Sinolingua: Journal of Chinese Studies
Language, Literature, Culture, Philology and History
Vol. 03, No. 02, September 2025 I Page 207-224
https://jurnal.uns.ac.id/sinolingua
ISSN Online: 2986-1969 ISSN Print: 2986-9773

A New Path for Developing Academic Abilities of Indonesian Chinese Learners in The Era of Artificial Intelligence

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Received : 24 June 2025
Accepted : 21 September 2025
Published : 30 September 2025

Abstract

This article focuses on the application of Artificial Intelligence (AI) technology in International Chinese language education and its impact on the development of Chinese language professionals. Specifically, it explores the opportunities and challenges facing Chinese language majors in Indonesia, focusing on the "academic breakthrough" challenges faced by these learners. This research is significant in that it integrates cutting-edge technologies such as natural language processing to address the real challenges of digital transformation in education, focusing specifically on innovations in Chinese language education in non-native contexts, particularly in Indonesia. Employing a theoretical approach, the study uses case studies, teaching experiments, and questionnaires to evaluate the effectiveness of intelligent tutoring systems, a "dual-teacher" teaching model, and intelligent writing training tools in Chinese language instruction at Indonesian universities. Preliminary findings suggest that personalized learning powered by AI can significantly improve learning motivation and language production quality, particularly in academic writing. However, insufficient digital academic literacy among teachers and students can limit the effectiveness of technology applications. The conclusion suggests that international Chinese education should promote the deep integration of language instruction and digital literacy, strengthen teacher training in intelligent educational technologies, and build a new "human-computer collaborative" teaching ecosystem to provide a sustainable path to achieving educational equity and academic breakthroughs.

Keywords

Artificial Intelligence (AI); Academic Breakthrough; International Chinese Education; Indonesian-Chinese Learners

INTRODUCTION

In the context of the widespread application of technology in the post-epidemic era and the AI era, international Chinese education has shown new characteristics. In particular, the emergence of ChatGPT and DeepSeek has attracted widespread attention and heated discussions in the field of international Chinese education around the world. The field of international Chinese education is actively exploring and thinking about how to use AI technology to better carry out Chinese teaching. In 2022, Vice Premier Sun Chunlan also pointed out at the International Chinese Education Conference: "China is willing to innovate in informationization, digitalization, and intelligent construction to better meet the needs of people from all countries to learn Chinese" (Yuan Xi & Wu Yinghui, 2023). The initial application of artificial intelligence in Chinese teaching was mainly reflected in the widespread use of multimedia teaching equipment such as tapes and slide projectors. Multimedia teaching combines text, pictures, audio and video and other forms to show students more dynamic and intuitive teaching content, and vividly presents Chinese teaching content to students, which improves students' learning interest and learning effect. Chinese teachers can use multimedia teaching software to create various teaching resources such as voice, images, animations, etc. to help students better understand the Chinese language and culture.

Since computer technology has developed to the stage of AI, its impact on international Chinese education has been continuously strengthened, changing the traditional teaching methods. The application of AI technology has changed and continuously optimized the original language teaching methods, improved the efficiency and quality of language teaching, and also provided students with a more personalized and autonomous learning experience. Generally, the learning process of students mainly depends on the guidance and assignment of teachers. However, in the AI environment, teachers can provide students with more independent learning opportunities, such as publishing intelligent learning tools and resources, allowing students to choose learning content and learning methods independently, so as to better stimulate students' learning initiative. Students can also use Chinese learning websites for comprehensive training in listening, speaking, reading and writing. Many Chinese institutions also provide online teaching platforms and courses, where students can find the required Chinese learning resources, such as videos, audios, teaching materials and exercises, on various platforms, and freely choose time to study. Therefore, in order to adapt to the development trend of education in the digital age, international

Chinese education is also striving to meet the needs of Chinese learning in the context of globalization.

