ARTIFICIAL INTELLIGENCE AND LANGUAGE ACQUISITION: ENHANCING LISTENING AND SPEAKING PROFICIENCY

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Abstract
Technology has permeated various aspects of human activities, including the realm of language education. Over the past decade, the educational process has undergone transformation, shifting towards a more student-centered approach where instructors are seen as facilitators. While Computer Assisted Language Learning (CALL) dominated the scene a few decades ago, recent years have seen the rise of Artificial Intelligence (AI) in language education. This research thus delved into the influence of AI on language learning, focusing particularly on listening and speaking proficiencies. The utilization of Artificial Intelligence proves advantageous in the domain of listening comprehension, enabling the creation of personalized exercises tailored to individual students' requirements and capabilities, as well as the generation of bespoke activities targeting specific weaknesses. Moreover, these resources are easily accessible from any location at any given time, granting students the flexibility to hone their listening skills at their own pace. Nevertheless, the efficacy of AI technology in teaching certain listening abilities, such as identifying sarcasm or irony, which necessitate a profound comprehension of cultural and contextual elements, may be limited. In terms of speaking skills instruction, AI stands out as a valuable tool in delivering instantaneous feedback to learners; however, it is crucial to acknowledge that there are certain aspects of speaking proficiencies where AI's assistance may be less effective. In conclusion, it is evident that AI holds substantial potential as a pedagogical instrument for enhancing language acquisition outcomes, particularly in the realms of listening and speaking skills.

Keywords: Technology, CALL, Artificial Intelligence, Language Learning, Listening Skills, Speaking Skills.

Introduction

Artificial intelligence is rapidly advancing in the contemporary digital landscape. The current developments in digital tools and novel software are consistently emerging, providing users with prompt outcomes. Within the realm of digital marketing, Artificial Intelligence (AI) has traditionally been regarded with skepticism, akin to other technological advancements. As posited by Holmes (2019), artificial intelligence serves as a method to impart critical and creative thinking skills akin to those of a human mind to a computer, a robot controlled by a computer, or software.The process of achieving AI involves an analysis of cognitive mechanisms and an exploration of the intricate patterns within the human brain. The term "artificial intelligence" was originally introduced by the American physicist John McCarthy in 1955, who defined it as a program or computer endowed with reasoning abilities resembling those of a human.

AI could be delineated as the endeavour to replicate human intelligence through a mechanism, notably a computational system (Brady, 2019). According to Baker and Smith (2019), AI is characterized as "computers that execute cognitive

functions, typically linked to human cognition, particularly in the realms of learning and issue resolution." Moreover, the scholars emphasize that AI does not rely on a singular form of technology but rather encompasses a broad spectrum of technologies, methodologies, and strategies which encompass data extraction, machine learning, neural networking, and natural language processing. The escalating excitement revolving around AI has prompted companies worldwide to expedite the showcasing of how their amenities and commodities leverage AI. Frequently, what these corporations identify as AI fundamentally constitutes a solitary component of the technology, like machine learning (Velasquez, 2021). Essentially, AI encompasses specialized software and hardware employed to devise and refine machine learning algorithms. AI technology is not synonymous with any specific programming language, although certain languages like Java, R, and Python hold prominence in the realm of AI (Luckin et al., 2016).

Artificial Intelligence (AI) has recently demonstrated itself as a valuable and revolutionary tool across various domains, with language learning being one of them. There is a continuous quest among educators, learners, and businesses for effective approaches to enhancing language skills, and AI-driven solutions have emerged as indispensable resources in this endeavour.The influence of AI on language learning is intricate, offering both prospects and obstacles for educators, learners, and corporate establishments.

Purpose of the Study

The purpose of the study was to investigate the influence of Artificial Intelligence on the development of listening and speaking abilities. Specifically, the study emphasized the effects of AI on language acquisition, deliberated on the advantages and limitations of incorporating AI in the pedagogy of listening comprehension and evaluated the advantages and drawbacks of utilizing AI for instructing speaking proficiencies.

Literature Review

The integration of technology has played a pivotal role in English Language Teaching and Learning (ELT/L) (Rivera, 2018). Technological tools not only offer a wide array of educational materials but also serve as a source of motivation for students (Larsen-Freeman & Anderson, 2011), easing the learning process (Ahmadi, 2018) and introducing novel approaches to education (Gilakjani, 2017).

