ENHANCING ENGLISH LANGUAGE ACQUISITION THROUGH TECHNOLOGY-BASED APPLICATIONS

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Abstract

The research is a systematic review that uses descriptive qualitative research methods to collect all articles relevant to AI Technology-based applications for English language acquisition. The methodology used to analyze the data was   the descriptive qualitative research method, where each article was analyzed in detail to identify patterns, key findings, and key characteristics relating to the use of AI Technology in English language acquisition. The results of this analysis were then used to compile a research report describing the development and trends of the application of AI Technology in the context of English language learning. The research results included several studies that explored the use of AI in English language learning, highlighting the potential of AI to enhance language acquisition through interactive and personalized learning experiences. The studies also emphasize the importance of balancing technology and human engagement, as well as the need to approach AI language learning critically, taking into account privacy concerns. Overall, this research shows that AI has the potential to revolutionize language learning by providing personalized, and accessible tools to improve English language competence.

Keywords: artificial intelligence, language acquisition, English skills

INTRODUCTION

Language acquisition refers to the process of learning and developing language through exposure, interactive, and cognitive development, as it represents a general understanding of how language acquisition occurs (Lidz & Perkins, 2018). It is in line with the views of various linguists and cognitive psychologists, including Noam Chomsky, B.F. Skinner, and many more. This idea is a foundational concept in the fields of linguistics, cognitive science, and psycholinguistics, and technology can be part of language acquisition.

Mastery of English language skills is not only limited to consciously mastering grammar rules and vocabulary. According to the theory of Stephen D. Krashen, a language learning theorist, it is important to understand that effective

language proficiency also involves sufficient exposure to and experience of the language (Felix, 1978). In the context of English language learning, this means that learners need to engage in listening activities and read texts that are appropriate to their level of understanding. Krashen's Input Hypothesis theory states that effective language learning occurs when a person is exposed to language that is slightly above their comprehension level, creating opportunities to expand vocabulary and understand language structures naturally. By understanding Krashen's theory and integrating it into English learning methods, individuals can design a more holistic and contextualized approach in advancing language proficiency

In addition, the acquisition of English language skills also involves aspects of motivation and communicative interaction. Intrinsic motivation towards English, perhaps caused by an interest in the culture, a desire to communicate with native speakers, or other personal goals, can be a strong driver in achieving good language proficiency. Speaking activities in communicative contexts, such as participating in conversations or collaborative projects, are also key in effective English language learning (Saville-Troike, 2012). The important thing to remember is that language acquisition is a process that takes time and dedication. With consistency and variety in learning methods, one can significantly improve language skills (Rifiyanti et al., 2023). Language learning can improve children's language skills, including vocabulary development, understanding the meaning of words, and the ability to construct sentences. All of these contribute to their cognitive development (Andriyanty et al., 2023). Intrinsic motivation also has an emotional component that can influence the language acquisition process. Learners who feel enthusiastic, happy or have a special interest in English tend to have a more positive learning experience (Misnan et al., 2021). The motivation to communicate with native speakers or with people who share a similar interest in a foreign language can encourage children to engage in online communities or social media platforms (Asrarudin & Dewi, 2021).

Technology has a significant impact on language acquisition, and its potential to change the way we learn languages is immense, Technology-based

applications can be used to improve language acquisition by allowing students the opportunity to practice their language skills in various contexts. Technology can be a valuable tool for improving language acquisition. Language learning apps, online language courses, language learning software, and language exchange websites are just a few examples of how technology can be used to support language learning (Desk, 2023). Technology is playing an important role in changing the way we understand, learn, and use language. That impact is significant, and its potential to change the way we learn languages is huge (Subekti, 2020). Technology has great potential to change the way we learn languages. It not only facilitates access to learning resources but also creates a more interactive, and customized learning environment (Angellia, 2020). This allows individuals to acquire language skills more efficiently and effectively, opening the door to various opportunities for cross-cultural communication and understanding (Syah & Angellia, 2020).

Technology allows learners to experience the target language in a more immersive and engaging way than conventional methods. This can accelerate the learning process and improve their language skills significantly. Technology also enables more interactive language learning. Various apps, software, and online platforms offer interactive exercises, educational games, and live communication that allow learners to practice speaking, listening, reading, and writing in the target language in a participatory and engaged way (Zhou & Wei, 2018). In the current era, one of the technologies that can be exposed to the impact of language acquisition, especially English, is artificial intelligence technology (AI). AI technology can be a valuable tool to support language acquisition. Instant feedback, personalized instruction, language learning apps, automated assessment, and language exchange are just a few examples of how AI technology can be used to support language learning.