In recent years, the academic community has also conducted research on many aspects of international Chinese education under the rapid development of AI technology (Ou Zhigang et al, 2024). Most of them focus on the research of teaching models, teaching methods, and intelligent technologies enabled by AI, as follows:

1. The transformation and impact of AI on education: educational transformation, smart education, intelligent education, etc.;
2. Specific applications of AI in education: smart classrooms, online learning, deep learning, information technology, learning analysis, etc.;
3. Transformation of talent training in the era of AI: digital training, basic education, vocational education, etc.;
4. Challenges faced by teachers in the era of AI: teacher roles, teacher literacy, human-computer collaboration, etc.

How AI can promote Indonesian learners' Chinese scientific research writing ability, how to effectively improve learners' academic initiative, and how to increase learning opportunities is a topic that has not been mentioned in previous studies. This study attempts to explore the application of AI in international Chinese education on the path of Chinese talent training, with the aim of strengthening Indonesian learners' scientific research writing ability training and helping them achieve “academic breakthroughs”. It is hoped that a feasible Chinese talent training route can be explored for the transformation and development of international Chinese education under the new situation.

RESEARCH METHODS

Basic Theory

The Student AI Competency Framework published by UNESCO states that “students should be trained to become citizens of the AI era with critical thinking, technical skills and ethical awareness”. Based on this, an intelligent learning system led by intelligent thinking should be built to promote students from understanding to application and finally to creation. By using AI technology, more people can receive education, especially those living in remote areas or with physical disabilities. This opens up broader and more equitable educational opportunities for all sectors of society. In the context of increasing globalization and competition, the integration of AI and education can also help provide the future generation with relevant skills to meet the challenges of a changing world. AI can help create a

learning environment that responds to technological development and job market needs. Therefore, the urgency of AI in the field of education lies not only in improving the efficiency and effectiveness of the learning process, but also in its ability to change the overall educational paradigm, making education more inclusive, adaptable and more in line with the needs of the times.

Constructivist learning theory focuses on students actively constructing knowledge and gaining understanding through interaction with the environment. Autonomous learning theory emphasizes that students independently choose and control learning activities in the learning process to improve learning motivation and effectiveness. Constructivism provides a cognitive framework for the hybrid learning model, while the hybrid learning model provides a technical path for constructivism. Personalized teaching is to provide tailored teaching content and methods based on students' personal needs, interests and learning styles. Personalized content and feedback mechanisms can stimulate students' curiosity in learning and enhance their learning motivation. “Academic breakthrough” refers to the dynamic process of Indonesian Chinese learners breaking through the triple boundaries of academic resources, language ability and cultural differences with the help of technical tools and learning strategies under multiple structural constraints. The academic breakthrough of Indonesian Chinese learners essentially comes from the upgrade from “language users” to “language researchers” or “cultural bridge builders”. Its core is to break the instrumental cognition of Chinese learning and turn to critical and innovative academic practice.

From the perspective of constructivist learning theory, this study hypothesizes that guiding Indonesian Chinese language majors with HSK Level 4 proficiency to actively use artificial intelligence tools (such as ChatGPT and DeepSeek) to select research topics, analyze literature, and ask academic questions in a blended academic writing classroom will effectively promote their cognitive construction of scientific research structures and facilitate their role transition from “Chinese language users” to “academic researchers,” thereby enabling critical academic practice mediated by language. This design relies on the core principle of constructivism, that knowledge is actively constructed by learners through interaction with the environment. Artificial intelligence, as a cognitive collaboration tool, provides dynamic scaffolding and a supportive academic environment. Its positive impact is primarily reflected in the following aspects: First, by independently designing questions (such as inquiring about the theoretical

framework, methods, and results of a study), students continuously adjust and deepen their understanding of academic research elements through interaction with AI, actively constructing cognitive schemas. Second, AI provides immediate, personalized academic resource support and terminology explanations, helping students transcend language and knowledge boundaries. Teachers, on this basis, provide targeted feedback, forming a "dual-teacher support" system that enhances learning motivation and self-efficacy. More importantly, students not only acquire information but also critically evaluate the accuracy and logic of AI-generated content, thereby developing metacognition and academic judgment. Furthermore, research topics based on individual interests and differentiated AI interaction paths support each student in constructing knowledge at their own cognitive level, achieving truly personalized learning. Ultimately, this process encourages students to transform Chinese into a tool for academic thinking and expression, transcending their previous instrumental understanding of the language, completing the transition from passive learning to active research, and achieving the educational goal of "academic breakthrough."

