technological tools should factor the learners in while being developed by experts, to enable a learner-centred learning.

English Language and Second Language Acquisition

Language as a non-material aspect of culture is highly important in any society. It is the means through which ideas, thoughts, feelings, etc. are communicated. According to Bloom (2003:4),

> Language is the preeminent mode of expression provided in society to embody and make public what is otherwise internal and private to the individual- the beliefs, desires, and feelings we have that are our intentional state. Language makes these contents of mind public, in an expression, so that other persons can know them.

Bloom's definition establishes the fact that language serves a communicative function, aside from other functions. Language has been categorized by linguistsbased on the status attained and the social functions performed (Holmes 2013). The status ranges from the language being a mother tongue, official language, first language, second language, foreign language, to trade language, and others. Culpepper(2000) asserts that English has gone global. This justifieshow English has attained the status of a global language, and this status has been accepted wider world. This is due to the special role(s) it has taken up in different countries of the world. In some countries like Britain, the USA, Ireland, Canada, Australia, New Zealand, South Africa, and some Caribbean countries, English is spoken by a large number of people as their mother tongue. Aside from being a mother tongue, it has been made the official language of some countries, being utilised in government, legal, media, and educational systems. This is evident in countries like India, Singapore, Ghana, and Nigeria, for instance. English is now the language most widely taught as a foreign language in over 100 countries, such as China, Russia, Germany, Spain, Egypt, and Brazil.

Graddol (1997) explainsthat English is the global lingua franca of international banking, trade and economic affairs, international law, international tourism, tertiary education, etc. Similarly, Culpeper (2000:75) establishes that presently, English has dominated the world stage in diverse language uses: it is the main language of commerce, science, technology, publishing, diplomacy, air traffic control, and popular music. This stance is in tandem with Holmes' (2013) view that Standard English serves as a useful variety for communication between areas of dialect diversity, not only within Britain, but also in countries where the British have had a colonial influence. She further asserts that local varieties of English have developed in many multilingual countries such as Malaysia, Singapore, Hong Kong, India, and many African countries, where English has served as a valuable language of wider communication in a multilingual context. Today, there are over 300 million native speakers of English. Today, about 300 million people regularly speak English as a second language (i.e., in addition to their native language). The choice of English language for these roles includes historical tradition, political expediency, and the desire for commercial, cultural, or technological contact. And Crystal (2003) submits that English is the official language for 85% of about 12,500 international organisations; and that across the globe, it is mostly taught as either a second language or a foreign language.

Second language presupposes the existence of a first language. A first language refers to the language that a child acquires after birth, also called the mother tongue (MT). It can be the parents' language or the language of the immediate environment. Second language, therefore, is used to refer to a language learned extensively in addition to the first language by a bi/multilingual. It is the language learnt or acquired sequentially after the first language. Varieties which are typically used by those for whom English is a second language have been labelled by Braj Kachru as outer-circle varieties of English so as to differentiate them from varieties used by native speakers or inner-circle varieties. Kachru also identifiesan expanding circle of those who were learning English as an additional, adjunct, or foreign language for a wide range of reasons, such as trade or access to higher education, as in China or Japan. English is a foreign language in the expanding circle, serving no crucial communication functions within a country. Globalisation means there are now many more speakers of English in the outer and expanding circles than in the inner circle, especially with English as the global language of the internet and computer-mediated communication (Holes, 2013).

Cook (1991) emphasizes that the acquisition of English as a second language is essential and useful in the present circumstances. The English language, therefore, has dominated different societies in varying activities. It stands significant in pursuing academic degrees (Ogunsiji&Olaseinde, 2018); and some institutions test the proficiency of English language use (TOEFL, IELTS, etc.) for prospective students before offering them admissions. Learning and acquisition are terms that have come to be used when talking about language. While some scholars aver that the first language is acquired, but a second language is learnt, some others posit that while the first language is acquired, a second language can be equally acquired. Whichever the position, Second Language Acquisition (SLA) has become the adapted concept for learners working on using a second language after the first.

