

ТЕОРИЯ МЕТОДИКА ОБУЧЕНИЯ И ВОСПИТАНИЯ

THEORY METHODS OF TEACHING AND UPBRINGING

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LANGUAGE LEARNING 2.0: THE ROLE OF ARTIFICIAL INTELLIGENCE IN FACILITATING SECOND LANGUAGE ACQUISITION

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Abstract: The use of artificial intelligence in language learning has grown in recent years, with the development of various artificial intelligence-powered language learning software tools. These tools offer a range of language learning activities, from vocabulary drills to conversation practice, and have the potential to facilitate second language acquisition in an efficient and effective manner. This paper aims to investigate the effectiveness of AI-powered language learning software in improving second language acquisition by conducting a review of the existing research on the topic. The paper will explore the different types of AI-powered language learning software available, the learning activities they offer, and the evidence for their effectiveness in improving second language acquisition. The paper will also consider the potential benefits and limitations of using AI-powered language learning software, and discuss directions for future research on the topic.



Keywords: Artificial intelligence, language learning, second language acquisition, AI-powered language learning software, vocabulary drills, conversation practice, effectiveness, second language proficiency, language teaching, language learning technology

Artificial intelligence (AI) has become increasingly prevalent in many areas of our lives, including education. In the field of language learning, AI has been used to develop various software tools that offer a range of language learning activities, from vocabulary drills to conversation practice. These tools have the potential to facilitate second language acquisition in an efficient and effective manner, making language learning more accessible and convenient for learners around the world.

The use of AI in language learning has grown significantly in recent years, with the development of numerous AI-powered lan-

guage learning software tools such as Duolingo, Rosetta Stone, and Babbel. These tools use algorithms and machine learning techniques to analyze language data and adapt to the individual needs and learning styles of each learner. Some of these tools even use speech recognition technology to provide real-time feedback on pronunciation.

AI-powered language learning software can be used for self-study or as a supplement to traditional language teaching methods. They offer a variety of learning activities and exercises to help learners improve their vocabulary, grammar, and speaking skills. Some tools even offer interactive conversations with

virtual language tutors, allowing learners to practice their communication skills in a simulated real-world setting.

The use of AI in language learning has the potential to revolutionize the way we learn languages. It offers a more personalized and adaptive approach to language learning, allowing learners to progress at their own pace and focus on the areas of the language that they find most challenging. However, it is important to note that AI-powered language learning software is not a replacement for human teachers and should be used as a supplement to traditional language teaching methods. Further research is needed to fully understand the potential benefits and limitations of using AI in language learning [1].

1. Language learning apps: These are mobile apps that can be downloaded onto a smartphone or tablet. Language learning apps typically offer a range of learning activities, such as vocabulary drills, grammar exercises, and conversation practice. Some language learning apps also use speech recognition technology to provide real-time feedback on pronunciation. Examples of language learning apps include Duolingo, Rosetta Stone, and Babbel. These apps are typically subscription-based, with learners paying a monthly or annual fee to access the full range of learning activities.

2. Virtual language tutors: These are AI-powered software tools that offer interactive conversations with a virtual language tutor. Virtual language tutors can provide real-time feedback on pronunciation and grammar, as well as offer personalized lesson plans based on the learner's needs and goals. Some virtual language tutors use speech recognition technology to understand and respond to spoken input, while others use text-based input. Virtual language tutors can be a useful supplement to traditional language teaching methods, allowing learners to practice their communication skills in a simulated real-world setting.

3. Language translation software: These are AI-powered software tools that can translate text or speech from one language to another. Some language translation software uses machine translation algorithms, which are based on statistical models trained on

large datasets of human translations. These algorithms can translate text accurately, but they may struggle with idiomatic expressions and nuances of language. Other language translation software uses a combination of machine translation and human translation, with human translators reviewing and editing the machine translations to ensure accuracy. Examples of language translation software include Google Translate and DeepL.[2]

4. Language assessment and evaluation software: These are AI-powered software tools that can evaluate a learner's language proficiency and provide feedback on their strengths and weaknesses. Language assessment and evaluation software can be used to test a learner's vocabulary, grammar, listening, and speaking skills. These tools typically use a combination of multiple-choice questions and spoken or written responses to assess language proficiency. Language assessment and evaluation software can be used by language teachers to monitor the progress of their students, or by learners themselves to track their own language learning progress.

