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The Role of AI in Intercultural Academic Understanding and Communication

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Abstract: With the progress and development of artificial intelligence technology, the use of AI is becoming more and more frequent in people's lives and many fields. The application of AI in academic understanding and communication has attracted wide attention, but there are still shortcomings in the fields related to intercultural communication. This paper analyzes the role of AI in intercultural academic understanding and communication. By using ChatGPT and DeepSeek as two AI tools to translate literature in the field of intercultural communication, this paper analyzes and concludes that AI can be used more efficiently and conveniently in intercultural academic understanding and communication, reduce language barriers, and promote more intercultural academic understanding and communication. Based on the advantages and disadvantages of the two AI tools, this paper puts forward some suggestions, such as learning to use AI in advance, choosing AI tools that better meet the needs of users according to the characteristics of different AI, and insisting on self-thinking.

Keywords: Artificial Intelligence, ChatGPT, DeepSeek, Intercultural Communication

1. Introduction

In recent years, with the continuous progress and development of science and technology, the emergence and progress of AI have provided people with new tools, and AI has been increasingly used in more fields because of its convenience and comprehensiveness. For example, AI painting, AI writing, AI translation, and so on. Such words and phrases have gradually begun to appear repeatedly in people's vision in recent years and have even integrated into people's daily lives. For example, they will appear in the headlines and article content of some news, as well as some people try to chat with AI and get the content they need, and AI summarizes replies when people search for information on the Internet. As a function of AI commonly used by people in daily life, AI translation is also used by more and more scholars for intercultural academic understanding and communication. Some people may be concerned about whether the content translated by AI is accurate, and with the increasing types of AI, what the differences are in the content translated by different AI software has become a question in some people's minds.

ChatGPT is a large-scale language model based on the generative Pre-trained Converter (GPT) architecture developed by OpenAI [1]. Because of its powerful language-understanding ability, ChatGPT can be applied to a wide range of language-related fields, including translation [2]. Therefore, ChatGPT is representative in the application of translating language content. It is suitable as one of the artificial intelligence translation tools in the research.

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DeepSeek, an artificial intelligence tool launched by a Chinese company in 2023, is currently popular in China because people can recommend it from many channels, such as news, social media, and so on, and hear about its accuracy and convenience. Therefore, DeepSeek's current popularity in China makes it suitable as an artificial intelligence translation tool for the research.

Therefore, the research purpose of this paper is to explore the translation of literature in the field of intercultural communication into Chinese by ChatGPT and DeepSeek, two AI tools used as language translation tools, and to conduct a comparative study and analysis of the translated content, to explore the role of AI in intercultural academic understanding and communication.

There are two research questions in this paper: The first part is to explore the differences, advantages, and disadvantages of ChatGPT and DeepSeek, two AI tools used as language translation tools, in translating relevant literature texts from English to Chinese in the field of intercultural communication. Then the second part is to explore the role and influence of AI in intercultural academic understanding and communication.

2. Methods & results

2.1. Methods

The text materials used in the translation will be selected from Google Scholar with a large number of citations, and the content will be selected from the literature with far-reaching influence in the field of intercultural communication, which is usually regarded as essential reading materials for students studying intercultural communication-related majors. The texts include the introduction and explanation of some proper terms in the field of intercultural communication, as well as some specific cases of intercultural communication. This is because whether the translation of proper terms is accurate or not is related to whether students can have a correct cognition of the field; The correct translation of specific cases will help students understand the concepts expressed by the author more easily. A total of nine English texts will be selected as materials for translation.

The research will use two AI language models, ChatGPT and DeepSeek, to translate the selected texts into Chinese. The research will compare and evaluate the results of the two AI translations. There are three criteria for evaluation. The accuracy of the translated content is the first criterion, such as whether there are parts of the translation result that are misunderstood or translated incorrectly. Then, the fluency of the translation is also one of the evaluation criteria, such as whether the sentences in the translation result are difficult to read and have grammatical errors [3-6]. Finally, the language style assessment of the translation results, that is, whether the language of the translation results is suitable for the Chinese context and can be well understood and perceived. Ali, Doherty, and White et al firmly believe that fidelity and fluency will be accepted indicators when evaluating machine translation [3].