Yule (2010) differentiates between acquisition and learning, stating that acquisition implies "a gradual development of ability in a language by using it naturally in communicative situations with others who know the language", while learning "applies to a more conscious process of accumulating knowledge of the features, such as vocabulary and grammar, of a language, typically in an institutional setting". English has attained the status of being acquired as a second language in numerous societies; this further necessitates its continual learning and teaching. ForAdebileje& Akinola (2020) who researched the language teaching and learning theories in a bid to consider evolving and appropriate approaches and methods for effective teaching and learning process in Nigeria, assert that traditional approaches to teaching English may provide foundational knowledge for learners, they often do not address the situational and current (educational) needs of students. They highlight the fact that the current hi-tech age has provided better approaches that could enhance teaching and motivate learning in the ESL classroom.This is the crux of the current study, to examine the incorporation of technology in SLA, noting its benefits, challenges and future directions in enhancing learning experiences.

Technology-Enhanced Second Language Learning

Raja, and Nagasubramani (2018) assert that after the gift of life, technology is the next greatest gift of God. They consider it the mother of civilisations, arts, and sciences. Technological improvements in education have lessened students' burdens and eased their lives, from using pen and paper, a stack of notebooks, to using a variety of software and tools and iPads. (Haleem, et. al, 2022). Incorporating the use of smartboards, mobile devices, laptops, tablets, dynamic visualisations, etc. has improved the outlook of education in most institutions.The Internet of Things (IoT) has been proven to be one of the most cost-effective methods of educating young minds (ibid). Learning or acquiring English as a second language has been made easy through the affordances of technology. The multimedia language of the screen enables modes of thought, ways of communication, and conducting research, and methods of publication and teaching that are essentially different from those of text.The integration of the new technology into the experience of English education is quite interesting, and it creates an appealing learning environment for students. The coming sections will examine some of the aspects of technology adapted in SLA.

Artificial Intelligence

Artificial Intelligence (AI) refers to the simulation of human intelligence in machines programmed to think, act, and learn like humans. AI is a subfield of computer science dedicated to understanding human thought processes and recreating their effects through information systems (Wang et. al., 2024). AI can also refer to any machine that exhibits human traits associated with learning and problem- solving. There are numerous types of AI, namely: Narrow or Weak AI, General or Strong AI, and Superintelligence. While Narrow or Weak AI has a limited task focus, it is specifically designed and trained to perform a designated role, such as virtual assistance; General or Strong AI can broadly apply its intelligence to diverse tasks. According to research, General AI is yet to exist but is an

ongoing project. Superintelligence is a theoretical concept said to be more intelligent than even the best human minds. AI has been applied to many fields and has proven beneficial in performing tasks such as virtual assistance, predictive maintenance, healthcare, image recognition, and Natural Language Processing (NLP). The Natural Language Processing capabilities of AI enable it to comprehend, interpret, and generate human language, thereby facilitating communication between humans and machines. Various techniques are employed in AI, including machine learning, deep learning, neural networks, and robotics. Pepper robots are developed to serve as language- teaching social robots (Belpaeme& Tanaka, 2022). Indeed, AI has offered numerous benefits to humans, including increased efficiency and effectiveness, high accuracy, reliable decision- making, and improved personalization. Although concerns regarding AI leading to job displacement, bias and fairness, ethics, and security persist, the advantages outweigh the disadvantages. The main aim of AI is to build intelligent systems (i. e., computer programs or machines) capable of intelligent behaviors (Rainer et al., 2016), including learning, reasoning, problem- solving, perception, and creation (Wang et. al., 2024).

