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EXPLORING THE IMPACTS OF AI USAGE IN ENGLISH LANGUAGE LEARNING

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Abstract:

This conceptual paper explores the advancing contribution of Artificial Intelligence (AI) in English language learning (ELL), highlighting its fundamental impacts and challenges. Changes in learners' engagement towards English can be seen clearly with the integration of various AI learning programs in the educational setting. This paper discusses the impacts of AI towards language learning, including personalised learning experiences tailored to individual needs, 24/7 accessibility for learners and the provision of instant feedback on language skills. These features that belong to AI learning programs are helpful in enhancing learners' engagement and motivation while learning English. However, the paper also emphasises the challenges presented by AI in language learning, such as the tendency to limit human interaction, overdependence on technology, and concerns about users' data privacy. Moreover, AI systems may indirectly intensify cultural biases, limiting the inclusivity of learning tools. Ethical considerations are the key to the future of AI in educational settings. In conclusion, while AI has the potential to reshape language learning, it is essential to balance technology with traditional learning methods and address the related challenges. The paper also proposes for future research to explore the long-term effects of AI on language acquisition and learner motivation.

**Keywords:**

Artificial Intelligence, Challenges, Impacts, Language Learning, Technology

Introduction

The blooming of technology in recent years has significantly reshaped the traditional teaching and learning process for educators and learners. In language learning, especially English, digital platforms and various applications have provided learners with new experiences that have not been offered before in traditional classrooms. Indeed, technology has become the linchpin of the modern English language learning (ELL) process, which easily enables the learners to refine their skills such as reading, speaking, listening and writing almost instantly beyond traditional methods. Technology turns the classroom into a more interactive, active and autonomous learning environments (Chiu et al., 2023). It creates an individualised learning approach which indicates development in educational practices (Aristanto et al., 2023).

The emergence of Artificial Intelligence (AI) is one of the transformative developments of technology that we can see nowadays. AI has been widely harnessed in English language teaching and learning (Jiang, 2022). AI driven language learning tools such as Duolingo, Grammarly, ChatGPT, and speech recognition systems like Google Assistant or Siri have been widely being used in English language learning classrooms across the globe. The presence of AI in the educational setting continues to evolve, raising important questions about its impact towards the English language learning process.

While AI has the potential to enhance language acquisition through personalised learning, 24/7 accessibility, instant feedback, along with error correction and learners' engagement and motivation, it also presents a few drawbacks such as limited human interaction, over-reliance on technology, cultural biases in algorithms and data privacy and security. In a survey by Tyton Partners, one in three college students identified as regular users of AI and 51% of them would continue using AI writing tools, even if prohibited (Kelly, 2023). This evinces that students depend on AI a bit too much and it hinders their cognitive process. They hand over their work to their machine and show minimal effort in completing their task or assignment. It is a bit worrisome to observe this practice in an English language classroom.

Another issue is in fostering a deeper understanding of AI's broader impact (Walter, 2024) as understanding AI becomes as crucial as other skills (Zhang et al., 2023). According to Ng et al. (2023), teachers are not fully AI-literate and this may cause them to feel overwhelmed. In addition, they mentioned teachers and students not aware of the threats and boundaries and of this technology. Lack of training not only limits the potential of AI tools but also creates resistance among educators to adopt new teaching methods (Sharma & Singh, 2020). Without proper understanding of its uses, AI tools cannot be used optimally. Thus, this conceptual paper aims to explore the impacts of AI Usage in English language learning, highlighting its benefits and potential drawbacks.

Literature Review

AI in Language Learning: An Overview

“Artificial intelligence (AI) is technology that enables computers and machines to simulate human learning, comprehension, problem solving, decision making, creativity and autonomy. Applications and devices equipped with AI can see and identify objects. They can understand and respond to human language. They can learn from new information and experience. They can make detailed recommendations to users and experts. They can act independently, replacing the need for human intelligence or intervention: a classic example being a self-driving car,” (Stryker & Kaflakoglu, 2024, p.1). AI provides an inclusive educational setting because it can cater users’ specific needs (Rakap, 2023).