The prompt sentence structure provided to ChatGPT and DeepSeek AI software in the research uses "the 'BROKE' framework". This framework includes background, role, objective, key requirements, and evolution. Background refers to the background information about the task, which in the research indicates that the text materials are some excerpts of the literature belonging to the field of intercultural communication. The role means the role that AI is expected to play. In the research, AI needs to act as a professional teacher; The objective refers to the goal that AI is finally expected to achieve. In the research, the objective is to translate all these texts into Chinese and provide them to students who are not familiar with the field; The key requirements refer to the detailed instructions that the AI is expected to follow. The specific requirements provided by the researcher are that all translations are required, the meaning is accurate, the relevant terms are used professionally, and the language is maintained smoothly; The final evolve means that the initial

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outputs of AI are improved using three methods: regenerate, adjusting the previous prompts, and instructing the AI on how to improve the outputs through human-AI conversation.

Therefore, the complete prompt sentence provided to ChatGPT and DeepSeek in the research is as follows:

These are excerpts of literature texts related to intercultural communication. As a professional teacher, please translate all these texts into Chinese and provide them to students who are not familiar with this field. At the same time, it is required that all the translations be accurate in meaning, professional in relevant terms, and keep the language smooth.

2.2. Results

2.2.1. Differences in ease of use

In the research, the first difference between the two AI software is ease of use. That is the difference in the amount of time and effort it takes to get the translation content that the research needs. ChatGPT is the first translation tool used in the research, and translation requirements need to be clarified and emphasized many times in the process of translating documents, that is, researcher had to have more conversations with ChatGPT to get the required translation results. Getting a translation response from DeepSeek was fast and easy compared to the somewhat cumbersome processes. The researcher simply sent the prompt to DeepSeek, and the required translations kept appearing until they were all sent.

2.2.2. Evaluation results based on evaluation criteria

According to the first criterion, which is to compare the accuracy of the content translated by the two AI software, the research found that the translation of ChatGPT and DeepSeek had almost no translation errors, and the meaning expressed was basically the same as the original text. However, the translation of ChatGPT was repeatedly found to have omitted or altered some details of the words in the original text. For example, in the original text, "they felt entirely free to just call up a friend and say, 'Let's go to a movie'" as an example, the specific words were omitted and became "they can call their friends directly and invite them to the movies" [7]. The "To deal with the latter pattern" in the original text is omitted [8]. Even though the sentence pattern becomes simpler and easier to understand, it has to be admitted that it lacks rigor. In contrast, DeepSeek's translation was more accurate, with only one detail found to be imperfect: The different terms "discourse patterns" and "patterns of discourse" in the original text are not distinguished and given additional labeling, but two identical Chinese words are used.

According to the second criterion, which compared the fluency of content translated by the two AI software, ChatGPT was found to provide more concise translations than DeepSeek, with fewer complex and long sentences that are difficult to read. In contrast, even if DeepSeek's translations are more accurate and specific, it is overloaded with long sentences, which can easily make readers feel stiff and tired when reading.

According to the language style assessment criteria of the translation results, the research found that ChatGPT's translation results were significantly better than DeepSeek's translation results. Even though the structure of the translation had changed greatly compared with the original English text, the content is easier to read and understand in the Chinese context while maintaining the original meaning. For example, connective words in Chinese context are used correctly to change the order of sentence structure. DeepSeek's translations, by contrast, were much closer to the structure of the original English text.

Overall, the translation language style provided by ChatGPT in the research is more concise and easy to read, and it has a more vivid language style in the Chinese context; However, the process of

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getting translations from ChatGPT is a bit of a waste of time and effort; The rigor of document translation is lacking to some extent, and some detailed words are not mentioned and expressed in the translation result. ChatGPT's voluntary generalizations and summaries can be wrong. DeepSeek is convenient and fast to use in the research, and can provide the required translation content relatively quickly, and its accuracy and the rigor of detailed words are verified. However, the structure and language style of DeepSeek's translation results are basically the same as the original English text, which is full of long and difficult sentences with long and complex structures in the Chinese context..

