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The Potential of Artificial Intelligence in Improving Linguistic Competence: A Systematic Literature Review

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ABSTRACT

As AI technology develops, we can expect to see more innovative and effective language-learning tools emerge in the future. These tools have the potential to revolutionize the way we learn languages, making them more accessible and enjoyable for learners of all ages and abilities. AI-powered language learning tools can give learners access to a variety of resources, such as dictionaries, grammar guides, and sample texts. It helps learners to broaden their knowledge of the language and to improve their comprehension skills. This study aimed to carry out a systematic review exploring the potential of artificial intelligence in improving linguistic abilities. The literature search process was carried out on various databases (PubMed, Web of Sciences, and Google Scholar) regarding the analysis of artificial intelligence can improve linguistic competence. This study follows the preferred reporting items for systematic reviews and meta-analysis (PRISMA) recommendations. The use of AI in improving linguistic competence has great potential. Through personalized and adaptive learning experiences, interactive and immersive learning environments, instant feedback, and access to a wide range of resources, AI can help individuals broaden their language knowledge, improve comprehension, and hone their speaking skills.

1. Introduction

Artificial intelligence (AI) is rapidly changing the way we learn and interact with the world around us. In the area of language learning, AI is used to create new and innovative tools that can help learners improve their linguistic competence. AI-powered language learning tools can provide learners with personalized and adaptive learning experiences, interactive and immersive learning environments, instant feedback, and access to a variety of resources. These features can help learners develop more quickly and efficiently compared to traditional language learning methods. In addition, AI can be used to create new and interesting ways to learn languages. For example, AI-powered chatbots can be used to provide students with personalized practice in speaking and listening. AI can also be used to produce realistic and engaging language learning content, such as virtual worlds and interactive games.[1-3]

As AI technology develops, we can expect to see more innovative and effective language-learning tools emerge in the future. These tools have the potential to revolutionize the way we learn languages, making them more accessible and enjoyable for learners of all ages and abilities. AI-powered language learning tools can track learners' progress and adapt their lessons accordingly. This ensures that learners are challenged but not overwhelmed and that they learn at their own pace. AI-powered language learning tools can create realistic and engaging learning environments. For

example, students can practice their speaking skills with an AI-powered chatbot, or they can immerse themselves in a virtual world where they can interact with native speakers. AI-powered language learning tools can give learners instant feedback on their work. This helps students to identify and correct their mistakes and also helps them to track their progress over time.[4,5]

AI-powered language learning tools can give learners access to a variety of resources, such as dictionaries, grammar guides, and sample texts. It helps learners to broaden their knowledge of the language and to improve their comprehension skills.[6,7] This study aimed to carry out a systematic review of the exploration of the potential of artificial intelligence in improving linguistic abilities.

2. Methods

The literature search process was carried out on various databases (PubMed, Web of Sciences, and Google Scholar) regarding the analysis of artificial intelligence can improve linguistic competence. The search was performed using the terms: (1) "artificial intelligent" OR "AI" OR "AI linguistic" OR "artificial intelligent linguistic" AND (2) "AI" OR "linguistic competence." The literature is limited to original studies and published in English. The literature selection criteria are articles published in the form of original articles, a study about analysis of artificial intelligence can improve linguistic competence, studies were conducted in a timeframe from 2010-2023, and the main outcome was an analysis of artificial intelligence could improve linguistic competence. Meanwhile, the exclusion criteria were original articles that were not related to the analysis of artificial intelligence that could improve linguistic competence, the effect of artificial intelligence in another aspect, and duplication of publications. This study follows the preferred reporting items for systematic reviews and meta-analysis (PRISMA) recommendations.