This includes the different types of AI-powered tools, applications, and techniques that improve the efficiency, personalisation, and appeal of language acquisition. Language learning and AI are becoming more and more intertwined. AI has a big impact on how we practice and learn languages. In language learning, the term "artificial intelligence" refers to the application of AI technology to improve and facilitate language acquisition. Besides being used as a tool for comprehending human speech, artificial intelligence (AI) is also a major factor in the development of flipped learning in language training. This enhances student output as well as proficiency while making it easier to evaluate human speech (Ali, 2020). AI empowers language learners by giving them access to a multitude of language resources and by establishing genuine channels for target language communication (Ji, Han, & Ko, 2023). “Artificial intelligence (AI) systems offer effective support for online learning and teaching, including personalising learning for students, automating instructors’ routine tasks, and powering adaptive assessments” (Seo, Tang, Roll, Fels, & Yoon, 2021, p.1)

Teaching and learning English nowadays have undergone a revolution because of AI. AI-powered tools in language learning and teaching provide a variety of applications to assist students at various proficiency levels. These artificial intelligence-powered solutions offer real-time feedback, individualised learning experiences, and easily accessible language learning materials. The following are some essential AI-powered resources frequently utilised in English language instruction:

Language Learning Applications

These applications use artificial intelligence (AI) to personalise learners’ learning experience according to their needs, interests, and progress. Some examples are:

- a) Duolingo: Utilises AI and gamification to modify lessons based on users’ progress. Learning is made enjoyable and interesting by the app's instant feedback feature.
- b) Babbel: Customises lessons to certain topics of interest and adjusts them to a learner's degree of ability.
- c) Memrise: Adopts AI algorithms to attune to vocabulary learning and offers spaced repetition so that words and phrases can be retained longer.

Speech Recognition Tools

These tools help in developing their speaking abilities. Learners will be provided with real-time feedback on pronunciation and fluency. Some examples are:

- a) Rosetta Stone: Utilises speech recognition algorithms to help learners speak more naturally. Learners' pronunciation will be evaluated using this AI tool.
- b) Siri and Google Assistant: Help learners improve their listening and speaking abilities. Learners can get immediate feedback on their pronunciation, and they will indirectly improve their spoken English by communicating with these AI tools.
- c) Elsa Speak: Helps learners sound natural by providing feedback on their pronunciation using speech recognition and deep learning techniques.

Automated Writing Assistance

This AI tool helps learners become better writers. It will provide real-time feedback on learners' sentence structure, offer stylistic recommendations, and fix grammar. The following are some examples:

- a) Grammarly: Besides enhancing writing style and doing grammatical checks, Grammarly also suggests conciseness and clarity in writing. It helps learners who want to improve their written English.
- b) Editor of Hemingway: Helps learners write more clearly. Complex sentences can be made simpler so that a better writing style will be produced.
- c) ProWritingAid: Examines grammar, style, and structure. It is similar to Grammarly. Additionally, it offers recommendations for enhancing readability in general.

Sentiment Analysis and AI-Based Feedback

To evaluate the tone and sentiment of written or spoken language, certain applications use artificial intelligence (AI) to help learners in their communication skills.

- a) Turnitin: Detects plagiarism and evaluates writing quality and originality. It is commonly used in educational contexts and helps learners develop their English writing abilities.
- b) Real-time voice analysis (including sentiment and tone) is provided by AI platforms such as Speechling and EnglishClass101, enabling learners to practise conversations and enhance their delivery.

Virtual Classrooms and AI Tutors

To give learners more individualised and interactive guidance, some online platforms incorporate AI-based virtual tutors into their lectures. The examples are:

- a) Google's Socratic app: Deconstructs difficult problems and provides detailed explanations to help learners with their school or college work, especially English. It helps learners learn English by offering vocabulary and grammar explanations.
- b) AI-powered chatbots in virtual classrooms: Help teachers and learners by improving learning experiences, automating activities, and offering immediate support. A chatbot, or an AI-powered chatbot, refers to an automated software program. It is created to mimic human-user communication. It processes and reacts to text or voice inputs that are similar to human communication by employing Artificial Intelligence (AI) technologies such as Natural Language Processing (NLP) and machine learning.