The integration of AI in SLA has transformed the way language learners interact with language learning resources and receive feedback. AI-powered language learning platforms, speech recognition technology, and chatbots play significant roles in language learning and facilitation. These platforms are abundant and accessible to language learners worldwide. Services like Babbel, Duolingo, and Rosetta Stone utilize AI to offer personalized language learning and feedback to learners. Additionally, many chatbots are available, including language exchange platforms and virtual language tutors. Grammarly, Chat GPT, Quilbot, and Meta AI are examples of AI-powered chatbots that assist with grammar, vocabulary, and pronunciation in language learning. Speech recognition technology helps learners improve their pronunciation by offering feedback on accent, intonation, stress, and fluency. Su and Yang's study (2022) shows that technology significantly enhanced students' understanding of AI, computer science, and machine learning concepts.

Despite the fact that AI has offered personalized learning, increased feedback and language learning autonomy for SLA learners (Wang et. al., 2024), challenges like data quality, lack of human interaction, and limited contextualization still face the use of AI in SLA. Walter (2024) reports that discussions with teachers showed that a major hindrance to implementing AI tools in the classroom is their fear of using them, mainlyowing to their shallow knowledge of AI usage and assuming that they might use them incorrectly. At the same time, students may also not be adept users, and if the teachers are greenhorns themselves, the problem is exacerbated.The enormous potential that artificial intelligence (AI) has to enhance productivity, creativity, and decision-making must be weighed against the moral hazards that come with using it(Adigun & Oladapo, 2024). All Stakeholders need to reduce risks and properly utilise AI's capabilities by maintaining responsibility, embracing openness, and cultivating an ethical culture of AI development.

Digital Technologies- Extended Realities (Augmented Reality, Mixed Reality, Virtual Reality)

Extended reality technologies are said to be increasingly being deployed in learning spaces due to the affordances associated with reimaging learning spaces. They have been considered highly useful for the rich interactive learning environments that immerse the students with intriguing experiences. Makransky and Petersen (2021) posit that extended realities offer a safe haven for learning that facilitates deeper comprehension, spurs students to participate in learning activities, fosters positive learning behaviours and attitudes, enhances teaching and learning processes, optimises learning outcomes, self-efficacy, and self-regulation, enables students to make sense of the material by demystifying it, and helps them hone and perfect their skills by giving them a sense of immersion in accordance with instructional theory.Nunn (2021) explains three forms of Extended Reality (XR) technologies on a continuum of augmented, mixed, and virtual (AR, MR, VR) stating that AR is closely related to the real-world environment, MR encapsulates various ratios of synchronising VR and AR, while VR is a different world, perfect and computer synthesised.

Augmented reality (AR) is a type of extended realitythat adopts the use of computer applications to supply interactive virtual objects to learners to enrich the learner's physical environment in real time. AR leaves the learner's physical being outside to observe to learn with partial immersion in the learning environment; this is not like the case of a virtual environment where the learner is fully immersed and becomes an "object" in the environment (Garzón, et al., 2019). In AR, digital data such as pictures, movies, or three-dimensional models is overlaid onto the actual physical world to improve the student's understanding of reality. Numerous technologies, such as tablets, smartphones, smart glasses, and headsets, can be used to enjoy augmented reality.Garzón et al. (2020) reveal how AR had an average impact on students' learning gains.

Virtual Reality (VR) is also a veritable technological tool for second language acquisition and learning. It offers immersive and interactive language learning experiences. It is useful in language learning facilitation, which includes the acquisition of vocabulary, grammar, pronunciation, and semantics. Virtual Reality (VR) is the term for computer-generated virtual worlds that allow users to interact, explore, and be perceived as genuine by simulating their physical presence within them. This is made possible using immersive devices such as VR headsets. One of the benefits of VR in SLA is authentic and contextualized learning experiences, as VR offers deeper learning and better retention to learners. Also, there is increased engagement and motivation for language learners using VR, which is made available through its immersive possibilities (D.H. 2024). There are also improved language learning outcomes owing to the personalized learning it offers. Technical issues, limited content availability, and teacher training may pose problems, but the possibility of improving the current VR for more effective and engaging learning experiences offers some relief.VR applications, which are incorporated into different subjects, were also found to have a moderate effect on students' learning when compared to control conditions (traditional classes, e.g., lectures, textbooks, and multimedia use, e.g., images, videos, animation, CAI) (Chen et al., 2022b).