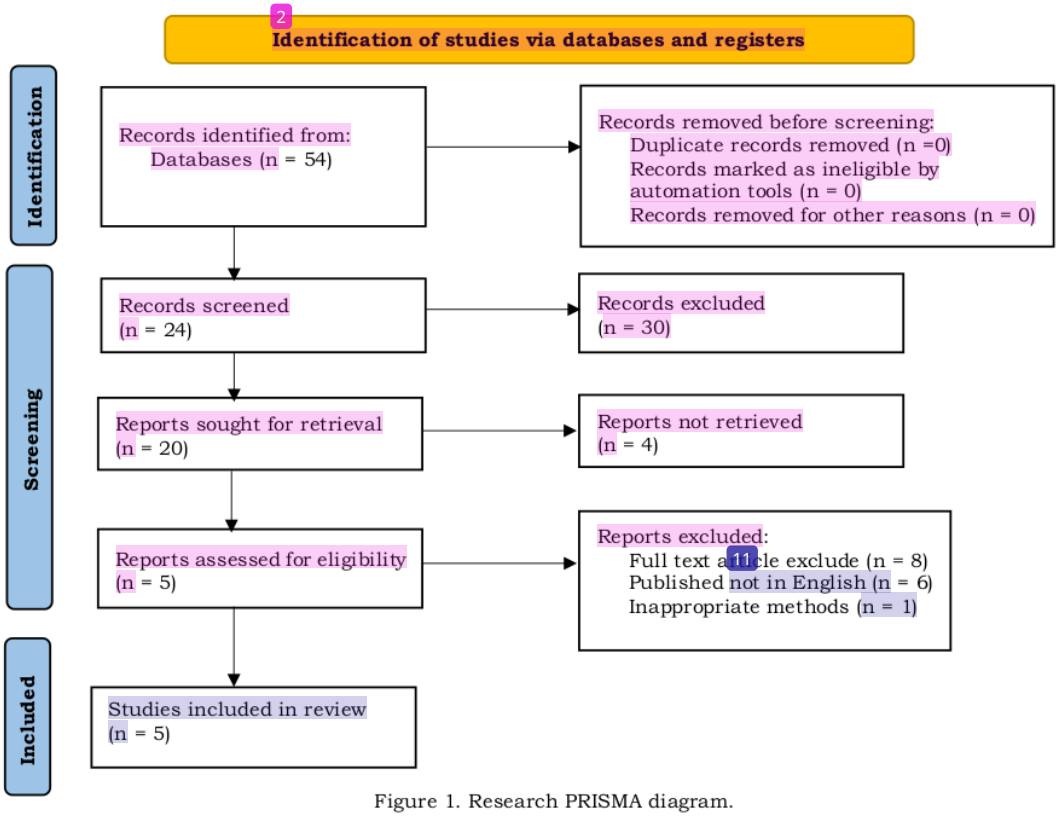

Figure 1. Research PRISMA diagram.

3. Results and Discussion

Personalized and adaptive learning experiences

Personalized and adaptive learning experiences are one of the key benefits of AI-powered language learning tools. These tools can track learners' progress and adjust their lessons accordingly. This ensures that learners are always challenged but not overwhelmed and that they are learning at their own pace. For example, an AI-powered language learning tool might start by assessing a learner's current level of proficiency. Once the tool has a good understanding of the learner's strengths and weaknesses, it can generate a personalized learning plan. This plan might include a variety of activities, such as grammar exercises, vocabulary drills, and reading comprehension tasks. The difficulty level of the activities would be adjusted based on the learner's progress.[8]

In addition to being personalized, AI-powered language learning tools can also be adaptive. This means that the tool can adjust its lessons in real-time, based on the learner's performance. For example, if a learner makes a mistake on an exercise, the tool might provide them with more targeted feedback or offer them a different exercise that is more challenging. Personalized and adaptive learning experiences can help learners to progress more quickly and efficiently than they would with traditional language learning methods. This is because these experiences are tailored to the individual learner's needs and learning style. As a result, learners are more likely to stay engaged and motivated, which can lead to faster learning.[9]

Learners are more likely to stay engaged and motivated when they are learning at their own pace and on their own terms. Personalized and adaptive learning experiences can help learners to achieve better learning outcomes. This is because the lessons are tailored to the individual learner's needs and learning style. Personalized and adaptive learning experiences can help to reduce frustration. This is because the lessons are adjusted based on the learner's performance, so they are not constantly struggling with exercises that are too difficult. Personalized and adaptive learning experiences can help to increase confidence. This is because learners see their progress over time, and they know that they are learning at their own pace.[10]

Interactive and immersive learning environments

Interactive and immersive learning environments are another key benefit of AI-powered language learning tools. These environments can help learners to practice their language skills in a realistic and engaging way. This can help learners to develop a deeper understanding of the language and to become more fluent in their speaking, listening, reading, and writing skills. There are a number of ways that AI can be used to create interactive and immersive learning environments. For example, AI can be used to generate realistic and engaging language learning content, such as virtual worlds and interactive games. AI can also be used to create chatbots that can provide learners with personalized practice in speaking and listening.[11]

