

How AI Helps Second Language Learners Acquire Target Language: An Analysis from a Cross-Cultural Perspective

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Abstract. With the development of science and technology, artificial intelligence is gradually being applied in various fields. In the field of second language acquisition, AI, as an auxiliary tool, can effectively help learners acquire the target language. Language learning not only includes linguistic knowledge, but also the culture of the target language. This paper analyzes the advantages of AI in L2 acquisition from a cross-cultural perspective. By providing examples to illustrate the application of AI in second language acquisition and analyzing the unique advantages of AI from a cross-cultural perspective, the author found that AI can promote L2 acquisition in terms of cross-cultural content, cross-cultural functions, and the creation of cross-cultural environment. L2 learners should make appropriate use of the advantages of AI in cross-cultural perspectives to narrow the social distance to the target language, thus they can better acquire a second language. However, learners should also be aware of the potential risks of AI technology and engage more in real-life scenarios for communication.

Keywords: Artificial Intelligence; Cross-Culture; Second Language Acquisition.

1. Introduction

Since the 21st century, with the gradual maturity of computer technology, AI (Artificial Intelligence) technology has emerged and been applied in various fields of human production and daily life. In the field of education, AI, as a technical tool to assist language learning, is gradually being widely used. The use of AI technology to assist teaching in second language acquisition is a novel and feasible teaching method. This method is considered positive from multiple perspectives and can promote learning to a certain extent.

From the perspective of learning efficiency and initiative, some scholars believe that the use of smartphones can play an important role in improving learning efficiency [1]. This indicates that AI makes students' learning more active and can promote learning. From the perspective of personalized learning, some scholars believe that with AI technology, students can learn anytime. This is very different from the past when learning could only be done in schools or specific places, making learning freer and more convenient, which can also promote better learning [2].

In terms of language learning, the effectiveness of AI technology is also very significant. Language learning includes the learning of linguistic knowledge and the culture of the target language. Many studies have explored how language knowledge teaching is promoted with the help of AI. AI can help teachers set language learning tasks and provide personalized language knowledge that students need to supplement, such as explaining grammar rules and syntactic structures.

However, there is currently limited research on the role of AI in cultural-language teaching. It is necessary to explore the assistance of AI in second language acquisition from a cross-cultural perspective. According to the Acculturation Theory proposed by John Schumann in the 1970s, social distance has a significant impact on the acquisition of language input information by learners. If learners are socially or psychologically distant from the target language group, it will hinder the input of the target language [3]. Moreover, research has found that distance between the mother tongue and the target language has a significant impact on knowledge transfer [4]. This distance includes the social distance in Acculturation Theory, which is the distance between two cultures. This indicates

that language acquisition is closely related to the learner's distance from the target language's socio-cultural context. Therefore, by analyzing the technological advantages of AI at the cultural level in language learning, this paper attempts to explore the benefits of AI in second language acquisition from a cross-cultural perspective, while also providing insights into certain potential issues.

2. The Importance of Cross-Cultural Perspective in Second Language Acquisition

2.1. The Necessity of Learning Culture in Language Acquisition

Language acquisition is not only the learning of linguistic knowledge such as grammar systems, but also cross-cultural learning, which involves understanding the relevant knowledge and characteristics of the target language culture and comparing cultural differences with the mother tongue language. According to the Acculturation Theory mentioned above, language learning is closely related to social distance. When second language learners do not understand the socio-cultural background of the target language, and if the social distance from the target language is too far away, they will not be able to successfully acquire the second language.

Some scholars have pointed out that learning a foreign language is seen as a means of international communication, closely related to its active use as a tool for learning world cultures [5]. Therefore, one of the purposes of learning a foreign language is to understand the culture of the target country through language. Language is used for communication. Linguistic knowledge helps speakers organize correct language expression while understanding culture and cultivating cross-cultural cognition can provide communication content and eliminate cultural blind spots. Promoting second language acquisition from a cross-cultural perspective can enable students to understand the content of the other culture and feel the differences between the other culture and the local culture, thereby helping learners better adapt to the target language culture. In this perspective of language learning, students are required to understand a large number of characteristics and customs of the target language culture, and teachers are also required to provide corresponding target cultural resources for students.