AI technology can be used to provide personalized instruction tailored to the needs and learning styles of individual students, and AI technology can be used to automate language assessment, such as grading written assignments and assessing speaking proficiency (Intellas.com, 2023). AI is used in the development

of natural language processing systems that help machines understand and produce human language. It deals with language understanding and production, which is also an important part of the human language acquisition process (Fitria, 2022). In addition, AI can be used to analyze human speech, both in spoken and written form. It means that AI can be used to recognize, analyze, and assess human communication in an educational context (Ghafar, 2023). From the perspective of current research, AI improves ELT. All studies report positive effects of AI in general. This means that AI has the potential to change the way English is taught and learnt. AI can optimize English proficiency, translation, assessment, recognition, attitude, satisfaction, and more, AI can be used to overcome many difficulties in teaching/learning English, such as using Information Retrieval techniques to build reading comprehension skills, using Machine Translation to develop students' translation skills, using Automatic Speech Recognition techniques to learn correct pronunciation, and using Text-to-Speech techniques for blind and hearing-impaired students (Sharadgah & Sa'di, 2022).

Although AI has considerable potential in language education, there is still a lack of research on the subject and the existing research has begun to identify important areas of research that focus on aspects of language acquisition in particular. One of the issues that arises is how to provide appropriate input to AI-based technologies that are truly targeted at factors that can improve language acquisition. This research seeks ways to direct the development of AI technologies to suit specific needs in language learning. Based on this background and problems, the research aims to explore features in AI-based applications related to language acquisition, including features such as automatic translation, conversational understanding, speaking practice, grammar correction, and voice assistant.

METHOD

This research is a systematic review that uses a descriptive qualitative research method to collect all articles relevant to AI Technology-based

applications for English language acquisition. The methodology used to analyze the data was the descriptive qualitative research method, which articles are analyzed in detail to identify patterns, key finding and key characteristics related to the use of AI Technology in English language acquisition. The results of this analysis were then used to compile a research report describing developments and trends in the application of AI Technology in the context of English language learning.

RESULTS AND DISCUSSIONS

The process of language acquisition involves a several complex competencies and skills, some competencies related to the process of language acquisition, one of which is the ability to perceive the sentences heard. This sentence explains that when we are trying to understand what another person is saying, we must use our ability to understand and perceive the words they are saying. This includes understanding the sentence structure, the meaning of the words, as well as the context used in the conversation .(Warfelt, 2012). In this case, AI can help improve the ability to perceive heard sentences by using speech recognition technology. This technology allows AI to recognize and understand the speech heard and convert it into written text or voice commands. In addition, AI can also assist in providing feedback or correction on incorrect pronunciation and intonation, thereby helping to improve the ability to perceive heard sentences. In this case, AI can be used as a tool in the language acquisition process (Oluwafemi Ayotunde et al., 2023). Artificial Intelligence technology can improve English language acquisition by offering various features that can enhance the learning experience. In this section some of the key features of AI-based language learning apps that can enhance elements of English language acquisition.

The Use of AI Tools for Developing Speaking Skills

There are several Artificial Intelligence (AI) tools available that can help improve one's speaking skills. In this context, AI tools refer to various applications or software designed to help a person improve their speaking skills.

They may use technologies such as speech recognition, speech analysis, feedback, and speaking exercises to help users develop better speaking and communication skills. The results show that some of the AI tools include Duolingo, Talkspace, SmallTalk2me, ELSA, and Speech recognition software.

Duolingo is a language learning app that offers a gamified approach to language learning. The app offers a variety of exercises and lessons that focus on grammar, vocabulary, and pronunciation. Duolingo also offers stories that are targeted to the user's level and help them gain an immersive experience through the app. While listening to the stories, users can pick up on the nuances of the conversation, including pronunciation and inflection, which may be difficult to understand if not surrounded by native speakers of the language. The voice recognition capability also helps users develop their pronunciation skills. Duolingo allows users to learn languages at various levels, from beginner to advanced, and is available in multiple target languages, making it one of the most popular language learning apps worldwide (Weitzman, n.d.). SmallTalk2me uses artificial intelligence (AI) to simulate real-life English scenarios and interactions. The main target of this tool is people who are non-native English speakers, meaning English is not their first language. The goal of the tool is to help users become more fluent in spoken English. Fluency refers to the ability to speak the language fluently and confidently. After practicing, the tool can provide immediate feedback on the user's performance, helping them understand what they are doing well and where they need improvement. In essence, the tool is a language learning and improvement platform that uses AI to help non-native English speakers become more proficient in spoken English, focusing on vocabulary, grammar, and practical skills (Smalltalk2me, 2023). It is important to remember that language acquisition is a process that requires time and consistent practice. These apps can be useful tools in the process, but will not replace direct communication with native speakers, real-life experiences, or formal language courses in the complete language acquisition process.