RESULTS AND DISCUSSION

Opportunities of AI in International Chinese Education

The academic breakthrough and cooperation with AI in international Chinese education research can be viewed from three aspects. The first is psychology. Human intellectual information processing goes through stages such as attention, memory, and thinking. The second is the learning process. Schmit (1990) believes that the more a certain language form appears and is concentrated, the easier it is to attract the attention of learners, and thus it is easier to enter the interlanguage system. The third is to cultivate critical thinking ability. In autonomous learning, critical thinking is a combination of active learning and modern learning models. The application of AI generally goes through three stages: preparation stage, literature collection and processing stage, and completion stage. The preparation stage includes: formulating research concepts and creating AI guidance information. The literature collection and processing stage includes: literature classification, literature combing and analysis. The completion stage includes: students presenting research topics and teachers giving feedback.

As a window to knowledge and wisdom, AI reduces the language distance, cultural distance, and psychological distance between people. Realizing "Smart AI" includes "knowing AI" and "using AI". "Knowing AI" means having a certain understanding and mastery of AI technology, such

as basic principles, technical architecture, teaching scenarios, and development trends. “Using AI” refers to the use of AI technology or products in the process of international Chinese teaching. Users need to have a certain technical foundation or operational capabilities and be able to install and operate related AI systems or products. “Smart AI” emphasizes that in the process of understanding, using and mastering AI technology, we must understand the laws of education, follow ethical principles, ensure the healthy development of technology and social welfare, actively participate in the research and development and innovation of AI technology, and promote technology to develop in a more intelligent, efficient and safe direction. Advantages of AI for academic research:

1. Provide useful information and resources to help improve language skills and promote collaboration among students;
2. Provide a search engine with a variety of search results, and everyone has an equal opportunity to develop creativity;
3. Help teachers play a role in the teaching process, increase classroom interaction, and stimulate learning enthusiasm;
4. ChatGPT or DeepSeek can expand ideas and improve students' writing skills so that educators can identify those who work harder than other students, generate more ideas, or develop new academic ideas;
5. Improve the quality and efficiency of learning. AI is guiding, instructive, and targeted for language learning and academic research;
6. Enhance the learning experience and achieve a sense of achievement.

Carry out dual-teacher teaching, expand the audience of Chinese education, reduce learning costs, and allow more people to have the opportunity to receive Chinese education. AI can play the role of a virtual tutor, with powerful information storage and search capabilities, providing knowledge capacity far beyond that of human teachers, and providing added value for learners. In this “teacher-machine-student” model, the role of the teacher will change from a traditional knowledge transmitter to a learning guide and organizer of teaching activities. The introduction of intelligent machines will assume some of the functions of knowledge transmission and learning guidance, forming interaction and collaboration among teachers, machines and students. In order to reduce students' fear of difficulty, intelligent technology can be applied to feel the connotation of knowledge in this process, improve learning interest, and help students learn more effectively.

Challenges Faced by AI in International Chinese Education

In the international dissemination of Chinese education knowledge,

students' “psychological preparation, Chinese proficiency, and learning habits” are important factors affecting academic learning outcomes. From the perspective of students' learning adaptability, some students failed to quickly switch their learning mode from oral to written, and had a negative experience in written learning. Learners lack self-discipline, and their sense of self-efficacy and willingness to improve themselves as indirect factors affecting the effectiveness of knowledge dissemination need to be improved. Lu Jianming (2022) pointed out: “If we really want to make Chinese and Chinese culture go global, we must strive to make more and more people in various countries learn and master Chinese, especially written Chinese. In this way, Chinese can travel around the world like English does today and play a role in international language life. Chinese culture can also go global better and faster, integrate into the international multicultural family, and let the world understand, recognize, like, and appreciate it.” We use AI to provide personalized learning guidance, help students solve difficult problems in learning, and provide real-time feedback and suggestions.