2.2. Promoting Language Acquisition Through Cross-Cultural Learning

Second language learners can promote their L2 acquisition through cross-cultural learning. This includes two aspects. Firstly, by understanding cross-cultural differences, learners can make progress in language output stages such as speaking and writing, improving the accuracy and practicality of language use. For example, learners can learn about the differences in pronunciation between British English and American English through cross-cultural learning, and understand the pronunciation characteristics of the two cultures in spoken language. For students who are able to mimic the pronunciation of the target language, they can accurately use the pronunciation. For students who cannot fully achieve standard pronunciation, they can also distinguish the speaker's accent in communication, guess where they come from, and associate it with the cultural characteristics of the target country in conversation. This is an improvement in language output ability.

Additionally, cross-cultural learning also has benefits in the input stages of listening and reading. Scholars have pointed out that combining foreign language learning with cultural and social value learning can effectively promote the improvement of comprehension ability and help use language in specific communication tasks [6]. Learning the cultural knowledge of the target language provides positive assistance in reading articles, understanding the expressions of interlocutors, etc. It enables learners to better grasp the target information and effectively communicate with the content already learned in cross-cultural communication. Therefore, cross-cultural learning plays a promoting role in both the input and output stages of language. It is essential in second language acquisition.

2.3. Facilitating Interactive Communication and Context Understanding Using Cross-Cultural Learning

The criteria for acquiring a language include whether the learner can engage in interactive communication within the context of the target language. This requires the help of a cross-cultural perspective. From this perspective, teachers can create the context of the target language for students to teach, or students can autonomously enter the context of the target language to communicate. These practices can help learners better acquire the target language. The effectiveness of learning a second language in a single L1 context is not remarkable, as the L1 factor has a lasting and profound impact on learner cognition of the second language. For example, among English learners in China, there is a phenomenon of using “Chinglish”. This is actually the “Chinese English” expression caused by learning English in a Chinese contextual environment. Learners mistakenly transfer their Chinese context to situations where they use English, resulting in some inappropriate expressions. Cross-cultural learning can help learners better practice language use by understanding the contextual culture and communication methods of the target language.

The above three points all demonstrate the importance of cross-cultural perspective in second language acquisition. By comparing the cultural differences between the target language and the mother tongue, learners can better acquire the language and apply it appropriately for communication. AI-assisted learning technology can provide cross-cultural assistance to learners very well. Below, the author will briefly explain the types of AI-assisted language learning technology and analyze their advantages in second language acquisition.

3. AI-Assisted Language Learning Technology

3.1. Computer Assisted Language Learning

The use of technology to assist language learning can be traced back to Computer Assisted Language Learning (CALL) around the 1960s. CALL refers to the use of computers as tools to assist in language acquisition. Paul Gruba once pointed out that computers in assisted language learning serve as mentors, responsible for setting tasks, providing learning materials, and making corresponding evaluations [7]. CALL made teaching more convenient and to some extent improved the effectiveness of second language acquisition. However, from the current situation, CALL could not yet be defined as AI Assisted Language Learning. One of the definitions of artificial intelligence is "a computer system specifically designed to interact with the world through human abilities and behaviors that are essentially considered human intelligence" [8]. Computers at that time did not possess the characteristics of artificial intelligence according to the above definition. With the continuous development of social science and technology, especially after the 21st century, intelligent products such as mobile devices continue to emerge, and artificial intelligence technology has also begun to be applied in the field of second language acquisition. One commonly used technical assistance method is Mobile-Assisted Language Learning (MALL), which will be discussed in the following part.