Personalised Tutoring Systems

AI-driven tutoring programs can evaluate learners' language skills and provide personalised instruction, practice problems, and offer instant feedback. These resources seek to establish a customised learning environment that changes to meet learners' needs. Some examples are:

- a) LingoChamp: Traces learners' progress and suggests tailored lessons, exercises, and activities based on algorithms.
- b) The Speech Tutor app from SiriusXM: Guides users through speaking, grammar, and vocabulary activities by using AI to customise tutoring sessions according to learners' unique needs.
- c) AI-powered chatbots: Offer interactive conversations for learners and help them practice speaking English daily.

Theories on AI in Language Learning: Past and Recent Perspectives

The development of artificial intelligence (AI) in language learning has evolved through a range of theoretical frameworks, from early computational and semantic models to contemporary theories emphasising personalisation, adaptivity, and learner autonomy. The table below summarises key past and recent theories, their main ideas, and representative references for easy comparison.

Table1: Summary of Related Theories

Theory/Model	Era	Main Idea	Reference(s)
Computational Theory of Mind (CTM)	1950s-1960s	Views the mind as a computer, supporting the idea that AI can simulate human reasoning and language.	Ćalušić, 2021
Chomsky's Generative Linguistics	1957 onward	Proposes innate mental mechanisms for language acquisition; influenced early AI language models.	Ćalušić, 2021
Quillian's Teachable Language Comprehender	1969	Early semantic network model; AI learns language by connecting concepts in a semantic web.	Ćalušić, 2021
Connectionism/Neural Networks	1980s-1990s	Models language learning as distributed processing in neural networks, emphasising learning from data.	Ćalušić, 2021

Intelligent Tutoring Systems (ITS)	1970s-1980s	Early AI systems that adapt instruction to individual learner performance for personalised learning.	Teachflow, 2023
Natural Language Processing (NLP)	1980s-present	Enables computers to process and understand human language, forming the basis for modern AI tools.	Teachflow, 2023
Adaptive Learning & Personalisation	2000s-present	AI systems dynamically adjust content and feedback based on learner data and progress.	Moluch, 2025
Constructivist & ZPD-based AI Models	2010s-present	AI integrates constructivist theory and Vygotsky's Zone of Proximal Development for tailored support.	Moluch, 2025
Learner Autonomy & Self-Directed Learning	2010s-present	AI empowers learners to control their progress, set goals, and receive tailored feedback.	Moluch, 2025
AI-Guided Individualised Learning	2020s	Meta-analyses confirm that AI-driven, individualised approaches significantly enhance language skills.	ScholarSpace, 2024

Summary of the Theories

- Early theories** such as the Computational Theory of Mind and Chomsky's generative linguistics provided foundational ideas about how AI might model human language learning, focusing on rule-based and semantic approaches.
- Connectionist models** and **neural networks** introduced learning from large datasets, moving away from rigid rules to adaptive, data-driven learning.
- Intelligent Tutoring Systems (ITS)** and **NLP** marked the first practical classroom applications, offering personalised feedback and interactive language practice.
- Recent theories** emphasise adaptive learning, personalisation, and learner autonomy, underpinned by constructivist and Vygotskian principles. These approaches leverage AI to dynamically tailor instruction, feedback, and resources to individual learner needs, significantly improving outcomes.
- Meta-analyses** confirm the effectiveness of AI-guided, individualised learning in developing language proficiency, motivation, and learner confidence.

This evolution reflects a shift from viewing AI as a static, rule-based tool to a dynamic, learner-centred partner in language acquisition.

