Sino-US English Teaching, May 2025, Vol. 22, No. 5, 158-162
doi:10.17265/1539-8072/2025.05.002

Interpreting Teaching in AI Era: Opportunities and Challenges

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The rapid advancement of artificial intelligence (AI) technologies has fundamentally transformed various sectors of society, with education being no exception. This paper examines interpreting education in the AI era, analyzing both the unprecedented opportunities and formidable challenges that educators and institutions face. Through a review of recent literature and theoretical analysis, this study explores how AI technologies are reshaping interpreter training methodologies, assessment practices, and professional competencies. The paper argues that while AI presents remarkable opportunities for enhanced learning experiences and personalized education, it simultaneously poses significant challenges related to pedagogical adaptation, ethical considerations, and the preservation of human-centric skills essential to professional interpreting. It suggests that successful integration of AI in interpreting education requires a balanced approach that leverages technological advantages while maintaining the irreplaceable value of human expertise and cultural sensitivity.

Keywords: artificial intelligence (AI), interpreting teaching, opportunities and challenges

Introduction

The integration of artificial intelligence (AI) into educational practices represents one of the most significant paradigm shifts in contemporary pedagogy. For interpreting education, a field traditionally grounded in human cognitive abilities and cultural competencies, the AI revolution presents both transformative possibilities and existential questions. As machine translation and AI-powered interpreting tools become increasingly sophisticated, educators must critically examine how to prepare future interpreters for a professional landscape where human expertise coexists with AI.

The interpreting profession has always been characterized by its demand for complex cognitive processing, cultural mediation, and real-time decision-making. These human-centric skills have formed the cornerstone of interpreter training programs worldwide. However, the emergence of AI technologies capable of processing natural language, recognizing speech patterns, and even attempting cultural contextualization has prompted a fundamental reconsideration of interpreting pedagogy. This paper seeks to provide a comprehensive analysis of how AI is reshaping interpreting education, examining both the opportunities for enhanced teaching and learning, and the challenges that must be addressed to ensure the continued relevance and quality of interpreter training programs.

AI Technologies in Contemporary Interpreting Practice

The integration of technology in interpreting education has evolved significantly over the past decades, with recent developments in AI marking a particularly transformative phase. Fantinuoli (2023) provided a

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comprehensive overview of how digital technologies have progressively shaped interpreter training, from early computer-assisted tools to contemporary AI-powered platforms. This paper reveals that while technological adoption in interpreting education has been gradual, the pace has accelerated dramatically with the advent of neural machine translation and AI-based learning systems.

The historical trajectory of technology integration in interpreting education reflects broader patterns in educational technology adoption. Initially, digital tools served primarily as supplements to traditional teaching methods, offering features, such as digital recording, playback capabilities, and basic terminology management. However, as Sun (2025) demonstrated in his paper, his qualitative interviews with eight students and two teachers proved that AI tools have significantly influenced educational design, including curriculum design, assessment methods, and competency frameworks, as well as teaching outcomes.

Understanding the current state of AI in professional interpreting practice is crucial for informing educational approaches. Recent advancements in neural machine translation, automatic speech recognition, and natural language processing have created AI systems capable of performing tasks once thought to be exclusively human domains. These technological developments have profound implications for how interpreters are trained and what competencies they need to develop.

The above studies reveal a complex picture of AI's current capabilities and limitations in interpreting contexts. While AI systems have achieved remarkable accuracy in certain controlled environments, they continue to struggle with the nuanced aspects of human communication that professional interpreters navigate daily. This includes managing ambiguity, understanding cultural references, adapting to speaker intentions, and handling the pragmatic dimensions of communication that extend beyond literal meaning.

Opportunities in AI-Enhanced Interpreting Education

Personalized Learning Pathways

One of the most significant opportunities presented by AI in interpreting education is the potential for highly personalized learning experiences. AI algorithms can analyze individual student performance patterns, identify specific areas of weakness, and adapt instructional content accordingly. This level of personalization was previously impossible in traditional classroom settings, where instructors must balance the diverse needs of multiple students simultaneously.

Son and Jin (2024) presented compelling evidence for the effectiveness of AI-powered personalized learning in interpreter training programs. They explored how AI platforms like iFLYTEK and LMS-based systems (e.g., iSmart and SHIYIBAO) are used in interpreter education in China. It highlights that AI can reduce anxiety and improve performance in interpreting practice by personalizing learning through tools like voice recognition and real-time feedback. The AI systems were particularly effective in identifying and addressing individual challenges related to processing speed, memory retention, and language-specific difficulties.

The personalization capabilities of AI extend beyond skill development to include learning style accommodation. Different students may benefit from varied approaches to skill acquisition, whether through visual aids, auditory exercises, or kinesthetic activities. AI systems can analyze student engagement patterns and performance metrics to determine optimal learning modalities for each individual, creating truly customized educational experiences.