The next AI Tool is TalkPal, a language tutor app that uses artificial intelligence technology. This means that it can interact with users, provide

information, and provide language training with the help of computers. Users can talk or chat about various interesting topics with this app. This provides variety and makes language learning more interesting. The app uses technology powered by GPT (Generative Pre-trained Transformer) to generate personalized responses. GPT is an artificial intelligence model that can generate text with a deep understanding of the language. The app will provide personalized responses based on previous interactions and conversations. This allows users to feel like they are talking to a tutor who understands their preferences and language skills. As such, TalkPal is a tool designed to help users improve their language skills through conversation and learning based on artificial intelligence technology. Personalized responses and improvement over time make it a useful tool in the language learning process. TalkPal is designed to help users with an initial understanding of language and those who want to improve their language skills. This includes individuals with language comprehension at the A2, B1, B2, C1, or C2 level in a given language, which often refers to the level of language comprehension in the European Language Qualifications Framework (CEFR) (Learning, n.d.). Google Voice and SIRI are speech recognition programs that listen to what you say and provide feedback on how well the program understands what you say by providing an estimate of your pronunciation accuracy. Speech recognition is the ability of a program to listen to the human voice and convert it into intelligible text or commands. Feedback on pronunciation accuracy means that the program will tell to what extent the pronunciation is correct or if there are any errors in the way the words are pronounced (Underwood, 2018). Another AI tool that can support language proficiency is the English Language Speech Assistant (ELSA). ELSA is an AI tool designed to help people improve their English pronunciation. It uses proprietary artificial intelligence technology to provide immediate and detailed feedback on pronunciation and can recognize the speech patterns of non-native speakers. ELSA offers personalized English lessons and various language learning activities and tools. ELSA can also evaluate and provide feedback on language skills and has been used by companies and schools to help their employees and students improve their English language skills. Overall, ELSA is

an AI-powered English coach that provides instant feedback and personalized instruction to help people improve their English pronunciation and communication skills (Dhivya et al., 2023). The digital and technological age has positively impacted the process of foreign language learning and acquisition by enabling easier access, more interactive learning, personalization, global connectivity, and better collaboration. These are positive developments in education and pedagogy that can support the language learning process (Tobing et al., 2023). In line with the principle of consistent exposure in language acquisition is the idea that learners need to be constantly exposed to the language they are learning. This means that the more frequently and continuously one engages in speaking, listening, reading, and writing in the language, the more effective the learning process will be. Technology, particularly language learning apps, plays a key role in supporting this principle. With real-time access to a wide array of language content, learners have unlimited opportunities to practice and deepen their understanding of the language being learnt. This includes interaction with exercises, and learning materials, as well as interaction with native speakers through voice or video recordings, making technology a very useful tool in ensuring consistent exposure to the language being learnt (Ali, 2014).

The Use of AI Tools for Developing Reading Skills

Improving language acquisition in reading skills can be challenging, some strategies can help. Some of the things one can do include starting with gradual reading and then moving on to authentic texts such as newspapers, magazines, and novels when one feels more comfortable with the language. This will expose a wider range of vocabulary and sentence structures, which can help improve reading. Alternatively, reading aloud can be very useful if the mind wanders and concentration wanes. By doing so, one can tune into the rhythm and cadence of the language being learnt. Reading aloud will also greatly help with pronunciation and make it possible to improve speaking in everyday situations (ICLS, 2021). AI tools such as TextCortex, ChatGPT, Duolingo, Memrise, Ready4Reading, and Amira Learning can help improve language acquisition in reading skills. These

tools leverage artificial intelligence technologies, including natural language processing, speech recognition, and other AI technologies, to personalize the learning experience and provide interactive guidance to learners in improving their reading skills. They can help in comprehending text, expanding vocabulary, and improving comprehension of reading content. Such AI technologies have proven themselves to be effective tools in supporting language acquisition and improving reading skills.