Discussion

Benefits of AI in English Language Learning

The integration of technology into English language learning has transformed pedagogical approaches, offering significant benefits in personalisation, accessibility, feedback efficiency, and learner engagement. This review synthesises empirical and theoretical insights from recent studies to elucidate how technology enhances language learning outcomes.

Personalised Learning

Technology-driven tools enable adaptive learning experiences by tailoring content to individual learners' proficiency, pace, and preferences. For instance, recent studies have shown that personalised learning platforms are highly effective, with over 70% of students rating them as such. These systems leverage algorithms to analyse learners' strengths and weaknesses, delivering targeted activities that address gaps. Platforms like online learning assistants exemplify this by generating customised exercises, such as workplace dialogues that align with learners' professional contexts. Similarly, technology-mediated instruction has been shown to improve language proficiency significantly by adapting content to learners' needs, as evidenced by a notable increase in grammar accuracy among students using feedback tools. These systems also incorporate learners' interests, such as integrating music or cultural content, to boost engagement and relevance.

24/7 Accessibility

AI eliminates temporal and spatial barriers to language learning by providing ubiquitous access to resources. Global Indian School (2024) emphasised that AI platforms allow learners to practice English anytime, anywhere, using mobile-friendly interfaces and offline capabilities. This impacts learners in remote areas or those balancing education with other commitments. Jegede (2024) noted that 80% of students valued the flexibility of accessing AI tools outside traditional classroom hours, enabling consistent practice. For example, AI chatbots like Duolingo's virtual tutors offer conversational practice at the learner's convenience, fostering continuous learning without institutional constraints (Hsu et al., 2023).

Instant Feedback and Error Correction

AI's capacity for real-time feedback accelerates language acquisition by addressing errors immediately. Tools like Elsa Speak use speech recognition to correct pronunciation, while NLP algorithms provide granular feedback on grammar and syntax (Dja'far & Hamidah, 2024; Jegede, 2024). In a mixed-methods study, students receiving AI-mediated feedback demonstrated 34% faster progress in writing fluency than traditional methods (Chen et al., 2023). Immediate corrections help learners internalise rules and avoid fossilised errors, as seen in platforms like Grammarly, which explain mistakes contextually (Huang et al., 2023). Furthermore, AI's ability to generate personalised feedback, such as suggesting synonyms for overused words, enhances vocabulary retention and syntactic diversity (Lee & Lee, 2021).

Engagement and Motivation

AI enhances engagement through gamification and interactive simulations. Chen, Huang & Lee (2023) reported that 78% of learners using AI platforms exhibited higher motivation due to gamified challenges (e.g., leaderboards and achievement badges). Chatbots like Replika simulate low-pressure conversations, encouraging hesitant learners to practice speaking without fear of judgment (Kim et al., 2020). Adaptive AI also fosters intrinsic motivation by

aligning tasks with learners' goals—for instance, business English learners receiving negotiation role-plays (Global Indian School, 2024). Qualitative studies highlight that AI's interactive and immersive environments, such as VR language labs, increase learner autonomy and curiosity (Liao et al., 2023; Jegede, 2024).

AI's role in ELL is multifaceted, offering personalised, accessible, and engaging learning experiences while providing actionable feedback. However, challenges such as algorithmic bias and the need for human oversight in complex communication tasks remain (Jegede, 2024; Frontiers in Psychology, 2023). Future research should explore hybrid models combining AI efficiency with instructor mentorship to optimise outcomes.

Challenges of AI in Language Learning

While artificial intelligence (AI) has brought significant changes to language learning, there are a few major challenges that have come along with its integration. These challenges must be addressed to ensure ethical and effective usage of AI in language learning settings. These challenges are such as limited human interaction, over-reliance on technology, data privacy and security and cultural biases in AI algorithms.