AI has been instrumental in facilitating language instruction and acquisition, as evidenced by research indicating its capacity to enhance language-specific competencies such as reading comprehension (Xu et al., 2019), repetitive language skill drills (Kim, 2019), and English pronunciation correction (Noviyanti, 2020). Furthermore, AI has the potential to contribute to a broader spectrum of educational activities, encompassing functions like automated assessment, feedback provision, personalized learning experiences, intelligent tutoring, and predictive systems (Pokrivčáková, 2019).

Recent advancements in technology have led to a surge in the utilization of artificial intelligence, as indicated by empirical evidence (Crompton et al., 2022) demonstrating a prevailing inclination towards the incorporation of AI in language acquisition and writing skills,

surpassing its application in other academic fields.

Artificial Intelligence and Listening Comprehension

In the domain of language acquisition, the proficiency in understanding spoken language is of paramount importance. This skill involves not only the capability of perceiving words audibly but also of comprehending, assessing, and reacting to them suitably. The utilization of Artificial Intelligence (AI) has emerged as a crucial instrument in enhancing the effectiveness of listening comprehension, especially with the progress in technological innovations. AI-powered tools and applications offer learners individualized, engaging, and dynamic learning opportunities that were previously absent in conventional teaching methods.

Listening is listed as the first skill not only because it appears first in natural language acquisition but also because it is used frequently (Nahed & Heba, 2020).Many methods and strategies have been devised over the years to effectively teach the listening skill but many language teachers most especially those at the primary level of education are not aware of these strategies. If the method employed by teachers in teaching listening skill is not good enough, then there is likely possibility that its teaching and learning might not produce positive feedback. Nahed and Heba (2020) assert that the method of teaching listening and lack of materials are responsible for the poor level of listening comprehension. Hamouda (2013) states that the problems of listening comprehension exist in four factors that constitute the aim and process of listening: the message, the speaker, the listener and the physical settings.

The listening skill is an essential component of language acquisition, and AI can be a valuable tool in helping students improve their listening skills.A research conducted by Nahed and Heba (2020) examined the efficacy of an artificial intelligence (AI) centered initiative in augmenting EFL listening proficiencies among sixth-grade students in primary school. The sample of the study comprised 80 pupils segregated into two distinct groups. The research instruments employed encompassed an EFL listening skills checklist to identify the primary listening proficiencies necessitated for advancement by sixth-grade primary students, a pre-post listening skills assessment to gauge students' listening abilities both prior to and post-implementation of the program, and a grading rubric for evaluation purposes. The outcomes of the investigation revealed that the students in the experimental group witnessed a notable improvement in their EFL listening skills consequent to the utilization of the artificial intelligence-infused program.

Similarly, a study carried out by Jiahao and Xujie (2020) demonstrated that the utilization of Autonomous Listening Study (ALS) proved to be effective in enhancing learners' confidence within the realm of Artificial Intelligence education. The integration of AI features sparked a higher level of motivation among students, thereby enhancing their listening abilities. From the preceding discussion, it becomes apparent that artificial intelligence (AI) has the capacity to function as a potent instrument that demands attention in the realm of enhancing listening skills during educational processes.

Benefits and Shortcomings of Using AI to Teach the Listening Skills

One area where AI has the potential to revolutionize learning is in the development of listening skills. Listening skills are crucial in effective communication, and AI can provide valuable tools and resources to help individuals improve in this area. The following are some of the benefits of using AI to teach the listening skills:

One way in which artificial intelligence augments the pedagogical process of listening skills is the utilization of speech recognition technologies. AI-powered programs can accurately transcribe spoken language, allowing students to practice listening to native speakers and receive instant feedback on their performance. This real-time feedback can help students identify and correct any errors in their listening comprehension, leading to faster improvement and more efficient learning.

Additionally, AI can be used to create personalized listening exercises tailored to individual students' needs and abilities. By analysing students' listening comprehension skills and identifying areas for improvement, AI can generate customized listening activities that target specific weaknesses. This tailored approach can help students make faster progress in developing their listening skills and achieve greater proficiency in the language.

Moreover, AI can enhance listening instruction is through the use of Natural Language Processing (NLP) technology. NLP allows AI systems to analyse and understand human language, enabling them to generate more realistic and engaging listening materials. By incorporating NLP into listening exercises, educators can create more authentic and interactive learning experiences that closely resemble human language use.