3.2. Mobile-Assisted Language Learning

MALL is a type of artificial intelligence technology that mainly refers to language learning assisted by mobile intelligent devices such as smartphones, tablets, and other products. This technology has made significant progress compared to CALL. In the past, technology for assisted learning could only be used in specific situations with computers, but the emergence of mobile devices has improved this deficiency. Learners can carry mobile devices with them for language learning anywhere. With the assistance of such technology, learning becomes more convenient and efficient. Scholars have pointed out that mobile technology is a good opportunity for both language teachers and learners to learn foreign languages [9]. Taking smartphones as an example, there are many language learning apps on the phone, which can explain the language knowledge and culture they lack. They can also help teachers improve their foreign language proficiency, evaluate students' study conditions, and

thus promote teaching. A popular language learning software is Duolingo. This software supports learning multiple different languages, practicing through dialogue and game challenges to help learners acquire the language. Besides, there are many other intelligent language learning software available, and the author will not list them out here in detail.

3.3. Robot-Assisted Language Learning

Robot-Assisted Language Learning (RALL) is a more intelligent assisted learning technology that primarily learns language through interaction with robots. RALL has not yet been commonly used in English teaching in China, but research has shown that using story robots in English classrooms can improve reading, comprehension, and interaction abilities [10]. Compared to intelligent software on mobile devices, robots can provide learners with more personalized language learning. For example, if a learner uses a chatbot, it is like communication between two people in a real scenario. Robots provide targeted feedback and evaluate their level by receiving information expressed by the other party, and then provide appropriate language learning suggestions [11]. This model not only promotes teaching in the classroom, but also effectively helps learners make progress in L2 acquisition independently outside of class.

AI, as a powerful technology to assist language learning, does not mean that language acquisition no longer requires teachers. On the contrary, AI cannot understand human feelings and emotions, and cannot make timely and appropriate teaching behaviors, which is the reason why teachers cannot be replaced. In language acquisition, AI should be designed well and its advantages should be appropriately used to cooperate with teachers in teaching [12]. Below, the author will explore the advantages of AI in L2 acquisition from a cross-cultural perspective.

4. The Advantages of AI-Assisted Language Learning in Second Language Acquisition from a Cross-Cultural Perspective

4.1. Providing a Vast and Comprehensive Cultural Knowledge Using AI

One of the advantages of AI-Assisted Language Learning (AIALL) is the richness of the learning content. AI can provide massive information resources, while teachers do not have this advantage. These resources not only include linguistic knowledge or questions, but also relevant cultural content of the target country. In the past, people obtained language and cultural knowledge through lectures or searching for live broadcasts on some software. However, AI communication has the feature of immediacy. Once learners miss the time for live streaming or lectures, they cannot watch these resources again [13].

Artificial intelligence-assisted language learning can effectively improve this situation. For example, second language learners can immerse themselves in a target language environment with accurate pronunciation and practice their listening skills by watching talk show videos of the target language. Moreover, talk show videos often contain content about the target country's culture or cross-cultural comparisons with other cultures. Watching such talk shows is a very effective way for learners to learn a language. Yet talk shows are live and immediate. When learners are unable to watch on time, AIALL can effectively assist them in replay and even provide comparative translation or feedback. Another example is Duolingo. When learners are learning an L2 on this software, they will encounter topics related to the target country's culture. For example, in learning Cantonese, learners will see that Cantonese has different ways of addressing people and has diverse local dishes from Chinese. These are cross-cultural resources provided by AIALL in terms of content, which helps to better acquire a second language.