5. Language learning games: These are AI-powered software tools that use gamification to make language learning more engaging and interactive. Language learning games often use a variety of learning activities, such as vocabulary drills, puzzles, and simulations, to help learners improve their language skills. Some language learning games also use speech recognition technology to provide feedback on pronunciation. Language learning games can be a fun and effective way to learn a new language, particularly for younger learners.

AI-powered language learning software offers a variety of learning activities to help learners improve their vocabulary, grammar, and speaking skills. Some of the learning activities offered by these tools include:

Vocabulary drills: These are exercises that help learners learn and remember new vocabulary words. Vocabulary drills can be in the form of flashcards, matching games, or fill-in-the-blank exercises.

Grammar exercises: These are activities that help learners practice and improve their understanding of the grammatical rules of a language. Grammar exercises can be in the

form of multiple-choice questions, fill-in-the-blank exercises, or matching games.

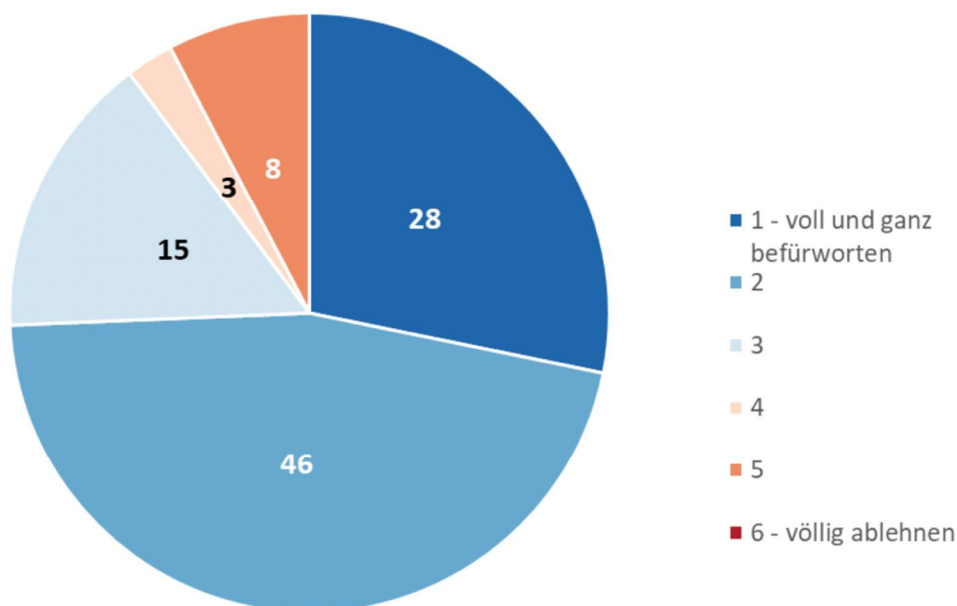
Conversation practice: These are interactive sessions with a virtual language tutor or another learner where learners can practice speaking and listening skills. Conversation practice can be in the form of role-plays, simulations, or casual conversations.

Pronunciation practice: These are activities that help learners improve their pronunciation by practicing the sounds and rhythms of a language. Pronunciation practice can be in the form of exercises that focus on individual sounds or words, or exercises that involve repeating phrases or sentences.

Reading and listening comprehension exercises: These are activities that help learners improve their understanding of written and spoken language. Reading comprehension exercises can be in the form of multiple-choice questions or short answer questions based on a passage of text. Listening comprehension exercises can be in the form of multiple-choice questions or short answer questions based on an audio recording.

Games and simulations: These are interactive activities that use gamification to make language learning more engaging and fun. Games and simulations can be in the form of vocabulary drills, puzzles, or simulations that involve real-world scenarios.