In the process of applying AI technology in international Chinese education, all participants must improve their intelligent technology literacy, learn relevant knowledge, and understand the output results of the technical system. Chinese teachers should strengthen theoretical basic training and operational practice, cultivate awareness of AI empowerment, and improve the application level of AI systems. For the improvement of Chinese academic writing, public classes, knowledge competitions, and exhibitions can be used to popularize relevant knowledge. To clarify the application boundaries of AI, it is necessary to determine what AI should and should not do to ensure its reasonable use. At the same time, it is necessary to clearly realize that the essence of AI is only an auxiliary tool, and students' subjectivity and independent thinking ability are the core of education. Students should not be allowed to rely too much on generative AI to directly obtain answers, and “people should not develop from physical dependence on machines to mental dependence” and “people's physical and mental functions should not decline.” Therefore, it is necessary to use technical means to regulate the use of generative AI so that it can maximize its auxiliary role without hindering the development of students' abilities.

In the specific context of Chinese research writing, the following AI-assisted implementation plan could be designed: teachers guide students using tools such as ChatGPT and DeepSeek to conduct intelligent analysis and writing training on literature in the field of “International Chinese Education.” Specific implementation involves: first, training students to formulate

structured queries, such as “Please analyze the research methods of XX literature and summarize it using HSK Level 4-5 Chinese vocabulary.” Second, guiding students to use AI to generate a literature review framework, but requiring them to verify it with independently sourced empirical research data and write a critical analysis. Finally, leveraging AI's instant feedback function, students can submit their writing paragraphs and receive feedback on grammar, logic, and academic standards, but requiring that all arguments must be independently reasoned. Through this “AI+human” dual feedback mechanism, teachers focus on whether students can effectively use technology tools to overcome obstacles in academic writing, while avoiding direct copying of generated content. This design not only improves academic writing efficiency but also, through human-computer collaboration, fosters students' critical thinking and research autonomy, truly achieving a transformation from “language users” to “academic researchers.”

There are still large differences in the efficiency of using digital knowledge resources, learning effects and innovative transformation of Chinese learners in Indonesia. Academic digital literacy is to effectively prevent technology from being abused by students, curb plagiarism and cheating, and avoid over-reliance on the use of AI. In the design of scientific research teaching, innovative functional design should be adopted to stimulate students' interest in active learning, guide students to deeply understand knowledge, and cultivate students' problem-solving ability. Artificial intelligence personalized teaching strategies include the following aspects:

1. Design personalized learning plans. Tailor learning plans for students to ensure that students learn according to their actual level and speed, because sometimes academics cannot judge whether it is right or wrong, especially when translating articles. Generally, students' language level must reach a certain level before they can judge whether the answer of AI is right or wrong;
2. Avoid giving answers directly. AI as a virtual tutor should use heuristic dialogue to encourage students to find answers and explore information by themselves, so as to stimulate their ability to think actively and use AI correctly to learn more, thereby reducing their habit of plagiarism;
3. Writing assistance and correction. AI-powered writing assistance tools can help students check for grammatical errors, improve fluency, provide writing suggestions, and recommend relevant learning resources such as textbooks, videos, and articles based on their learning needs;
4. Monitor the learning process. The communication information between students and virtual tutors will be recorded and authorized to be viewed

by Chinese teachers. In this way, teachers can pay close attention to students' learning situation and analyze it based on classroom discussions, because AI sometimes lacks practical examples, and everyone has the freedom to choose what to learn.

Through these strategies, students can more effectively utilize AI technology and enhance their learning effectiveness and interest in Chinese. At the same time, teachers should guide students in using AI tools correctly, cultivating their independent thinking and problem-solving skills, and ensuring that AI plays a positive role in education. Make full use of AI technology so that the language learning environment is no longer limited to the classroom. Students can learn language knowledge through AI academic research assistants such as DeepSeek, Elicit, Kimi, Doubao, and the Internet. Teachers recommend personalized learning resources to students to cultivate language thinking ability, learn and use them immediately, get a good educational experience, and promote the acquisition of language knowledge. Various audio-visual, computing, and interactive devices are used in Chinese teaching, so that online and offline teaching can achieve functions such as language learning, interpersonal communication, and cultural exchange. Through the combination of virtual and real, a learning community is built to reduce the negative factors of online or offline teaching. The application of AI in Chinese research can improve learning ability in the field of bilingual translation, such as helping students judge the semantic flow of original vocabulary, the semantic flow of the original author, and the writing style of the original author, thereby improving and ensuring the accuracy of understanding. Students can also use the translation evaluation system of the AI search platform, and then analyze their own translations, find out the deficiencies of the translation through article comparison, and improve them.