Online Resources /Mobile Applications/Automated Tools

Numerous online resources and mobile applications are available for second language acquisition. Resources like Duolingo, Babbel, Rosetta Stone, etc. are viable means of learning/acquiring a second language (Wang et. al., 2024). There are various online courses too, like Coursera, edX, Udemy, to equip learners at varying levels of language learning and instruction.Hello Talk, Tandem, and Speaky are examples of language exchange platforms that connect language learners with native speakers to enhance listening, speaking, reading, and writing skills. There are also a handful of language learning communities online, like Reddit, Discord, and some Facebook group pages that provide language learning resources, practice, and feedback on language learning. Language learning tools are also available, like Grammarly, Anki, and Speechling, for punctuation checks, grammar, spelling, vocabulary development, and pronunciation. Online dictionaries also offer substantial information and guidance, e.g., Merriam-Webster, Cambridge Dictionary, etc. All these resources are online resources that are accessible to learners to learn at their own pace. However, data subscription may be a challenge for some learners, as well as network connection.

Multimedia Materials

Multimedia resources have also been quite useful in second language acquisition. Multimedia is used to refer to content that uses a combination of various media forms, including texts, images, audio, video, interactive elements (like games, quizzes, and puzzles), etc. Multimedia learning resource implies that the resource is multimodal, interactive, and dynamic. With the incorporation of multimedia resources, websites, videos, games, and other learning materials are made available to language learners, providing enhanced, interesting, and effective learning experiences.

Numerous multimedia materials are available for second language learners. There are television shows, movies, online videos, and online classes that are provided to help learners improve their listening and comprehension skills. Audio contents,in the form of audiobooks on various topics and aspects of language learning, also abound to enhance the communication skills of learners. Language learning games and word games (gamification) make learning fun and engaging. Importantly, many language learning apps offer interactive lessons, games, exercises, and feedback as well. Of a truth, multimedia has also helped in the realization of technologically enhanced SLA, even though electricity supply to charge gadgets, data subscription, and network connection may appear as hindrances.

Tools And Technologies

Here are some of the tools and technologies that enhance second language acquisition:

1. Text analysis software, such as Voyant, Stanford CoreNLP
2. Online courses, such as Udemy, Coursera
3. Virtual and Augmented Realities (VR/AR)
4. Artificial Intelligence
5. 3D modelling and visualization tools, such as Blender, SketchUp

Etc.

Currently, technology has been incorporated into learning in virtually all academic fields-medicine, sciences, social sciences, engineering, arts and humanities, etc. It helps in digital textual analysis, database, computational studies, language processing, deep learning, speech synthesis and recognition, etc. In SLA, technology has provided language learners diverse opportunities as chatbots are now readily used to ask anything; Alexa, Siri, etc. are utilised to translate spoken words to text; automated interpretation abounds as translating text from one language to another is easily done now through machine translation. More accurate translations result from models having a superior ability to represent the syntactic and semantic intricacies (Koehn, 2009).

Generally, now, the use of IT hasbeen recognized as a basic literary requirement for all professionals, and many social activities. It is also essential for virtually (if not all) all academic works.

Benefits of Technology-Enhanced SLA

Technology-enhanced SLA provides a myriad of benefits to learners, such as flexibility, accessibility, personalization, enhanced feedback, and cost effectiveness. Timotheou et. al's (2022) study reported benefits of technology in learning to include student-centered, individualized, and project-based learning enhanced learner engagement and enthusiasm. Haleem, et. al (2022) assert that digital technologies have shown a highly potent impact on the education system, ensuring a positive paradigm shift. Technology offers the benefit of increased flexibility to learners accessing language materials. The learning and interaction with others are done at the learner's convenient timing and from any location in the world. With technology, students learn in the convenience and comfort of their homes (Haleem et. al, 2022). This has surely provided an acute paradigm shift from the regularfour walls of the classroom, pulling down all walls of hindrances regarding temporal and spatial setting.

