
The Role of Artificial Intelligence (AI) in Developing English Language Skills in the Saudi EFL Context: An Analytical Study

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Abstract

This paper explores the role of Artificial Intelligence (AI) in language learning, examining its impact on language skills. The study synthesises research findings from diverse sources, including academic journals, conference proceedings, and scholarly books, to provide a comprehensive overview of the current state of AI integration in language learning. Key themes addressed include the effectiveness of AI-driven language learning platforms, the role of AI in learning experiences, the potential of AI technologies in language learning. Additionally, the paper discusses challenges and future directions in the field, offering insights for researchers, educators, and practitioners interested in harnessing the potential of AI to enhance language learning outcomes.

Keywords: Artificial Intelligence (AI), EFL, Language Learning, Language Teaching, Technology.

1. Introduction

Artificial intelligence (AI henceforward) is seen as the revolution of technology in the current century and thus has become an integral part in our daily life for varied functions. Car drivers for instance, may possibly employ AI technology or online application to reach different destinations while businesses utilise AI technology

tools for marketing and communication purposes. Others like young people make use of AI technology for entertainment and games. Students and language learners also use AI technology for studying and learning. The list moves on for many other careers and occupations employing artificial intelligence technology for varied functions and reasons.

In the realm of language acquisition, teachers and learners alike attempt to promote English learners with multiple opportunities in advancing their skills (listening, speaking, reading and writing) with recent online resources. In writing skill, for instance, learners can integrate AI technology to seek assistance in translation or other editing and reviewing purposes. Other language learners may employ AI tools to enhance their speaking and communication skills. In addition, many online resources are currently available for language users to develop listening and reading skills. However, given the fact that technology overall is currently employed in different fields of science and education. It is pivotal to investigate how AI technology may be integrated in English learning and understanding in Saudi tertiary contexts. The current study is aimed at shedding light on the existing body of research on AI in the language learning context in Saudi Arabia to analyse how language learners take advantage of AI technology for developing different skills in English. Additionally, the study focuses on the most common English skills learners need and require improving through AI technology.

The use of AI in language learning context has the potential to empower learner autonomy, as learners can access to numerous resources and get feedback independently, anytime and anywhere. Doing so, this study provides an overview of the current state of knowledge and identify key findings, trends, and gaps in the field. The study has yielded numerous recommendations for educators, researchers, and policymakers about the potential benefits and challenges associated with the integration of AI in language learning. According to Liu (2023:2): “I strongly believe

in the need for stakeholders to understand the cyclical effects of AI and education. By understanding how different activities accrue, we have the ability to support virtuous cycles. Otherwise, we will likely allow vicious cycles to perpetuate". It is worth mentioning that alongside the benefits of AI technology in English learning, other issues may arise and should be taken into consideration such as privacy and ethical concerns, to name a few.

The present study employs a systematic approach to gather and analyse relevant research studies on the role of Artificial Intelligence (AI) in developing the four English language skills for learners (listening, speaking, reading, and writing). The approach consists of the following steps:

1. Identification of research objectives: This initial step involves identifying the research objectives and questions to guide the literature review of each selected study. The primary objective is to scrutinize the role of AI in promoting all English language skills. Research inquiry may include AI tools learners commonly use to enhance their learning, the effectiveness of AI in language learning environments, potential pedagogical implications, challenges, solutions and ethical considerations.
2. Literature search: This includes comprehensive search of academic databases that include but not limited to books, journals and conference proceedings. Further, relevant online material is counted to identify related studies. Keywords and search terms include (e.g. "Artificial Intelligence", "AI in language learning", "Technology in EFL context". The search strategy can be fine-tuned and replicated to ensure inclusiveness of relevant studies.
3. Data extraction and analysis: Selected literature is thoroughly reviewed highlighting the key information, research objectives, context, and main findings. The extracted data are organised and synthesised to identify common themes, trends, and patterns related to the role of AI in developing English language

learners' skills. Comparative analysis is conducted to highlight similarities and differences across studies.

