

# Research on the Development Trend of Teaching Chinese as a Second Language in the Age of Artificial Intelligence

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## ABSTRACT

In recent years, artificial intelligence (AI) technology and theory have developed rapidly, especially in AI-powered simultaneous interpretation which can be 90% accurate. Consequently, many Chinese teachers for foreigners are confronted with the trouble of being replaced by machines. This article aims to analyse the irreplaceability of teaching Chinese as a second language in the era of AI, explore the development trend of the subject, and illustrate that the progress of AI technology and the subject will complement and promote each other and together form a sound and rapid development trend.

**Keywords:** teaching Chinese as a second language, artificial intelligence, AI-powered translation, humanism

At present, the research on AI-powered translation and AI teaching both at home and abroad has reached an unprecedented point. Translation tools that use neural networks have maximized the quality of machine translation which basically can deal with the source language accurately. Machine translation can be competent in simple language communication in tourism, trade and international communication. Rapidly growing AI and machine translation have allowed non-native Chinese speakers to work and live much more conveniently. So, is it necessary for them to learn Chinese? If necessary, then is it necessary to accept traditional human teaching? These problems are worrying Chinese teachers for foreigners.

## 1. Irreplaceability of Teaching Chinese as a Second Language

If we understand the essence and the actual process of translation, we will find that “ability of translation” and “good translation” have different meanings. Zhou Haizhong, a Chinese mathematician and linguist professor, pointed out: to improve the quality of machine translation, the problem should be first resolved is language itself rather than programming language; it is definitely impossible to improve the quality of machine translation only by creating many programs into a machine translation system; in addition, when humans have not yet understood how brains vaguely recognize and logically judge language, it is impossible for machine translation to reach the level of “faithfulness, expressiveness, and elegance”.

### 1.1. Creativity of human language

Out of an instinctive need for survival and development, human beings have generated a natural motivation to

understand and explore the surrounding world. According to the study of today’s most influential linguistic theories — linguistic nativism and cognitive linguistics, human beings have an innate cognitive mechanism and ability. Relying on such mechanism and ability, human language has the great ability of speech production. When interacting with environment, people always use their familiar structures to create new usages, familiar things to understand what is unfamiliar, and limited language rules to generate infinite expressions of semantics. Besides, functional linguistics points out that human language is acquired in interactions in order to learn how to express meaning, and use language to do things and communicate, and one sentence structure can express different meanings in different contexts. Therefore, the process of language acquisition is a process in which learners employ their initiative, enthusiasm and creativity. Language learning theories not only study linguistic issues, but also understand people’s cognitive ability and process, and the functions of brain.

However, in terms of academic and literary language, AI performs badly in free translation. It can neither restructure and recreate original text, nor translate it into other languages that are consistent with audiences’ cognitive language and sentence according to their historical and cultural background, customs, and language habits. As a result, the resultant translation tends to be stiff, and less elegant. Although AI can simulate human consciousness and thinking to code and decode sentences, it does not understand the profound connotations behind language, and cannot replace the communicative function of language. It can only deal with superficial things. Relying on the accumulation and superposition of a large corpus, it only processes data input in it. Therefore, it lacks people’s unique ability of emotional interaction and adaptability in changing circumstances, and consequently cannot accurately judge and convey emotions, culture, and implicit

meanings carried by non-verbal elements such as metaphor, rhetoric, looks, gestures, and tones. Furthermore, it cannot translate and express properly in some certain contexts. In short, before AI has self-awareness, its autonomous learning cannot match human beings' ability of analogy, self-exploration, and creativity and imagination internally driven by curiosity.

### ***1.2. Relation between Language and Culture***

Language is not only a communication tool, but also a carrier of culture. As the meaning of language reflects specific cultural connotations, the use of language must follow certain cultural rules. Even if translation produced by AI is smooth and accurate, a non-native Chinese speaker would still have ambiguous understanding of the translation if he does not well understand Chinese social and cultural conventions, norms, and habits, and does not have a grasp of Chinese semantic and pragmatic culture to some extent. For example: cultural terms in Chinese reflecting China's specific cultural connotations, such as “阿 Q”, “中庸” and “缘分”, are hardly to find corresponding concepts and words in other languages. Even though such choices are available, their symbolic and emotional meaning may be different from that of Chinese cultural values. For example, words such as “个人主义”, “发福”, “龙”, and “狗” have different connotations and emotional meanings in Chinese and English. If you translate “发福” into “fat”, listeners will not know that “你最近发福了” is a common greeting among Chinese people, without any malicious or offensive intention, so he must mistake the speaker as a rude people. This is because “fat” is a taboo word in English culture, so the British or Americans would not describe each other with the word “fat” when they communicate. For another example, when facing praise, the British or Americans would happily receive it, while the Chinese would humbly refuse it. When the Chinese and Westerners respond to each other's compliments out of their own communicative styles, some communication barriers or misunderstandings may appear.