Not only has technology provided increased flexibility to users, but it has also improved accessibility to all groups of language learners: slow learners, fast learners, brilliant, average, able-bodied, and limited mobility persons, etc. Everyone has equal access to language learning opportunities, owing to technology. In terms of personalization, the incorporation of technology in SLA enables learners to tailor their language learning experiences to their individual needs and preferences. As obvious that each learner is unique, technology-enhanced SLA has factored that in to provide personalized learning. This assists the learner to learn at their own pace and according to their peculiarity.With this, learning becomes engaging, interesting, and inclusive. Via the digital tools available, students can map historical events like trade routes, migration patterns, or the development of cultural traditions using GIS software (Presner, Schnapp,andLunenfield, 2009). Technology-enhanced SLA offers language learners immediate feedback in line with the learning objectives and assessment. This helps learners to track their learning progress and identify areas of difficulty, strength, and need for improvement.In addition to these outlined benefits, Haleem

et. al.(2018) establish the fact that technology in learning removes the environmental impact of using paper for books and handouts, stating that technology also enables time saving and convenience.Despite the aforementioned advantages of technology use in language learning, it is quite amazing to also worth noting that technology-enhanced SLA is cost-effective. In contrast with the regular school/college tuition and all other fees, technology promises a more pocket-friendly platform for language learning.Thus, utilising digital resources and techniques to instruct and learn has made learning more participatory, accessible, and cooperative (Digital Humanities, 2024). These benefits have sufficed to overcome the challenges of language acquisition (using the traditional approach) highlighted by Yule (2010:187) as insufficient time, focus, and incentive.

Practical Instances of The Utilization of Technology-Enhanced Language Learning

This section examines practical instances that portray the use of technology in language learning, in this instance, English language acquisition/ learning. Immediately, one comes across a strange word, and there is a need to check the meaning of such a word; one of the possible nudges will be to use 'Google' or other search engines. Search engines such as Google rely on information retrieval algorithms to understand user queries and supply relevant results. The use of search engines like Google, Firefox, Mozilla, etc. has offered foundational knowledge towards the learning of English as a second language. Through search engines, the meaning, part of speech, etymology, pronunciation, sentence usage example, etc., of words are provided. Research on dialectal variances is also made to provide insights on the use of movie vs. film, elevator vs. lift, colour vs.colour, colonise vs colonize, etc. All thesehelp users and provide a strong basis on which other knowledge on the language learnt can be built. There are also digital classrooms where students use technological or internet-connected gadgets like laptops, tablets, Chromebooks, etc. instead of writing notes (Haleem et. al., 2018). There are alsodigital public and private libraries that offer this service, whereby a user walks in and browses to gain more knowledge about a desired topic.

Technology has offered second language learners the opportunity to translate words, phrases, sentences, and longer expressions fromone language to another. Thus, it is possible to learn how to write or speak another language through the written or spoken translations provided by tech tools. Translating text from one language to another automatically is known as machine translation; there has been improvement in this field with more recent approaches that have concentrated on neural machine translation (NMT), such as those used in Google Translate. Kohen (2009) posits that the newer approach offers more accurate translation and represents better syntactic and semantic intricacies. Also, there are speech synthesis systems (text-to-speech- TTS) that translate spoken words to text, such as the ones used by virtual assistants like Siri, Alexa, Google Assistant, etc.

Immersive learning experiences using digital storytelling, augmented reality, and virtual reality (Hayles, 2012) are another practical way through which technology is utilised in second language learning. Technology has also improved literary learning and analysis; digital textual analysis is also possible via technological tools and programmes to explore character networks, patterns, genres, trends, meanings, keywords, word frequency, and style.