Furthermore, AI can provide students with access to a wide range of listening materials in various languages and dialects. By utilizing AI-powered language translation tools, students can listen to and practice understanding different accents and regional variations of the language that is being learnt. This exposure to diverse linguistic inputs can help students develop more robust listening skills and adapt to a wider range of communication skills.

In addition to enhancing listening comprehension, AI can also be used to assess students' listening skills and track their progress over time. By analyzing students' performance on listening exercises and quizzes, AI can generate detailed reports on their strengths and weaknesses in listening comprehension. This data can help educators tailor their instruction to address students' specific needs and monitor their progress towards language proficiency goals.

Furthermore, AI-powered virtual assistants can provide students with additional support and practice opportunities outside the classroom. These virtual tutors can engage students in conversations, ask comprehension questions, and provide feedback on their listening skills in real-time. By interacting with AI tutors regularly, students can improve their listening skills and build confidence in their ability to understand and communicate in the target language.

Another benefit of using AI to teach listening is the flexibility and convenience it offers students. AI-powered language learning platforms can be accessed from anywhere at any time, allowing students to practice listening skills at their own pace and on their own schedule. This flexibility can accommodate learners with busy schedules and varying levels of commitment to language study, making it easier for students to incorporate listening practice into their daily routine.

Despite these advantages, it is important to consider the limitations of AI in teaching listening skills. AI systems may struggle to accurately assess subtle aspects of listening comprehension, such as understanding tone or nonverbal cues. Additionally, AI technology may not be as

effective in teaching certain listening skills, such as recognizing sarcasm or irony, which require a deeper understanding of cultural and contextual factors.

In conclusion, AI has the potential to revolutionize the way individuals learn listening skills by providing personalized feedback, targeted exercises, and immersive experiences that enhance comprehension and communication. As AI continues to evolve and improve, it will undoubtedly play a critical role in helping individuals develop effective listening skills and become proficient communicators in diverse linguistic contexts. By harnessing the power of AI, individuals can unlock new opportunities for growth and self-improvement in the realm of listening.

Artificial Intelligence and Speaking Skills

Speaking is an essential skill for individuals learning a second language, enabling them to engage with both native and non-native speakers in various real-life contexts. It plays a crucial role in influencing and moulding the overall language development of learners. Those who possess proficient speaking abilities often demonstrate exceptional performance in other language domains and can enhance their speaking proficiency through engaging in interactive exercises (Rahimi & Fathi, 2024).

Artificial Intelligence has experienced notable progress in recent years, particularly in the domain of verbal proficiency. AI-driven virtual assistants like Siri or Alexa have demonstrated heightened sophistication in comprehending and engaging with human speech. These advancements carry implications for a diverse array of sectors, spanning from customer service to the field of education. One domain where AI exhibits potential lies in the realm of language acquisition. AI-fuelled language learning platforms have the capacity to offer tailored feedback and support to learners, aiding them in enhancing their verbal abilities. These platforms leverage machine learning algorithms to assess a learner's speech patterns and furnish precise feedback on enunciation, syntax, and lexicon. Such a personalized strategy holds the potential to outperform traditional language learning techniques, enabling learners to practice verbal expression in a low-stress setting and receive instantaneous feedback.

Numerous studies have investigated the influence of artificial intelligence (AI) on the enhancement of oral communication skills among individuals learning English (Junaidi, 2020; 2022; Kang, 2022; Jalil et al., 2024). Astudy conducted by Jalil et al (2024) investigated the influence of an artificial intelligence platform on the speaking proficiency of English as a Foreign Language (EFL) learners. The study also delved into the attitudes and perceptions of EFL learners towards speaking activities facilitated by artificial intelligence. Thirty-three EFL learners were randomly assigned to the experimental group (AI group) while 32 EFL learners were allocated to the control group (face-to-face group). The participants in the AI group partook in interactive speaking activities facilitated by artificial intelligence through Andy English Chatbot, whereas those in the face-to-face group engaged in traditional peer-interaction speaking activities. Additionally, assessments such as International English Language Testing System (IELTS) speaking skill tests and a Willingness to Communicate (WTC) scale were utilized to gather quantitative data, followed by individual semi-structured interviews in the qualitative phase. The findings revealed that interactive speaking activities facilitated by artificial intelligence were more successful in enhancing the speaking skills and willingness to communicate (WTC) of EFL learners. Furthermore, the learners displayed favourable attitudes and perceptions towards the use of

artificial intelligence in speaking instruction.