AI and Chinese Talent Training Path

AI is learner-centered, and conducts data mining from aspects such as learning interests, progress, effects, and feedback. It plans learning paths and adjusts learning steps in real time, realizes intelligent push of knowledge points, exercises and other resources, enhances the accuracy of knowledge mastery, and improves learning efficiency. In terms of Chinese academic research, the appropriate application of AI is conducive to students taking more responsibility for their own learning development, knowledge construction and creation. When students actively pursue answers to questions, lead the development of communication and thinking, and constantly

improve prompts to approach ideal answers, this series of interactive processes can stimulate learners' autonomous thinking and deep exploration capabilities. In addition, the Chinese learning system can strengthen learners' ability to communicate and solve problems in Chinese by creating immersive situations and guiding learners to solve practical problems.

In the 21st century, language is not only a bridge of communication, but also an important tool for cultural inheritance and international communication. Interaction with intelligent language partners can help learners master Chinese knowledge and improve their scientific research writing skills. By updating the goals of Chinese talent training, optimizing teaching content, and strengthening the teaching staff, we can gradually cultivate a group of high-quality compound talents who have a solid foundation in international Chinese education and master AI technology, with interdisciplinary vision, innovative thinking and practical ability. They will become the main force in the promotion of AI products for international Chinese education, lay the foundation for the promotion and long-term operation of AI products for international Chinese education, and thus contribute to the modernization and intelligent development of international Chinese education. The following are the paths for the training of AI and Chinese talents:

Table 1. Paths for training AI and Chinese language talents

Path	Teacher Requirements	Student Requirements
Knowledge	- Know the basic concepts of generative AI; - Understand the impact of AI on international Chinese education and teaching.	- Know the knowledge of AI technology; - Expand Chinese language knowledge.
Application	- Use AI products to promote the efficiency of language knowledge imparting in international Chinese teaching activities; - Have the ability to solve problems using AI technology and be able to share and impart experience in using AI.	- Develop continuous Chinese language learning ability; - Actively explore and use experience.
Thinking	- Be able to think about	- Have the attitude

	how to better demonstrate Chinese knowledge and Chinese culture with the help of AI; - Have a sense of human-machine collaboration and understand the principle that humans and machines complement each other.	and willingness to actively use AI technology; - A thinking that takes critical view of output results.
Evaluation	- Be able to judge whether content generated by AI technology can be used for teaching; - Master common methods for judging errors, plagiarism, false patchwork and other non-factual content generated by large models;	- Able to distinguish between machine intelligence and human intelligence generated content; - Have the knowledge and ability to judge the use scenarios and conditions of AI.
Literacy	- Be able to respect privacy, ethics and intellectual property rights when using AI; - Can guide students to use AI products such as ChatGPT/DeepSeek models reasonably and appropriately.	- Ability to legally and compliantly use AI technologies and products; - Focus on human creation.

The advancement of AI technology has brought new opportunities for international Chinese education and communication in Indonesia. International Chinese education empowered by technology will usher in a huge change, which will also lead to a new development direction for international Chinese communication. In the process of scientific research and writing, Indonesian Chinese learners break through the limitations of traditional learning models or research paradigms, and achieve significant improvement in personal academic ability or field development through AI search methods, interdisciplinary perspectives or technical means. In the

future, we look forward to more Indonesian Chinese experts or scholars attending international academic conferences to understand Chinese literature and express their research projects and questions in Chinese at the conference. Cultivate high-level Chinese talents and become elites in the fields of politics, economy, culture, education, and science and technology in China and Indonesia.