4.2. The Cross-Cultural Function of AI's Help in Better Language Acquisition

Another advantage of AIALL lies in its function to facilitate cross-cultural learning. AI technology can provide diverse learning functions, many of which are closely related to cross-cultural

communication. The prevalent oral practice software in recent years is an example. Learners engage in oral conversations with robots on intelligent software to train accurate pronunciation of their second language. Since the pronunciation possessed by artificial intelligence is derived from the authentic accent of the target language, such practice can improve the accuracy of language acquisition. Meanwhile, through human-computer interaction, learners can quickly improve their English-speaking skills and avoid awkward situations in practice [14]. This aspect promotes the practicality of L2 usage. Because in a mother tongue classroom, teacher-guided oral communication cannot be completely accurate, this cultural difference makes the effectiveness of L2 acquisition to some extent inferior to AI-assisted language learning.

In addition, if learners use RALL or communicate with digital people developed by AI technology, they can set the party as a person from the target country, assign different professions or identities, and engage in simulated communication. In communication, whether it is the language features and content expressed by the other party, or the nonverbal features (such as body posture or gestures), they are all cross-cultural differences. Through dialogue, learners can unconsciously understand cultural differences and cultivate awareness of the target culture, thereby improving their second language comprehension and output level. These features all enhance second language proficiency.

4.3. Creating Cross-Cultural Contexts and Interactive Communication with AI

Artificial intelligence not only helps with L2 acquisition from a cross-cultural perspective in terms of content and learning functions, but its advantages are also reflected in the creation of learning environments. AI can create the context of the target language culture. The target language context is closely related to the target culture. Learners can better acquire a second language in this virtual context. This function is also something that teachers cannot provide. Taking learning English as a second language as an example, artificial intelligence can interact with learners like peers. This kind of interaction creates a good environment for students to learn English [14]. Students immerse themselves in the environment of English communication, exercising their English proficiency and communication skills through listening, speaking, and other means in the English language and culture. This is a great advantage from a cross-cultural perspective. There is an artificial intelligence called "Explorez" that attempts to transform language learning into customized, social, and extracurricular experiences [15]. This approach not only offers the target context, but also promotes the social practice of language and culture from a cross-cultural perspective.

The learning environment not only refers to the shaping of context, but also includes the technological environment itself. Agca and Özdemir conducted an experiment on learning foreign language vocabulary through mobile technology. According to the experimental results, groups using mobile technology have a higher level of learning. They believe that the reason for this result is the advantages brought by the technological environment, including images and text [16]. This indicates that cultural content provided in a technological environment can better promote L2 acquisition.

5. Conclusion

Above all, this paper analyzed the importance of a cross-cultural perspective and how AI can help acquire the target language from this perspective. In short, AI provides massive resources in cross-cultural content and cross-cultural learning guidance in learning functions, and creates a target cultural context for learners to practice. These advantages of AI can enable learners to have a better understanding of the target language culture, shorten the social distance between the two languages, and thus promote L2 acquisition. Therefore, the author suggests that in L2 learning, both students and teachers can actively use AI as a tool to assist language learning and make rational use of its advantages in cross-cultural perspectives to solve learning problems. Students can exploit the personalized advantages of AI technology to enhance their understanding and cognition of the target language and culture, and attempt to train language in virtual communication scenarios created by AI. Teachers can use the massive cultural resources provided by AI (such as videos, etc.) to help students

understand the target language culture and compare the cultural differences between the two languages so that students can better adapt to the target language culture and use the L2 rationally and accurately.

Meanwhile, recognizing the potential risks of AI technology and preventing overuse are also very important. As an auxiliary tool, AI may also engage in cultural penetration while conveying the target language and culture, which has a negative impact on education. Moreover, the use of AI also carries some ethical and privacy issues. All of these indicate that the application of AIALL technology still faces many challenges. The author believes that education practitioners should increase the vigilance towards AI technology and develop scientific plans to maintain security in fields such as information and education. In addition, real communication scenarios are still more important than virtual communication scenarios created by AI. Because the use of language in communication is a real occurrence, factors such as uncertainty and variability in real-life scenarios exist. Therefore, while using AIALL within a controllable range, it is necessary to enhance the frequency of communication among L2 learners in real-life scenarios to help them cope with practical L2 applications in the future.

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