AI tools for language acquisition operate through a multifaceted approach that aims to improve the learning process. These tools offer a learning experience that is personalized and adjusted to each learner's needs, adapting content and pace to optimize comprehension and retention. Instant feedback mechanisms identify areas for improvement, so learners can correct mistakes and make progress in real-time. Gamification elements, such as interactive quizzes and challenges, make language learning engaging and fun. Speech recognition technology assesses pronunciation and fluency, helping with speaking and listening skills. Chatbots provide conversational practice, and through the use of natural language processing (NLP) and machine learning algorithms, these tools aid in reading, writing, listening, and speaking skill development. This comprehensive approach harnesses the power of AI to make language acquisition more effective and enjoyable, facilitating thorough foreign language acquisition (Adiguzel et al., 2023). In summary, artificial intelligence tools for language acquisition provide a comprehensive approach to facilitating the language learning process. They provide learning experiences that are tailored to individual needs, provide instant feedback, incorporate game elements to increase engagement, and use speech recognition technology and chatbots to practice speaking, listening, reading, and writing skills. With support from natural language processing and machine learning algorithms, these tools help learners acquire foreign languages more effectively and enjoyably. Overall, the use of artificial intelligence technology in language education promotes better proficiency in the four aspects of language skills, helping learners achieve a deeper and more diverse understanding of the language they are learning.

The Use of AI Tools for Developing Listening Skills

With the help of artificial intelligence (AI) tools, listening skills can be significantly improved. AI systems provide a variety of features that support the development of listening skills, including automatic transcription, context understanding, structured listening exercises, real-time feedback, diverse listening content, progress tracking, and listening material recommendations (Viktorivna et al., 2022). The integration of AI in language learning or communication training platforms helps listeners to more effectively understand and respond to conversations and improve their listening skills over time (Nuraini & Firmansyah, 2020). A language learning app that uses AI can automatically transcribe conversations in a foreign language into text, allowing users to view and listen to the text simultaneously (Cahya et al., 2022). This helps users to understand the context of the conversation better. In addition, the app can provide listening exercises ranging from interviews, and news to everyday dialogues in various language accents. During listening exercises, the AI provides immediate feedback if users mishear or fail to understand certain words. Users can also see their progress over time, .and the app recommends listening materials that match their ability level, helping them to continuously improve their listening skills over time. The use of AI in language learning, particularly in the context of English as a foreign language (EFL), has shown positive effects in improving listening skills. The integration of AI technologies, such as automatic speech recognition and text-to-speech techniques, has been shown to improve students' ability to recognize correctly spoken words and train them to understand conversations. The survey results mentioned in the document show that most respondents agreed or strongly agreed that AI apps helped improve their English listening skills. In addition, the use of AI companions in language learning has been reported to increase confidence in conversational practice, which can contribute to improving listening skills. Overall, the document suggests that AI can be a valuable tool for improving listening skills in language learning (Muthmainnah et al., 2022).

Several AI Tool apps that can help learn to listening English including TalkPal, Duolingo, Babbel, and Speechify. Although any more types of AI tools

can be used to improve language acquisition in terms of improving listening to English. Beginning with a discussion of Speechify. Speechify is an AI-powered text-to-speech app that can help with English listening practice. Speechify uses AI technology to convert written text, such as articles, books, or documents, into spoken words. This is particularly useful for individuals with visual impairments or those who prefer to listen to content rather than read it. In an educational context, speechify can help students to better listen to the subject matter, which can improve their understanding of certain topics. Overall, Speechify is a valuable tool for English listening practice that can help learners improve their listening comprehension and pronunciation skills (Speechify.com, 2023).

The main skills targeted in the EFL listening skills checklist are phonology (sound discrimination), vocabulary, and overall comprehension. As a result, several AI tools were used in this study. These include AI Board. This board allows teachers to add audio clips, video clips, films, songs, electronic microscopes, interviews, and various websites to their curriculum. It also provides tools such as a timeline maker, spell checker, and word generator. Artificial intelligence software on computers: AI software on computers in technology labs provides tools such as pens, highlighters, cameras, shapes, arrows, rulers, lenses, and more. These tools help students answer questions and complete activities. Language translation software: The research mentions the use of AI-based language translation software, specifically mentioning Google Translate. This software helps students check the meaning of difficult words and facilitates their reading comprehension skills. Online activities: The AI program included different types of online activities prepared by the researchers. These activities include listening and dragging answers, using the camera to take pictures from videos, completing tables, dragging items from magic boxes, performing online activities through site URLs, clicking buttons and making choices, and dragging sounds to pictures (Ghoneim & Elghotmy, 2021). AI tools can be a valuable resource for English listening practice, providing interactive language practice opportunities, creating engaging listening materials, offering valuable feedback on

pronunciation and speaking skills, and providing additional support for language learners in understanding spoken language.