This study targeted 52 students majoring in Chinese at Universitas Sebelas Maret (HSK Level 4), focusing on their Chinese research writing courses to explore how artificial intelligence technology supports the development of academic capabilities. The purpose of the questionnaire survey was to obtain AI's constructivist approach to "what to learn" (the knowledge construction process), personalized theory to solve "how to learn" (adaptive path), and academic breakthrough to define "why to learn" (goal orientation). The study was analyzed using a combination of quantitative and qualitative methods: a hybrid method that used quantitative analysis as the primary method to verify the theoretical framework and qualitative analysis as the secondary method to deepen the interpretation of the connotation. The questionnaire survey results showed that:

Table 2. Results of the questionnaire survey on AI and Chinese language talents

Dimensions	Question	Percentage (100%)
A. Constructivist Dimension (Knowledge Construction Process)	1. When using AI tools (such as essay grading systems), I can independently discover Chinese grammatical patterns through system feedback.	**53.8% agreed** 32.7% were neutral 13.5% disagreed
	2. Learning Chinese in AI-created Indonesian cultural scenarios (such as VR dialogues about Bali tourism) is more effective than learning with traditional textbooks.	21.2% agreed **42.3% were neutral** 36.5% disagreed
	3. Having debate-style conversations with AI (e.g., discussing Javanese proverbs vs.	**44.2% agreed** 34.6% were neutral 21.2% disagreed

	Chinese idioms) can deepen my understanding of Chinese culture.	
B. Personalization Theory Dimension (Adaptability Path)	4. The AI can accurately identify my weaknesses (such as the "把/ba" sentence errors influenced by my native Indonesian language) and provide targeted exercises.	**48.1% agreed** 34.6% were neutral 17.3% disagreed
	5. I hope that AI will automatically adjust the amount and difficulty of learning tasks according to Islamic holidays (such as Ramadan).	**57.7% agreed** 32.7% were neutral 9.6% disagreed
	6. The intelligently recommended learning content (such as readings related to the history of Chinese in Sumatra) is in line with my personal interests.	34.6% agreed **44.2% were neutral** 21.2% disagreed
C. Academic Breakthrough Dimension (Goal-Oriented)	7. After using AI tools to assist with literature review, I am more confident in writing academic papers in Chinese (e.g., comparing Chinese and Indonesian cultures).	34.6% agreed **55.8% were neutral** 9.6% disagreed
	8. Mastering the skills of writing AI prompt words is crucial for me to obtain Chinese professional materials (such as CNKI papers).	**46.2% agreed** 44.2% were neutral 9.6% disagreed

This study, through a questionnaire survey of 52 Indonesian HSK Level 4 learners, reveals the effectiveness and core challenges of applying AI in

international Chinese language education. The data indicates that learners are generally cautiously optimistic about AI-assisted instruction, with an average of approximately 41.8% recognizing the value of current AI tools. Specifically, AI performs well in basic support functions: 53.8% of students believe they can independently discover Chinese grammatical patterns through AI feedback, 48.1% affirm its ability to diagnose language weaknesses, and 46.2% agree that mastering AI prompts is important for accessing academic materials. This reflects the initial success of AI as a learning tool and cognitive scaffold. However, the survey also revealed significant shortcomings, particularly in cultural immersion and academic empowerment. Only 21.2% of students believe that AI-created cultural scenarios are more effective than traditional textbooks, and only 34.6% of students believe that using AI tools has increased their confidence in academic writing, indicating that current technology has yet to achieve deep contextualization and the development of higher-level skills. Further analysis revealed that cultural and religious adaptation emerged as the most critical influencing factor. Across all dimensions, the demand for "AI to adapt learning tasks to Islamic holidays" received the highest approval (57.7%), highlighting that the core of technology localization lies in cultural sensitivity rather than simple language conversion. This strong cultural demand contrasts sharply with the inadequate development of AI cultural contexts (only 21.2% satisfaction), creating a major developmental challenge. Furthermore, the poor performance of intelligent recommendation systems (only 34.6% believe they meet personal interests), highlighting the inadequate understanding of existing algorithms on Indonesian local knowledge and social context. These findings suggest that the application of AI in international Chinese language education must transition from a "technical tool" to a "cultural medium." This requires addressing both the technical accuracy of personalized learning and the underlying bottleneck of cultural adaptation to truly support Indonesian learners' academic advancement.