Computational study/corpus is made possible through digital programs like Voyant Tools or AntConc, R packages, Python libraries, etc.The technologies enabling print-based books are 'natural' to English studies. Stuart Lee argues for the close synergy between IT and the study of literature.The increasing number of primary texts collected and available through the Web is one of the main reasons why students rely greatly on electronic resources and why electronic texts increasingly find their way onto the syllabi. The recent concept in copy protection is Digital Rights Management (DRM), such as the e-book reader. DRM has had limited success but is becoming more ubiquitous (Apple's iPod and iTunes service used DRM technology, as does just about anything built for Windows.

Online courses are also made available for language learners to have foundational knowledge, as well as to improve their knowledge. Platforms such as Udemy, YouLearn, etc. are viable tools to explore as learners. Editing/Proofreading tools are also available to help language learners fine-tune their work and further harness their writing skills. Tools, such as Grammarly, are handy in this instance.

Challenges of Technology-Enhanced SLA

Despite the various benefits of technology-enhanced SLA as outlined in the previous section, it poses significant challenges, ranging from digital divide, technical issues, need for teacher-training, learner autonomy, to cost implication (for some). The unequal distribution of technology and internet access can create a digital divide, excluding some learners from technology-enhanced SLA, as the coverage may be limited to urban dwellers, to the detriment of rural dwellers who have limited or no access to the internet. Also, teachers require training to effectively integrate technology into their language instruction, which can be highly demanding, time-consuming, and resource intensive. This can discourage some teachers and hence pose a challenge to technology-driven SLA. This relates to Haleem et. al's (2022) stance that traditional instructors are hesitant to include contemporary technology and gadgets in school, considering them not as intelligent learning aids, but distractions. Furthermore, freedom, at times, exposes learners to some dangers; so, in a situation where a learner cannot take greater responsibility for their learning and be disciplined, technology-enhanced SLA can be highly challenging. Some learners get distracted easily, while some others have very short attention spans; others may delve into some other (un-academic) endeavours. Therefore, the autonomy a learner has may be a clog in the wheel of language learning progress.Even though technology-enhanced SLA is cost-effective, it may also incur financial burdens on some language learners in terms of the purchase of technological gadgets, data subscription, paid access to resources, etc.

Future Directions/ Recommendations

For arewarding utilization of technology in SLA, investigating the impact of technology on SLA outcomes, developing effective technology-enhanced SLA frameworks, promoting critical digital literacy, and addressing the digital divide are highly germane. It is expedient that researchers investigate the utilization of technology vis-à-vis SLA outcomes, which should include language proficiency, learner motivation and attitudes, and learner autonomy.

Also, researchers and tech experts need to develop and test frameworks that integrate technology into SLA in a highly principled and effective way. From the part of the learner, too much is expected for a positive SLA outcome. Learners, especially teenagers and young adults, need to be guided on the use of technology in SLA, and they should target competence in language use. Learners should also be encouraged to develop critical digital literacy skills, which include the ability to assess online resources and materials, navigate digital environments, and utilise technology to facilitate language learning. Teachers and students alike should be well-trained on the use of technology in education, as Walter (2024) recommended workshops for teachers. In addition, educators and policymakers need to address the challenge of the digital divide by taking a survey and then providing equal access to technology and internet resources for all learners at all locations. English experts should therefore be involved in building the technological tools for better output, and governments should facilitate and enforce technology-driven education, including it in national language policy on education.

Conclusions

This article provides an appraisal of the use of technology in SLA, examining its benefits, challenges, and possible future directions. Of a truth, the integration of technology in SLA has transformed the field, providing unparalleled opportunities for language learning and instruction. Technology incorporation in SLA has diverse benefits like flexibility and convenience, improved accessibility, personalized learning, and cost effectiveness, though it is also faced with significant challenges of digital divide, learner autonomy, cost implications, and technical issues. This study establishes the fact that the advent of technology has revolutionalised Second Language Acquisition and its integration in SLA has offered unparalleled opportunities for language learning and instruction. The identified challenges are surmountable by robust investigation by researchers on the impact of technology on SLA outcomes, developing technology-enhanced SLA frameworks, promoting critical digital literacy among learners, and addressing the digital divide challenge. These being done, the potential of technology improving SLA would have been strengthened.

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