Virtual worlds can provide learners with a realistic and engaging way to practice their language skills. For example, learners can explore virtual cities and towns, interact with native speakers, and complete tasks in the target language. Interactive games can also be a great way to practice language skills. Games can be designed to target specific language skills, such as vocabulary, grammar, or pronunciation. Games can also be used to create a sense of competition and motivation, which can help learners to stay engaged. Chatbots can provide learners with personalized practice in speaking and listening. Chatbots can be programmed to simulate conversations with native speakers. This can help learners to develop their conversational skills and to improve their fluency.[12]

Interactive and immersive learning environments can be a powerful tool for helping learners to improve their linguistic competence. These environments can make language learning more fun and engaging, which can lead to faster and more effective learning. Learners are more likely to stay engaged and motivated when they are learning in a fun and engaging way.

Interactive and immersive learning environments can help learners to achieve better learning outcomes. This is because they provide learners with a realistic and engaging way to practice their language skills. Interactive and immersive learning environments can help to reduce anxiety. This is because they provide learners with a safe and supportive environment to practice their language skills. Interactive and immersive learning environments can help to increase confidence. This is because learners see their progress over time, and they know that they are improving their language skills.[13]

Instant feedback

Instant feedback is another key benefit of AI-powered language learning tools. This feedback can be provided in a variety of ways, such as through grammar checkers, chatbots, and speech recognition software. Instant feedback can help learners to identify and correct their mistakes quickly and easily. This can help learners to improve their accuracy and fluency in their language skills.[14]

Grammar checkers can be used to identify and correct grammatical errors in writing. This can help learners to improve their accuracy and fluency in their writing skills. Chatbots can be used to provide instant feedback on pronunciation. Chatbots can be programmed to listen to a learner's speech and provide feedback on their pronunciation. This can help learners to improve their pronunciation and to develop a more authentic accent. Speech recognition software can be used to provide instant feedback on speaking skills. Speech recognition software can be used to transcribe a learner's speech and provide feedback on their pronunciation, grammar, and fluency. This can help learners to improve their speaking skills and to become more fluent in their speech. Instant feedback can be a powerful tool for helping learners to improve their linguistic competence. This feedback can help learners to identify and correct their mistakes quickly and easily, which can lead to faster and more effective learning.[15]

Instant feedback can help learners to improve their accuracy in their language skills. This is because they can identify and correct their mistakes quickly and easily. Instant feedback can help learners to improve their fluency in their language skills. This is because they can learn from their mistakes and improve their pronunciation and grammar over time. Instant feedback can help to reduce frustration. This is because learners can identify and correct their mistakes quickly and easily, so they are not constantly struggling with the same errors. Instant feedback can help to increase motivation. This is because learners see their progress over time, and they know that they are improving their language skills.[16]

Access to a wide range of resources

Access to a wide range of resources is another key benefit of AI-powered language learning tools. These tools can provide learners with access to a variety of resources, such as dictionaries, grammar guides, and sample texts. This can help learners to expand their knowledge of the language and to improve their comprehension skills. AI-powered dictionaries can provide learners with instant access to definitions, examples, and pronunciations of words. This can help learners to expand their vocabulary and to improve their understanding of the language. AI-powered grammar guides can provide learners with explanations of grammar rules, exercises, and examples. This can help learners to improve their grammar skills and to write more effectively in the target language. AI-powered sample texts can provide learners with examples of authentic language use. This can help learners to improve their comprehension skills and to develop a better understanding of the target culture.[17]

Access to a wide range of resources can be a powerful tool for helping learners to improve their linguistic competence. These resources can help learners to expand their knowledge of the language and to improve their comprehension skills. Access to a wide range of resources can help learners to expand their knowledge of the language. This is because they

can access a variety of resources that cover different aspects of the language. Access to a wide range of resources can help learners to improve their comprehension skills. This is because they can access a variety of resources that provide different examples of how the language is used. Access to a wide range of resources can help to reduce frustration. This is because learners can find the resources that they need to learn the language, and they do not have to struggle to find the information that they need. Access to a wide range of resources can help to increase motivation. This is because learners can find the resources that they enjoy learning from, and they are more likely to stick with the language learning process if they are enjoying it.[18-20]

4. Conclusion

The use of AI in improving linguistic competence has great potential. Through personalized and adaptive learning experiences, interactive and immersive learning environments, instant feedback, and access to a wide range of resources, AI can help individuals broaden their language knowledge, improve comprehension, and hone their speaking skills. With the continuous development of AI technology, we can expect increasingly sophisticated and effective solutions to support the development of linguistic competencies in the future.

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