CONCLUSION

AI has attracted the attention of stakeholders in international Chinese education. As for the impact on the development of international Chinese education, there are both opportunities and challenges. In fact, technology and language education are not in opposition. Technological progress and language education development should be integrated and innovated. The development speed of AI is changing with each passing day. Therefore, the international Chinese education community should actively adapt to

changes, hold a more open and inclusive attitude, and improve the training of Chinese talents. Make full use of technology to empower education, realize automatic evaluation and timely feedback, improve the accuracy and immediacy of evaluation, help teachers continuously optimize teaching design, and improve teaching effectiveness. AI is an important driving force for the innovative development of education in the future. It empowers education, innovates education, reshapes education, leads the innovative development of language education, makes international Chinese education more efficient and high-quality, and makes humans smarter and wiser through digitalization.

Unlike earlier discussions in the tech media, which often viewed artificial intelligence as a "double-edged sword," current AI research focuses on how it can empower teaching, rather than simply weighing its pros and cons. Past discussions focused on the impact of technology on traditional teaching, while current research is delving deeper into how AI can be used to achieve personalized and efficient learning experiences. This represents an evolution in teaching philosophies. The debate between print dictionaries and digital dictionaries (such as Pleco) epitomizes the clash between traditional and modern learning methods. Print dictionaries are authoritative and systematic, facilitating a deeper understanding of vocabulary; digital dictionaries are convenient and interactive, providing information such as pronunciation, examples, and word origins, helping students master vocabulary more quickly. AI research can draw inspiration from this debate and explore ways to combine the strengths of both: first, developing intelligent dictionaries that combine authority and convenience, offering detailed explanations, examples, word origins, and personalized recommendations based on student characteristics. Second, leveraging AI tutoring to recommend relevant vocabulary, examples, and exercises based on students' learning history to consolidate vocabulary knowledge. Third, implementing blended learning, using print dictionaries in class for deeper understanding and digital dictionaries for review and practice after class.

These strategies aim to more effectively utilize AI technology to enhance Chinese language learning outcomes and interest. However, AI is merely a supplementary tool; teachers should guide students in its proper use and cultivate independent thinking and problem-solving skills. AI research and media-related discussions on teaching should focus on how to empower teaching and achieve a personalized and effective learning experience. In language education practice, intelligent tutoring systems developed based on AI can provide personalized guidance and support based on

students' learning progress and performance, breaking through the long-standing limitation of traditional large-class teaching that has limited personalized tutoring. Adaptive learning platforms can also dynamically adjust learning content and difficulty based on students' needs and abilities, supporting independent learning. Furthermore, it remains important to clarify that language education must adhere to a "people-oriented, student-centered, and technology-assisted" approach. Only by clarifying the relationship between people and intelligent tools can technology better play its academic role in international Chinese language education and promote the healthy development of AI in this field.

REFERENCES

[1] Du, B., & Zheng, D. X. (2025). 生成式人工智能重塑国际中文教育数字化创新之分析 [Generative artificial intelligence reshapes digital innovation in international Chinese education: An analysis]. *吉林大学社会科学学报* [*Jilin University Journal Social Sciences Edition*].

[2] He, W., & Zhang, W. N. (2024). 国际中文教育人工智能产品供给现状、问题及对策 [The current situation, problems and countermeasures of AI product supply in international Chinese education]. *云南师范大学学报* [*Journal of Yunnan Normal University*].

[3] He, Y. (2023). 人工智能赋能下的国际中文教育与传播路径探究 [A study on the path of international Chinese education and communication empowered by artificial intelligence]. *赤峰学院学报（哲学社会科学版）*[*Journal of Chifeng University (Philosophy and Social Sciences Edition)*].

[4] Jin, X. (2023). ChatGPT 深度融入国际中文教育的应用策略、实践困境和应用策略 [The application strategies, practical dilemmas, and solutions of ChatGPT deeply integrated into international Chinese education]. *云南师范大学学报（哲学社会科学版）* [*Journal of Yunnan Normal University (Philosophy and Social Sciences Edition)*].

[5] Li, M., & Ma, X. F. (2025). 基于生成式人工智能的国际中文学习系统构建 [Construction of an international Chinese learning system based on generative artificial intelligence]. *语言文字应用* [*Applied Linguistics*].