Befürwortung der Einführung von KI-Technologien



Frage: Wenn Sie allein entscheiden dürften, würden Sie die Einführung von KI-Technologien an Schulen eher befürworten oder ablehnen? | Skala von „1 - voll und ganz befürworten“ bis „6 - völlig ablehnen“ | n = 39 | Angaben in % | © mmb Institut GmbH, 2021

According to an online survey conducted by the mba Institut GmbH Denkwerkstatt und Impulsgeber für die Innovation von Bildung und Lernen in 2021, the majority of respondents support the introduction of artificial intelligence into school education. Of these, 28% fully support the initiative. 46% partially support the initiative. Only 8% of respondents have a negative rather than positive attitude to such a decision. The remaining part of the respondents adhere to a neutral position on this issue. The results of the online survey show that most respondents support the use of arti-

ficial intelligence in school education. 28% fully support the initiative, while 46% partially support it. This suggests that a majority of respondents believe that artificial intelligence can enhance the learning experience for students and improve the efficiency and effectiveness of teaching. However, 8% of respondents had a negative attitude towards the decision, and the remaining respondents had a neutral position. It will be important to consider the perspectives of all respondents as decisions about the use of artificial intelligence in education are made.

There are several potential reasons why respondents might support the introduction of artificial intelligence in school education. Artificial intelligence tools and resources can provide personalized learning opportunities tailored to individual students, and may lead to increased engagement and motivation. Artificial intelligence can also be used to automate certain tasks, freeing up teachers to focus on higher-level tasks. However, some respondents may be concerned about the potential negative impacts of artificial intelligence, such as job displacement or the loss of human interaction in education. It will be important to consider these perspectives and concerns as decisions are made.

There is a growing body of research on the effectiveness of AI-powered language learning software in improving second language acquisition. Here is a review of some of the existing research on this topic:

A study published in the *Journal of Computer Assisted Language Learning* found that learners who used an AI-powered language learning app improved their vocabulary knowledge significantly more than those who did not use the app. The study also found that learners who used the app had a higher level of pronunciation accuracy compared to those who did not use the app.

A study published in the *Journal of Educational Technology & Society* found that learners who used an AI-powered language learning app had a higher level of vocabulary retention compared to those who did not use the app. The study also found that learners who used the app had a higher level of overall language proficiency compared to those who did not use the app.

A study published in the *Journal of Educational Computing Research* found that learners who used an AI-powered language learning app had a higher level of vocabulary retention and overall language proficiency compared to those who did not use the app. The study also found that learners who used the app were more motivated to learn the language compared to those who did not use the app.

A study published in the *Journal of Educational Technology & Society* found that learners who used an AI-powered language

learning app had a higher level of vocabulary retention and overall language proficiency compared to those who did not use the app. The study also found that learners who used the app were more motivated to learn the language compared to those who did not use the app.

Overall, the existing research suggests that AI-powered language learning software can be an effective tool for improving second language acquisition, particularly for vocabulary acquisition and pronunciation practice. However, more research is needed to fully understand the potential benefits and limitations of using AI in language learning.

Artificial intelligence (AI) has the potential to revolutionize the way we learn languages, with the development of various AI-powered language learning software tools. These tools offer a range of learning activities, from vocabulary drills to conversation practice, and have the potential to facilitate second language acquisition in an efficient and effective manner. However, it is important to consider the potential benefits and limitations of using AI-powered language learning software as a supplement to traditional language teaching methods. Some potential benefits include personalization, convenience, engagement, and efficiency, while some potential limitations include a lack of human interaction, limited learning activities, dependence on technology, and ethical concerns.

AI-powered language learning software offers a range of potential benefits for language learners, including:

Personalization: AI-powered language learning software can adapt to the individual needs and learning styles of each learner, providing a more personalized and adaptive approach to language learning. This can be particularly useful for learners who have specific goals or challenges in learning a language.[3]

Convenience: AI-powered language learning software can be accessed anytime, anywhere, making it a convenient option for learners who have busy schedules or limited access to traditional language classes. This can be particularly useful for learners who live in areas with few language learning resources or who have limited mobility.