4. Data synthesis and interpretation: The synthesised data are analysed and interpreted to derive conclusions. The findings are organised based on the research questions and themes discussed during the literature review. Common themes and implications are observed to draw conclusions regarding the use of AI in different language learning contexts.
5. Limitations and gaps: The limitations of the selected studies are acknowledged and discussed. Potential biases, including publication, and language bias are considered. Additionally, gaps in the literature are highlighted, suggesting areas and recommendations for further research in different language learning environments.

It is worth noting that this study focuses on literature review that involves the analysis of existing research studies. Data collection such as questionnaires and interviews, is not included in this methodology. This is because this article review intends to look at the studies integrating AI in learning English and investigate how learners use this modern technology to enhance language skills in different learning contexts. Further, the study identifies the skill, if any, mostly learners need to improve using AI technology. Studies included in this study were recently published, given that AI technology was recently introduced in Saudi Arabia, the context of current research.

2. The Use of AI in Language Learning Contexts

2.1 Using AI to enhance Speaking Skill

With the rapid growth of AI platforms and technology, many online applications related to English language learning and education overall started to compete in refining and adding new features and functions for their end users. Therefore, more than one study was found in the literature that investigates how learners can develop speaking skills via AI technology. Makhlof (2021) conducted a study to investigate

how ELSA, the AI-powered English-speaking coach, can be integrated to improve student's speaking skills at Abha university, Saudi Arabia. This AI- based mobile application used for training students on English pronunciation and accent. Students start with speaking assessment test according to their proficiency level. It allowed learners to record their voices of any preferable topic and then ELSA provides instant feedback, corrections, and evaluation. In addition to speaking skills, ELSA can boost vocabulary and grammar knowledge of their user through correction and feedback given. The study concluded that ELSA provided significant opportunities to develop students speaking skills. Integrating AI in English learning allowed opportunities for lower-level students to get involved with higher-level students and instructors and learn from them. Further, using AI technology encouraged autonomous learning allowing students to learn independently anytime and anywhere.

Similarly, Alsadoon (2021) undertook a study regarding using an interactive storytelling chatterbot in developing students' chatting skills. The study addressed EFL low-intermediate level students at the British Council in Riyadh. Chatterbot was presented as an AI human-like practise tool to utilise while learning English any time. This AI tool was equipped with four functions such as dictionary, translation, image, and concordance device that allowing users to examine how words or phrases are used in sentences. The study found that chatterbot was an effective AI tool to promote students English speaking skills. It was additionally revealed that students overwhelmingly used the feature of translation and dictionary in AI chatterbot tool as it is allowing more simplicity in chatting.

In another latest study, Khasawnah (2023), conducted a study to explore how AI-powered Virtual Conversation Partner Program (VCP) can assist English learners at King Faisal University in improving their speaking skills. VCP includes tools such as LinguaBot, LingvoChat, and PoliglotPa all of which provide English learners with opportunities to speak actively with AI tools and get instant feedback while

speaking. The results indicated that students have a positive attitude towards the use of VCPP in communicative activities. Furthermore, students perceived AI applications as important in enhancing speaking skills as these applications are user-friendly for many students.

In a similar vein, Almelhes (2023) conducted a recent study addressing language learners at Islamic university, Madinah. The study proposed cognitive learning as an approach for second language learners to master pronunciation. This cognitive approach relies on using AI technology tools such as Intelligent Tutoring System (ITS) and Natural Language Processing (NLP), Both were used as a mean of interaction between computers and language learners. The study found that both tools helped learners in developing different pronunciation and communication skills. In addition, allowed users to learn more independently and at any time.