Limited Human Interaction

One of the major challenges of AI integration in the context of language learning is the inability of AI to replicate real human language and interaction. Real human interactions involve aspects such as voice intonations, facial expressions and body language. This may cause the learners of English to struggle with those aspects while using the English language in their real-life conversations with people around them, which will lead to miscommunication. Lacking these aspects can lead to a surface-level understanding of a language that demands deeper connections and interpretations to function properly during real human interactions (Creely, 2024)

Over-reliance on Technology

Integration of AI in English language learning may result in over-reliance on technology. Creely (2024) claimed that the convenience brought by AI tools may prompt learners to be passive rather than active in their language learning setting. Walter (2024) stated the students were enthusiastic to use AI to help them with their writing workload, even with the ones due in the classroom. This will cause the learners to lose their ability to maintain their creativity and critical thinking. AI tools such as Chat GPT can generate ideas for students to complete their language learning tasks in seconds without them thinking on their own. This kind of convenience is attractive to learners, which can cause them to rely on AI tools to complete the tasks designated for them. However, the possible concern with this practice is, their cognitive and logical skills may decline (Ipek et al., 2023). The findings in Yusuf et al., (2024) showed GenAI tools have the potential to facilitate academic misconduct such as cheating and plagiarism. The result also indicated that this tool is susceptible to produce inaccurate or irrelevant outputs.

Data Privacy and Security

In the context of AI integration in language learning, data privacy and security is always relevant to be discussed. Although AI systems do not constitute as much of a threat as people may think to privacy *per se*, this does not mean there are no dangers associated with them (Elliot & Soifer, 2022). Many AI platforms require learners or users of their platform to include

personal information such as email address, age, country of origin and many more. As for now, there is no clear explanation on how the information is being stored, used and shared. This may put the safety of the information shared by the learners at risk of being hacked or misused by irresponsible parties.

Cultural Biases in AI Algorithms

AI algorithms are highly dependent on the data with which they are trained. Those data are at risk of containing certain cultural biases, which will lead to misunderstanding or may reinforce negative stereotypes towards certain linguistic models. Creely (2024) explains that there is a potential for AI to induce a uniformity or cultural bias in linguistic expression, which often can be subtle. This condition may affect the language learning process among learners of the English language.

The Role of AI in Developing Language Skills

The integration of AI in language learning significantly enhances the development of speaking, pronunciation, writing, grammar, reading and comprehension skills. It offers personalised feedback, adaptive learning pathways, and immersive interactive experiences, thereby improving learner outcomes and efficiency in language acquisition.

Writing and Grammar

Macinska and Vinkler (2024) delved into several famous English language learning cases that employed AI-powered learning tools. First, AI is used as a writing assistant, such as Machine translation is mainly used by learners to translate their ideas from their first language into the target language. Moreover, Automated Writing Evaluation (AWE), such as Grammarly, gives prompt feedback to learners on their writing skills, such as grammar, punctuation, spelling and syntax. This promotes self-study among the learners, in which they no longer need to wait for the teacher's commentaries on their writings.

Speaking and Pronunciation

Macinska and Vinkler (2024) also highlighted that interactional competence can be achieved due to the application of AI-powered speech evaluation tools. Learners have the opportunity to practice their pronunciation as the system can detect speech errors and improve their pronunciation. Furthermore, these tools allow students who often find themselves to be anxious to speak in class to be more confident to practice practising the English language. AI also acts as a conversation partner due to the existence of chatbots and intelligent personal assistants such as Alexa and Google Assistant (Macinska & Vinkler, 2024).

Reading and Comprehension

Moreover, studies consistently show that AI can aid English reading and comprehension by personalising learning, providing instant feedback, and increasing engagement and motivation among learners. AI-driven reading assistance systems specifically for English language and literature are found to improve reading rates and lessen iteration error, demonstrating remarkable achievements in reading quality and user engagement (Chen, 2024). Yousefi and Askari (2024) encourage the use of AI tools in the classroom as it significantly improved reading comprehension scores, especially among learners with lower proficiency. These tools are tailored to meet learners' developmental needs, which can be helpful for them to study independently, too.