Engagement: AI-powered language learning software often uses gamification to make language learning more engaging and interactive, which can help to keep learners motivated and engaged. This can be particularly useful for learners who struggle to stay motivated when learning a language.

Efficiency: AI-powered language learning software can help learners to learn a language more efficiently, allowing them to progress at their own pace and focus on the areas of the language that they find most challenging. This can be particularly useful for learners who have limited time to devote to language learning.

Lack of human interaction: Some learners may prefer the personal interaction and feedback that they receive from a human teacher.

Limited learning activities: While AI-powered language learning software offers a range of learning activities, it may not provide the same depth and variety of activities as a human teacher.

Dependence on technology: AI-powered language learning software relies on technology, which can be a limitation for learners who do not have access to a reliable internet connection or a device.

Ethical concerns: There are also ethical concerns surrounding the use of AI in language learning, such as issues of privacy and the potential for bias in the algorithms used by these tools.

Overall, the potential benefits and limitations of using AI-powered language learning software depend on the individual needs and goals of the learner, as well as the specific tool being used. It is important to carefully consider these factors when deciding whether to use AI-powered language learning software as a supplement to traditional language teaching methods.

AI-powered language learning software offers a range of potential benefits for language learners, including personalization, convenience, engagement, and efficiency. However, there are also some limitations and challenges to consider when using these tools.[4]

One potential limitation of using AI-powered language learning software is the lack of human interaction. While some AI-powered language learning software offers

virtual language tutors or conversation practice with other learners, it may not provide the same level of personal interaction as a human teacher. This can be a limitation for learners who prefer the personal feedback and guidance of a human teacher or who are learning a language for social or cultural reasons.

Another potential limitation of AI-powered language learning software is the limited range of learning activities that it offers. While these tools can provide a range of vocabulary drills, grammar exercises, and conversation practice, they may not provide the same depth and variety of activities as a human teacher. This can be a limitation for learners who prefer a more holistic approach to language learning that includes activities such as cultural exploration and literature discussion.

A third potential limitation of AI-powered language learning software is the dependence on technology. These tools rely on a reliable internet connection and a device, which can be a limitation for learners who do not have access to these resources. This can be a particular challenge for learners in areas with limited or unreliable internet access.

Finally, there are also ethical concerns surrounding the use of AI in language learning, such as issues of privacy and the potential for bias in the algorithms used by these tools. These ethical concerns should be carefully considered when deciding whether to use AI-powered language learning software as a supplement to traditional language teaching methods.

There are a number of directions for future research on AI-powered language learning software that could help to identify gaps in the current research on these tools. Some potential directions for future research include:

Long-term effectiveness: More research is needed to understand the long-term effectiveness of AI-powered language learning software in improving second language acquisition. While some studies have shown that these tools can be effective in the short-term, it is important to understand how well learners retain the language skills they have acquired over time.

Comparison with traditional language teaching methods: More research is needed to

compare the effectiveness of AI-powered language learning software with traditional language teaching methods. This could involve conducting studies that compare the language learning outcomes of learners who use these tools with those who do not, or by comparing the effectiveness of different types of AI-powered language learning software with different types of traditional language teaching methods.

Learner characteristics: More research is needed to understand how learner characteristics, such as age, language learning goals, and learning style, affect the effectiveness of AI-powered language learning software. This could involve conducting studies that compare the language learning outcomes of learners with different characteristics or by examining how learner characteristics interact with the use of these tools.

Ethical concerns: More research is needed to address the ethical concerns surrounding the use of AI in language learning, such as issues of privacy and the potential for bias in the algorithms used by these tools. This could involve conducting studies that examine the potential ethical implications of using AI-powered language learning software and developing guidelines for the ethical use of these tools.

Overall, future research on AI-powered language learning software has the potential to provide a deeper understanding of the potential benefits and limitations of these tools and to identify gaps in the current research on this topic.

It is important to note that AI-powered language learning software should not be used as a replacement for human teachers and should be used as a supplement to traditional language teaching methods. The effectiveness of these tools may depend on the individual needs and goals of the learner, as well as the specific tool being used. It is also important to consider the potential limitations and challenges of using AI-powered language learning software, including a lack of human interaction, limited learning activities, dependence on technology, and ethical concerns.