3. Role and influence

3.1. Effects of AI on intercultural communication

The ability of AI to perform academic translation and communication is again confirmed by a comparative analysis of the two AI-translated texts. With the increasing multi-cultural background, intercultural communication has become more and more common and is considered to be the main feature and requirement of people in modern social life. Therefore, artificial intelligence as a modern technology will also have a broad and profound impact on human communication [9]. Through AI translation, more people can more easily understand and read academic literature from all over the world, which reduces the requirement for language ability and further lowers the threshold for intercultural academic understanding and communication. Some people believe that artificial intelligence and its related technologies can connect different cultures, thereby reducing cultural barriers and promoting the interaction and connection between people with different cultural backgrounds [9]. Khasawneh found in his study that most participants expressed positive views on the ability of AI translation tools to promote intercultural communication between people with different cultural backgrounds [10].

In addition, the above translation process can provide students who want to study or are studying intercultural communication-related majors with experience in AI literature translation, and students can choose suitable AI software for literature translation according to their own needs and based on the comparative conclusions of the research, so as to facilitate them to obtain professional knowledge.

3.2. Challenges and suggestions

Even though AI can play a lot of positive roles and contribute to good influence in intercultural academic understanding and communication, some defects found in the above results may also become challenges faced by AI in intercultural academic understanding and communication.

First of all, take ChatGPT as an example, some AI tools may cause users to fail to get their expected results due to the complexity of use, but cause people to waste time and energy; The output content of AI may lack a certain degree of rigor, resulting in a certain distortion of the meaning of academic expression, which may lead to some misunderstandings in the use of AI for intercultural academic understanding and communication. Then, take DeepSeek as an example, the output content of some AI tools may be full of long and difficult sentences with complex structures due to the linguistic structure of the original text, which is not conducive to people from different cultural and linguistic backgrounds to read and understand, and may hinder intercultural academic understanding and communication.

According to these challenges, some suggestions can be made for them. First of all, before using AI for intercultural academic understanding and communication, users can understand and learn some prompt word structures for AI, as well as clear their requirements in advance, so that they can get the required results from AI more efficiently. Then, users can also understand the differences and characteristics of different AI software in advance, and then choose AI that is more suitable for their own needs for intercultural academic understanding and communication. Taking ChatGPT and

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DeepSeek as examples, if users want to read and understand academic literature related to intercultural communication more easily, ChatGPT will be a better choice, but if users are more concerned about the accuracy and rigor of the translation content and words, then DeepSeek will better meet the needs of users. Finally, even though AI can provide a lot of convenience and play a positive role for people in intercultural academic understanding and communication, users should also keep thinking and skeptical, and regard AI as a tool to promote intercultural academic understanding and communication, rather than blindly believing the results of AI output as the standard.

4. Conclusion

By comparing and analyzing ChatGPT and DeepSeek's translation of relevant literature texts in the field of intercultural communication from English to Chinese, this paper finds their differences in ease of use and accuracy, fluency and language style of translation. In terms of advantages and disadvantages, ChatGPT is found to be more concise in language and easier to understand in translation, even though some details are missing. DeepSeek, on the other hand, pays attention to the structure and details of the original text, even though the content is more accurate, it creates a large number of complex and long sentences, which makes the content difficult to understand. According to these differences and advantages, the positive role of AI in intercultural academic understanding and communication has been affirmed, which can reduce the language barrier and promote more intercultural academic understanding and communication. However, in light of these shortcomings, some obstacles and challenges cannot be ignored either. The research also put forward some specific suggestions for the above defects. For example, users can learn and understand the use methods and skills of AI tools in advance, and understand the characteristics of different AI tools to find more suitable AI as a tool. At the same time, maintaining the user's self-reflection and doubt is also a suggestion for using AI tools in intercultural academic understanding and communication.

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