2.2 Using AI to enhance Writing Skill

In an increasingly digital world, proficient writing is essential for effective language learning. Well-developed writing skills contribute to learners' personal growth, enabling them to convey their thoughts and ideas. Few studies that looked at the role of AI in the present study's context have been located. Alotaibi (2023) conducted a study to investigate the influence of Grammarly on EFL writing proficiency at Al Majmaah university, Saudi Arabia. Grammarly is defined as AI powered writing assistance tool which assists learners in producing well-written texts. It offers a wide range of academic writing assistance functions, e.g. grammar correction, sentence structuring, reviewing, and editing as well as helping users crafting coherent written texts. In her study, Alotaibi (ibid) found that Grammarly offered numerous advantages of promoting the quality of students writing work. It helped writers ensuring the clarity and accuracy of the written text. Students, additionally, commented on the easiness of this AI-powered application and its value in providing alternative suggestions to perfect their writing.

In another Saudi tertiary setting, AbdAlgane and Othman (2023) identified the implication of using an AI-powered application, namely Word Tune on students writing at Qassim University. Word Tune was introduced as a digital writing supporter that analyses the user's writing and suggests different options for the original text using different phrases, words, and forms. In other words, the application offers different alternatives of how the text can be rewritten in different style of writing. The study advocated using AI in learning English could remarkably improve student's skills in different areas including critical thinking, debate skills along with writing and communication skills. This is due to the flexibility and variety of AI tools offered and fitted with several learner's needs and requirements.

In another context, Ahmed (2023) undertook a study that examined student satisfaction level vis-à-vis using ChatGPT in developing their English writing skill at Jubail English Language and Preparatory Year Institute. In his study, Ahmed incorporated Chat Generative Pre-Trained Transformer (ChatGPT) as a helper device students use in writing to improve English proficiency. ChatGPT is known as the latest tool created for aiding in numerous ways using AI technology. The results showed that students benefited from ChatGPT to develop their writing skills, specifically in translation, summarising, shortening long paragraphs and other editing services. Additionally, students highlighted that ChatGPT offered instant response for any topic requested by the user.

In a similar vein, Alammam et al (2023), carried out a study aiming to explore students' perceptions of using Automated Paraphrasing Tools (APTs) to improve their academic writing process. This AI software tool aid students to use algorithms to or adjust the structure of the original text while maintaining the same meaning. According to the study, this technology was welcomed by many students enrolled in English course in Zulfi College, Saudi Arabia. This because paraphrasing is perceived as a challenging task for language learners and thus APT tool can develop

students' writing quality by employing several strategies, such as using synonyms, modifying word forms, using active/passive sentences, and changing word order.

2.3 Using AI to enhance Reading Skill

There are so far two recent studies conducted to find out how using AI technology can facilitate reading skills for Saudi's EFL learning context. The first study conducted to perceive how Chatbot used to enhance learners' reading skills in EFL university setting. Chatbot was employed as an AI tool that simulates human conversation through voice commands or text chats to encourage language learning. The study addressed EFL students enrolled in Business English course at Bisha university, Saudi Arabia (Ghaleb, Mahdi, Alfadda and Alkhateeb; 2022). The study revealed that Chatbot technology had a positive impact on language learners in terms of promoting their attention while reading, increasing the learners' vocabulary knowledge and words' pronunciation. It also helped to create an interesting environment while learning.

The second study undertaken by Al-Othman (2024) to examine the effects of Text-To-Speech (TTS) on enhancing Saudi EFL students' reading abilities. This software was integrated as an assistive AI tool students could use while reading to convert the written text into spoken words. The study addressed English departments' students studying reading course at Imam Mohammed Ibn Saud Islamic University in Riyadh. The study proposed that TTS technology helped EFL learners to facilitate the process of reading, motivated them to enjoy reading as well as interacting with the text. Additionally, the study concluded this AI software proved to increase reading comprehension and the fluency of reading among learners.