Kang (2022) contrasted interactions between learners and AI with those between learners and native speakers, highlighting the significant role of AI in improving learners' speaking abilities. Junaidi (2020) provided further support for these findings, suggesting that instructional support from AI had a positive effect on learners' overall oral performance, encompassing fluency, grammatical correctness, vocabulary usage, and pronunciation

In summary, AI-powered speaking skills tools hold great potential for revolutionizing the way we learn languages and interact with technology. As AI continues to advance, it is likely that we will see even more sophisticated applications in this area. However, it is important to continue to monitor and address any ethical concerns that may arise from the use of AI in language learning. With careful oversight and regulation, AI has the potential to enhance our speaking skills and improve our interactions with technology in a meaningful way.

Benefits and Shortcomings of Using AI to Teach Speaking Skills

AI has the capability to furnish students with individualized feedback concerning their pronunciation, intonation, and fluency, assisting them in recognizing and rectifying errors promptly. This instantaneous feedback empowers students to self-correct and enhance their oral communication proficiency more swiftly compared to conventional teaching methodologies. Through the provision of tailored feedback, AI aids students in comprehending their areas of deficiency and monitoring their advancements over time, ultimately resulting in enhanced language skills.

Aside from the personalized feedback, AI can also present students with interactive practice prospects that enable them to participate in realistic speaking exercises within a low-stress setting. Via AI-driven language learning platforms, students can engage in conversations with virtual partners, partake in role-playing scenarios, and immerse themselves in interactive simulations mirroring real-life speaking circumstances. These hands-on practice opportunities empower students to cultivate their speaking competencies in a secure and encouraging environment, thereby fostering their confidence and fluency progressively.

Moreover, AI can adjust to the distinct learning requirements and preferences of students, offering a customized and adaptive learning encounter tailored to each student's specific needs. By evaluating students' speech patterns, proficiencies, and deficiencies, AI-fueledlanguage learning platforms can create personalized learning pathways targeting particular areas for enhancement, delivering a tailored curriculum that aligns with students' unique learning methodologies and inclinations. This individualized approach can accelerate students' progress and efficacy in their language learning voyage.

Furthermore, AI can assist educators in monitoring students' advancements and achievements more precisely and effectively, enabling them to supply precise support and intervention when necessary. By scrutinizing students' speaking proficiency levels, error tendencies, and learning trajectories, AI-driven language learning platforms can generate comprehensive reports and analytics furnishing insights into students' strong points and weak points. This data-centric approach empowers educators to pinpoint areas necessitating improvement, oversee students' advancements over time, and customize their instructional process to cater to students' individual requirements.

A primary drawback of utilizing AI for teaching speaking proficiencies is the absence of human interaction.

Speaking is inherently a human endeavour involving interaction, expression, and connection with others. Regardless of its sophistication, AI is incapable of replicating the subtleties of human interaction and the nuanced signals inherent in face-to-face communication. This shortfall can result in a lack of genuineness and depth in students' speaking exercises, impeding their capacity to cultivate natural speaking skills.

Furthermore, AI might struggle to replicate the spontaneity and unpredictability inherent in spoken language. Speaking necessitates reacting promptly to diverse scenarios, subjects, and conversational partners, demanding flexibility, creativity, and adaptability. AI systems may encounter challenges in emulating these varied and dynamic facets of spoken language, constraining students' opportunities to practice and enhance their speaking abilities in genuine contexts.

In addition, AI may not be able to address the cultural and contextual factors that influence speaking skills. Speaking is deeply embedded in cultural norms, social conventions, and contextual factors that shape communication patterns and styles. AI systems may not be able to account for these cultural and contextual nuances, leading to a lack of sensitivity and relevance in the student's speaking practice. This can hinder the student's ability to develop effective and appropriate speaking skills in diverse and multicultural contexts.

Conclusion

In conclusion, the benefits of utilizing AI for teaching listening skills are extensive, comprising personalized feedback, interactive practice opportunities, instant corrections, and adaptive learning pathways. Integration of AI in language learning curricula enables educators to deliver a more efficient and effective learning experience, ultimately enhancing students' language proficiency and fluency. The continuous advancement and evolution of AI present opportunities to revolutionize the pedagogy of teaching and learning speaking skills, thereby enriching language education and empowering students to communicate confidently and effectively in a globalized context.

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