Besides that, there are many AI apps and platforms that can help in learning English listening skills. Here are some popular examples: Duolingo: Apart from helping in learning grammar and vocabulary, Duolingo also has listening exercises that help users understand and speak English through dialogues and audio exercises. Rosetta Stone uses speech recognition technology to help users learn to listen and speak in English with content tailored to ability levels. Babbel is a language learning platform that offers listening exercises in English, including everyday dialogues and useful conversations. LingQ is a platform that allows users to learn English with original audio sources, such as podcasts and news while following subtitles. EnglishClub provides a variety of listening and speaking exercises in English with diverse topics and difficulty levels. FluentU uses authentic English videos, such as music videos, films, and news clips, to help users understand everyday conversations in English. And Elsa Speak: Elsa Speak is an app that focuses on pronunciation, but also provides listening and speaking exercises that can help improve listening skills in English (Fitria, 2022).

The Use of AI Tools for Developing Writing Skills

The challenges EFL learners face in the development of language acquisition especially writing skills and how the use of cognitive resources affects the quality of their writing tasks. With this understanding, educators and learners can look for ways to maximize the use of cognitive resources and improve foreign language writing skills, one of which is AI tools. Some popular AI tools used to improve writing skills include AI KAKU, a digital writing assistant that aims to reduce the cognitive burden associated with writing (Gayed et al., 2022). The second is ChatGPT. ChatGPT can be a valuable tool for improving writing skills in English. The app offers several benefits, including instant access to a vast repository of information and the ability to produce well-structured, grammatically correct sentences. Use ChatGPT to exchange ideas, receive feedback on your writing, and explore different writing styles. By engaging in

written conversations and seeking help from ChatGPT, it is possible to increase vocabulary, improve sentence structure, and gain inspiration for writing. However, it is important to remember that while ChatGPT can help in many aspects of writing, it is important to use it as a supplementary tool and continue practicing writing skills independently to develop full English proficiency (Tseng & Warschauer, 2023). Other AI tools that can be used to improve writing skills are Quillbot, WordTune, Jenni, ChatGPT, Paperpal, Copy.ai, and Essay Writer, the tools utilize artificial intelligence algorithms, natural language processin, and machine learning techniques to generate human-like texts. These AI writing tools can improve the quality of writing by suggesting improvements in grammar, spelling, and style. These tools can also help writers avoid plagiarism and ensure that their content is original (Marzuki et al., 2023). The challenges EFL learners face in the development of language acquisition especially writing skills and how the use of cognitive resources affects the quality of their writing tasks. With this understanding, educators and learners can look for ways to maximize the use of cognitive resources and improve foreign language writing skills, one of which is AI tools. Use ChatGPT to exchange ideas, receive feedback on your writing, and explore different writing styles. By engaging in written conversations and seeking help from ChatGPT, it is possible to increase vocabulary, improve sentence structure, and gain inspiration for writing. However, it is important to remember that while ChatGPT can help in many aspects of writing, it is important to use it as a supplementary tool and continue practicing writing skills independently to develop full English proficiency. These AI writing tools can improve the quality of writing by suggesting improvements in grammar, spelling, and style.

CONCLUSION

Based on these search results, it is clear that artificial intelligence (AI) has the potential to improve English language acquisition. AI-powered language learning tools can provide interactive and engaging tools that can adapt to each student's learning style, providing immediate feedback on pronunciation, grammar, and vocabulary. AI can also provide an individualized, interactive, and

data-driven learning experience, which can be tailored to each student's needs. In addition, AI-powered translation tools can help non-native English speakers to understand and interact with English materials more easily. AI can also help remove barriers to English language acquisition, it can also provide full-cycle support for the achievement of learning goals for students, including assessing sentence formation, grammatical accuracy, and adequate translation to and from students' native language. However, it is important to approach language learning with AI critically, taking into account privacy concerns, and maintaining a balance between technology and human engagement. It is also important to avoid over-reliance on AI tools for instruction, especially when students are learning English.

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