[6] Liu, L., & Liu, X. H. (2022). 关于国际中文智慧教育的几点思考

[Some thoughts on smart education in international Chinese language teaching]. *语言教学与研究* [*Language Teaching and Linguistic Studies*].

[7] Liu, L., Shi, Z. Q., Cui, X. L., et al. (2023). ChatGPT 给国际中文教育带来的机遇与挑战——北京语言大学与美国中文教师学会联合论坛专家观点汇辑 [Opportunities and challenges brought by ChatGPT to international Chinese education: Expert opinions from the joint forum of Beijing Language and Culture University and the Chinese Language Teachers Association of the United States]. *世界汉语教学* [*Chinese Teaching in the World*].

[8] Liu, Y. (2023). 人工智能技术对国际中文教育的影响与对策——在 ChatGPT 出现的背景下 [The impact and countermeasures of artificial intelligence technology on international Chinese education in the context of ChatGPT]. *中国现代教育装备* [*China Modern Educational Equipment*].

[9] Liu, Y. P., & Ou, Z. G. (2022). 本土化、多元化、均衡化：人工智能在国际中文教育中的应用探讨 [Localization, diversification, and balance: A discussion on the application of artificial intelligence in international Chinese education]. *民族教育研究* [*Journal of Research on Education for Ethnic Minorities*].

[10] Lu, B. M. (2022). 新时代国际中文教育理念创新和实践探索的若干思考 [Some thoughts on the conceptual innovation and practical exploration of international Chinese education in the new era]. *语言教学与研究* [*Language Teaching and Linguistic Studies*].

[11] Ma, X. F. (2025). 国际中文教育信息化建设成效及发展方向——在国际中文智慧教育工程成果发布会上的讲话 [The effectiveness and development direction of informatization construction in international Chinese education: A speech at the release conference of the achievements of the International Chinese Smart Education Project]. *世界汉语教学* [*Chinese Teaching in the World*].

[12] Ma, R. L., & Liang, Y. (2023). 国际中文教育数字化转型的三重逻辑——从 ChatGPT 谈起 [The triple logic of digital transformation in international Chinese education: Starting from ChatGPT]. *河南大学学报(社会科学版)* [*Journal of Henan University (Social Science Edition)*].

[13] Ou, Z. G., Wang, Y., & Liu, Y. P. (2024). 人工智能与教育文献对

国际中文教育研究的启示 [The enlightenment of artificial intelligence and educational literature on international Chinese education research]. *辽宁师范大学学报（社会科学版）* [*Journal of Liaoning Normal University (Social Science Edition)*].

[14] Qu, F. Z., & Ding, A. Q. (2023). 国际中文教育数字化转型：内涵、特征与路径 [Digital transformation of international Chinese education: Connotation, characteristics, and paths]. *云南师范大学学报（对外汉语教学与研究版）* [*Journal of Yunnan Normal University (Teaching and Research on Chinese as a Foreign Language Edition)*].

[15] Xia, M. M., & Huang, X. (2019). “人工智能(AI)语言教育”在高龄短期留学生汉语教学中的理论初探 [A preliminary theoretical study on "AI language education" in Chinese teaching for elderly short-term international students]. *卫星电视与宽带多媒体* [*Satellite TV & IP Multimedia*].

[16] Xue, M. C. (2023). *数字技术对国际中文教育知识传播的影响研究* [*Research on the impact of digital technology on knowledge dissemination in international Chinese education*] [Master’s thesis, Shandong University].

[17] Yuan, X., & Wu, Y. H. (2023). ChatGPT Plus 给国际中文教育带来的机遇、风险及应对策略 [Opportunities, risks, and countermeasures brought by ChatGPT Plus to international Chinese education]. *云南师范大学学报（对外汉语教学版）* [*Journal of Yunnan Normal University (Teaching Chinese as a Foreign Language Edition)*].

[18] Zheng, C. P., Yu, Y., & Guo, Z. Y. (2024). 人工智能在语言教学中的应用研究：回顾与展望 [Research on the application of artificial intelligence in language teaching: Review and prospects]. *外语教学* [*Foreign Language Education*].