## **2. PROMISING CHOICES OF CHINESE TEACHERS FOR FOREIGNERS**

The rapid development of AI will not cancel the teaching of Chinese as a second language, but instead benefit its development. With the assistance of AI, teachers can get rid of the monotonous and boring work and devote themselves to more creative work. This also puts forward higher requirements of the quality of teachers. Teachers should improve their teaching thinking, and actively update their knowledge and strengthen their humanistic spirit.

### ***2.1. Combination between AI and high-level teaching***

Now, machine translation is quite mature for the translation of simple sentences, and MOOCs and flipped classrooms with the assistance of intelligence are gaining popularity. The development and application of AI in these fields will help students preview and review lessons and complete self-study independently. The repetitive, mechanical parts of teaching can also be assisted by machines, such as repeated training of grammar and sentence structure, memory of vocabulary (especially terminology), as well as loads of practice questions and formatted writing in preparation for exams, etc. However, for high-level teaching with many techniques is beyond the ability of current AI machines, and thus still depends on teachers' participation and guidance. Such kind of teaching includes: comprehension of sentence with advanced grammar, appreciation of literature with aesthetic values, instruction in calligraphy, writing, and recitation, personalized teaching, cultural acquisition and humanistic knowledge closely tied with language. In other words, under the teaching requirements, teachers will engage more in teaching when teaching has more artistic and aesthetic elements, more complex non-linear thinking, higher demand of adaptability, and richer humanistic elements. Only when teachers possess these qualities can they take control of teaching and not be suppressed by machines, so as to achieve self-realization and obtain the greatest rewards in mind.

### ***2.2. Teaching interactions under humanism***

The ultimate end of technological advancement is to serve and liberate human beings, while pure machine service does not consider human feelings and lacks humanity, warmth and variety because of standardized and assembly line process. As a result, people are changed by machines into the beings who passively execute system commands. This will definitely suppress and enslave mankind who literally reap as they have sown. AI will replace people's mechanical labour, but cannot replace their imagination, creativity, and empathic and meaning-seeking thinking. The development of AI must be integrated with humanity. This requires Chinese teachers for foreigners to possess desirable cognitive ability in sensitivity and empathy, give students humanistic attention and care, observe which stage of cultural adaptation they are at, and be familiar with their subtle interactions. Besides, according to students' national psychology and preferences, teachers should explore the meaning and purpose of Chinese language learning. As for Chinese character memorization, Chinese reading and other learning contents that make students feel very difficult and stressful, principles of dialectical treatment, gradual improvement, and having a definite object in view should be followed to design and create novel and interesting classroom activities, and create a relaxed and pleasant

teaching atmosphere. This can arouse students' curiosity, and thus drive them to change their learning attitude from repulsion, attempt to active participation, and finally to enjoyment.

### **2.3. Spread of invisible Chinese culture**

The fundamental goal of teaching Chinese as a second language is to enable learners to master the ability to communicate in Chinese. For Chinese language contains the unique way of thinking of the Chinese nation, teachers should introduce the characteristics of this way of thinking through various approaches and cultivate students' consciousness of Chinese culture. The teaching model that combines cognitive learning and experiential learning is highly praised by the world of linguistics because it can help students analyse and think about the cultural elements behind Chinese cultural behaviours and customs, understand and accept Chinese cultural concepts, and effectively promote students' cultural immersion and resonance to improve their comprehensive ability of cross-cultural communication. This teaching model is roughly divided into three parts: first, arrange cognitive learning in classroom of an related theme of Chinese culture, and adopt the model of "teaching-reading-discussion" to increase students' cultural knowledge so that they can be familiar with relevant terms and expressions; second, organize extracurricular activities and provide real Chinese cultural scene experience, allowing students to observe, participate in and communicate with the theme with their acquired knowledge and expressions, and thus enabling them to truly feel the diversity and dynamics of Chinese culture so that in actual communication in Chinese they can hone the skills of both cultural learning and communication; thirdly, go back to classroom to systematically think about and summarize the explicit Chinese culture in observed and experienced cultural products and behaviours, and extract the implicit values, ways of thinking, and communicative styles of Chinese culture. The ways such as reporting and discussion can be adopted to train the ability of students to use Chinese language by describing cultural phenomenon, summarizing cultural characteristics, evaluating cultural concepts, and comparing differences between cultures, so that the combination of language learning and cultural learning can be further raised to a sound level. This teaching model not only represents one of the ideal ways to learn Chinese language and Chinese culture, but also highlights human interaction between teachers and students. Such kind of interaction is empathic, immediate, and individualized, which can strengthen the fatal shortcomings of AI machines, so it is the direction Chinese teachers for foreigners should be heading towards.

## **3. CONCLUSION**

Man-machine combination is a major trend. Therefore, Chinese teachers for foreigners should follow the trend,

seize the irreplaceability of teaching Chinese as a second language in the era of AI, develop high-level techniques to tap potentials, and focus on the new model involving human interaction to plug the loopholes of AI machines. To combine smart teaching with human teaching will help Chinese teachers for foreigners grow, achieve self-worth and eventually secure a place in teaching Chinese as a second language.

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