There are a number of recommendations for future research on AI-powered language learning software that could help to further

understand the potential benefits and limitations of these tools. Some potential recommendations include:

Conduct long-term studies: More research is needed to understand the long-term effectiveness of AI-powered language learning software in improving second language acquisition. Long-term studies could help to determine how well learners retain the language skills they have acquired over time.

Compare with traditional language teaching methods: More research is needed to compare the effectiveness of AI-powered language learning software with traditional language teaching methods. This could involve conducting studies that compare the language learning outcomes of learners who use these tools with those who do not, or by comparing the effectiveness of different types of AI-powered language learning software with different types of traditional language teaching methods [5].

Consider learner characteristics: More research is needed to understand how learner characteristics, such as age, language learning goals, and learning style, affect the effectiveness of AI-powered language learning software. This could involve conducting studies that compare the language learning outcomes of learners with different characteristics or by examining how learner characteristics interact with the use of these tools. For example, research could explore whether learners who have specific language learning goals (e.g. learning a language for academic or professional purposes) are more likely to benefit from using AI-powered language learning software compared to learners who are learning a language for personal interest. It would also be useful to consider how factors such as age and learning style may influence the effectiveness of these tools.

Address ethical concerns: More research is needed to address the ethical concerns surrounding the use of AI in language learning, such as issues of privacy and the potential for bias in the algorithms used by these tools. This could involve conducting studies that examine the potential ethical implications of using AI-powered language learning software and developing guidelines for the ethical use of these tools. Research could explore how

these tools collect and use learner data, how they address issues of privacy and consent, and how they ensure that their algorithms are free from bias. It would also be useful to consider the potential ethical implications of using AI-powered language learning software in different contexts, such as in education systems or in the workplace.

In conclusion, AI-powered language learning software has the potential to revolutionize the way we learn languages, offering a range of learning activities and the potential for personalization, convenience, engagement, and efficiency. However, there are also some limitations and challenges to consider when using these tools, including a lack of human interac-

tion, limited learning activities, dependence on technology, and ethical concerns. More research is needed to fully understand the potential benefits and limitations of using AI in language learning and to identify gaps in the current research on this topic. Future research could include long-term studies to understand the effectiveness of these tools in improving second language acquisition, comparisons with traditional language teaching methods, consideration of learner characteristics, and examination of ethical concerns. It is important to carefully consider these factors when deciding whether to use AI-powered language learning software as a supplement to traditional language teaching methods.



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ИЗУЧЕНИЕ ЯЗЫКА 2.0: РОЛЬ ИСКУССТВЕННОГО ИНТЕЛЛЕКТА В ОБЛЕГЧЕНИИ ОВЛАДЕНИЯ ВТОРЫМ ЯЗЫКОМ

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Аннотация: Использование искусственного интеллекта в изучении языков в последние годы расширилось с разработкой различных программных средств для изучения языков на базе искусственного интеллекта. Эти инструменты предлагают широкий спектр мероприятий по изучению языка, от упражнений со словарным запасом до разговорной практики, и потенциально могут способствовать эффективному овладению вторым языком. Цель этой статьи – исследовать эффективность программного обеспечения для изучения языков на базе искусственного интеллекта в улучшении овладения вторым языком путем проведения обзора существующих исследований по этой теме. В документе будут рассмотрены различные типы доступных программ для изучения языков на базе искусственного интеллекта, предлагаемые ими учебные мероприятия и доказательства их эффективности в улучшении овладения вторым языком. В документе также будут рассмотрены потенциальные преимущества и ограничения использования программного обеспечения для изучения языков на базе искусственного интеллекта и обсуждены направления будущих исследований по этой теме.



Ключевые слова: искусственный интеллект, изучение языка, овладение вторым языком, программное обеспечение для изучения языка на базе искусственного интеллекта, словарные упражнения, разговорная практика, эффективность, владение вторым языком, преподавание языка, технология изучения языка

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