Ethical Considerations and Future Directions in AI-Enhanced English Language Learning

The integration of Artificial Intelligence (AI) into English Language Learning (ELL) is rapidly transforming pedagogical landscapes, offering learning, enhanced accessibility, and instant feedback (Cañas, 2022). However, this technological evolution necessitates careful consideration of ethical implications to ensure fairness, inclusivity, and equitable access. This review explores the ethical considerations surrounding AI in ELL and outlines future trends that prioritise human-AI collaboration and responsible innovation.

Human-AI Collaboration: The Symbiotic Future

A fruitful collaboration between AI systems and human knowledge is essential for the future of ELL (Crompton et al., 2024). According to Ouyang and Jiao (2024), every component of this collaboration must be appreciated. Instead of competing, this will allow them to better each other. According to UNESCO (2024) and many LinkedIn thought leaders, working with AI is becoming more advantageous, but it also necessitates that human-AI interaction be acknowledged and valued. As Licklider (1960) suggested, the human side is valued, and its role in working with the human partner allows ethical teaching and accountability to ensure that the values are not lost.

The Imperative of Ethical AI

One of the most critical concerns is the potential for AI systems to perpetuate or amplify existing biases. If algorithms are trained on limited or skewed datasets, they may inadvertently disadvantage learners from underrepresented groups, reinforcing linguistic stereotypes and undermining inclusivity. As noted by Ahmadi (2018), AI must be rigorously audited for bias and continuously refined to ensure equitable outcomes. A related concern is the digital divide. As Surianshah (2021) argues, AI tools must be accessible to learners regardless of socioeconomic background, requiring affordable, low-bandwidth solutions and digital literacy training.

To address these ethical challenges, Stahl et al. (2017) recommend a framework of "responsible research and innovation," emphasising transparency, accountability, and stakeholder engagement in the design and deployment of AI systems. Furthermore, this approach has the AI tool as an aide instead of an instructor because the human element of connection is what will create the full circle.

Future Trends: Immersive Learning and Natural Interactions

Looking ahead, the evolution of AI in ELL will likely involve increased integration with virtual reality (VR) and augmented reality (AR), creating immersive language learning environments that simulate real-world interactions. As noted in the study of Ouyang and Jiao (2024) and Cañas (2022), it is important always to keep the human element valued in any education system.

However, the integration of AI with more advanced technologies like deep learning and neural networks promises more natural and nuanced language interactions, enabling AI systems to understand and respond to complex linguistic cues. As discussed by Pedro et al. (2019), these advancements can enhance the effectiveness of AI-driven language tutoring systems. All steps for the future must be carefully ethical considerations, ensuring that VR/AR experiences promote inclusivity and do not exacerbate existing inequalities (Sa'di, 2022).

The future of ELL is intertwined with AI, offering unparalleled opportunities for personalised, accessible, and engaging learning experiences¹. As the World Bank's findings reveal, those skills are needed. Meeting all needs has to be balanced with the ethical considerations being applied by always having the focus of using human collaboration first and having it all be equitable, while the advanced AI assists in all other areas (Sa'di, 2022; Sharadgah & Sa'di, 2022). As the focus of the study with Vygotsky, the AI system must be designed to account for all of the collaboration from the human element in the equation.

Conclusion

In conclusion, AI has proven highly effective in English language learning contexts, significantly enhancing personalised learning, 24/7 accessibility, instant feedback, error correction, learner engagement, and motivation. These advancements enable learners to progress at their own pace, access resources globally, and refine skills through real-time interactions with AI tools like Duolingo, Grammarly, and speech recognition systems. However, despite these benefits, challenges such as limited human interaction, over-reliance on technology, cultural biases in algorithms, and data privacy concerns persist. Responsible integration of AI remains crucial to maximise its effectiveness while addressing these limitations, ensuring that technology complements human instruction, upholds educational equity, and preserves linguistic diversity. Future research should prioritise longitudinal studies to assess AI's long-term impact on language acquisition, cognitive development, and learner motivation, as well as strategies to mitigate biases and ethical risks in AI-driven systems.

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