2.4 Using AI to enhance Listening Skill

To the best of the researcher's knowledge and yet only two recent studies found on literature addressing listening skills through AI modern technology in the Saudi context. The study conducted by Almohaws (2023) to determine the impact of audio-

podcasts on promoting student listening skills in EFL university setting. Podcast was employed as an indirect learning tool students used in and outside classrooms to enhance listening understanding in English. The study outcomes recommended using podcast as a complementary learning tool that aiding learners to improve their listening comprehension at any time. Additionally, offering learners to hear the language from English native speakers, considering that Saudi EFL teachers are often non-native English speakers.

In another context, Alutaybi and Alfares (2023) explored the impact of Netflix on learners' listening skills from teachers' perspective. The study involved a hundred participant teachers from various educational institutions in Saudi Arabia. The study found that Netflix has a potential benefit in fostering students' listening and comprehension skills. It facilitated students' ability to understand a variety of English language spoken and used in movies and TV shows on Netflix platform.

The outcome of Alutaybi and Alfares study ties well with previous study conducted by Alharbi (2019), to investigate students' perspective on using online platforms such as YouTube and Snapchat to promote listening skills at Taif university, Saudi Arabia. The study indicated that both YouTube and snapchat provided real-life listening activities away from traditional classroom practices. In addition to appropriateness of learning via smart phone applications used and accessed by most students, motivating students to learn individually and independently. The study suggested both platforms can significantly enhance listening skills for EFL learners.

Following the analysis above, it can be noticed that the studies found on literature addressing speaking and writing skills more than the studies targeting reading and listening skills. This might be interpreted that AI technology was utilized by EFL learners predominantly for the improvement of their speaking and writing abilities, rather than focusing on enhancing their reading and listening skills. This

interpretation can be strengthened by the recommendation as well as implication of each study discussed on the literature.

For example, none of the studies addressed reading and listening skills raised any concerns or apprehension regarding using AI technology in developing learners' abilities in EFL learning setting. The studies, however, recommended that further research is needed to investigate how artificial intelligent can be integrated considering other English learning contexts or employing other AI technology to develop students' knowledge in both skills.

As for the using of AI technology in developing writing and speaking skills for EFL learners, the authors of the studies commonly suggested that learners could become over-reliance on technology for learning and development. Thus, the over-reliance of AI technology may lead to poor quality of learning or failure to fulfil the learning outcomes of the targeted course. In writing skill as an example, EFL learners might heavily relay on AI applications to identify their writing errors and then be less attentive in understanding language structure rules and procedures. In addition, unlimited use of AI technology in developing witing skill can hinder the learner's ability to grasp grammar rules independently. Other studies on the literature raised privacy concerns given that the text being checked could be stored or accessed by other users using the same AI technology tool. Currently, many instructors worry about the possibility of students using AI technology to complete their writing assignments. AI technology allows different users to produce a well-written text about any topic within seconds. This could lead many users to be under the threat of plagiarism. Plagiarism refers to the act of presenting someone else's ideas as one's own without giving proper credit. Therefore, students need to be aware of using AI technology in language learning endeavour and alternatively use it as a supplement device for development of their skills rather than substitute of learning. This awareness of implementing AI in learning helps to promote not merely the ethics of

student's learning and progressing but also the quality of learning outcome and maintain the integrity of student's work.

3. Concluding Remarks

In conclusion, the present paper offered a comprehensive examination of the growing role of Artificial Intelligent (AI) in language learning vis-à-vis the four language skills. It synthesised research findings from different scholarly studies to illuminate the multifaced impact of AI on language skills use and development. This paper elucidated key themes such as the effectiveness of AI-based language learning platforms, the role of AI in shaping learning experiences, and the potential of AI technologies in language education.

Furthermore, by addressing the different aspects of integrating AI into language learning, this study provides valuable insights for researchers, educators, and practitioners alike. It emphasised the ongoing need for exploration of AI to enhance language learning outcomes, while also highlighting the importance of addressing ethical, pedagogical, and technical considerations in developing and implementing AI-based language learning solutions. By and large, this paper aims to serve as a roadmap for navigating AI at university-level language learning contexts. It is also hoped here that the paper provides a foundation for decision-making in advancing language learning through AI technologies.

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