Enhanced Practice and Feedback Mechanisms

AI technologies offer unprecedented opportunities for students to engage in deliberate practice with immediate, detailed feedback. Traditional interpreting education has always been constrained by the availability of instructors and practice partners. AI-powered systems can provide unlimited practice opportunities with instantaneous feedback on various performance parameters, including accuracy, fluency, and adherence to professional standards.

The quality and immediacy of feedback possible through AI systems represent a significant advancement in interpreting pedagogy. These systems can analyze multiple dimensions of student performance simultaneously, providing detailed insights into areas, such as terminology accuracy, grammatical correctness, prosodic features, and even non-verbal communication elements in the case of sign language interpreting. This multidimensional feedback helps students develop a more comprehensive understanding of their performance and areas for improvement.

Access to Diverse Training Materials

AI technologies have dramatically expanded access to authentic, diverse training materials for interpreting students. Through automated content curation and generation, AI systems can provide students with a vast array of practice materials spanning different domains, registers, accents, and cultural contexts. This diversity is crucial for preparing interpreters to work in an increasingly globalized and multicultural professional environment.

Son and Jin (2024) highlighted how AI-powered content curation systems have transformed the availability of training materials. Their research demonstrates that AI systems can automatically identify, categorize, and adapt authentic materials from various sources, creating comprehensive training repositories that would be impossible to compile manually. This democratization of access to quality training materials is particularly significant for institutions in resource-constrained environments or those offering programs in language combinations with limited existing resources.

Challenges in AI-Era Interpreting Education

Maintaining Human-Centric Skills

While AI offers numerous advantages in interpreting education, it also presents significant challenges in maintaining and developing the human-centric skills that remain essential to professional interpreting. The risk of over-reliance on AI tools may lead to the atrophy of critical cognitive abilities, including analytical thinking, cultural sensitivity, and the capacity for nuanced judgment in complex communicative situations.

The challenge lies in striking an appropriate balance between leveraging AI capabilities and preserving the development of uniquely human competencies. Interpreters must continue to develop skills in areas where human judgment remains irreplaceable, such as navigating sensitive political or cultural contexts, managing interpersonal dynamics in interpreted interactions, and making ethical decisions in challenging professional situations.

Ethical Considerations and Professional Identity

The integration of AI in interpreting education raises profound ethical questions about the nature of the profession and the role of human interpreters in an increasingly automated world. Students must grapple with questions about professional identity, ethical responsibilities, and the appropriate use of AI tools in professional practice. These considerations extend beyond technical competence to encompass broader questions about the value and purpose of human interpretation in society.

Horváth (2022) pointed out that rapid advances in AI and cloud-based interpreting platforms have introduced new ethical risks to the interpreting profession, particularly concerning confidentiality, accuracy, data quality, transparency, and responsibility for errors. To address these challenges, it is essential to integrate AI ethics into both professional standards—such as codes of ethics—and interpreter training programs. Similarly, Sywelem and Mahklouf (2024) discussed broad ethical issues in educational AI, including decision-making, data privacy, and algorithmic bias. It emphasizes the importance of developing frameworks that reflect both educator and student concerns in AI-enhanced learning environments.

Technological Infrastructure and Digital Divide

The successful integration of AI in interpreting education requires significant technological infrastructure and resources. This requirement creates potential disparities between well-resourced institutions and those with limited technological capabilities. The digital divide in interpreting education may exacerbate existing inequalities in educational access and quality, particularly affecting institutions in developing regions or those serving underrepresented communities.

Beyond hardware and software requirements, the effective use of AI in interpreting education demands technological literacy from both instructors and students. This presents challenges for educator professional development and student preparation, particularly for those who may have limited prior experience with advanced technologies. Institutions must invest not only in technological infrastructure, but also in comprehensive training and support systems to ensure effective utilization of AI tools.

Conclusions

In current era, AI is swiftly reshaping our lives and society, bringing both benefits and challenges. As Green (2020) noted, this shift carries significant ethical implications: “AI, as the externalization of human intelligence, offers us in amplified form everything that humanity already is, both good and evil”. The integration of AI in interpreting education represents both a tremendous opportunity and a significant challenge for educators, students, and institutions. While AI technologies offer unprecedented possibilities for personalized learning, enhanced practice opportunities, and access to diverse training materials, they also raise important questions about maintaining human-centric skills, addressing ethical considerations, and ensuring equitable access to technological resources.

Success in navigating this new landscape requires a balanced approach that embraces the benefits of AI while preserving the essential human elements of interpreting. Educators must thoughtfully integrate AI tools into curricula, develop new assessment methods that reflect the realities of AI-assisted practice, and prepare students for a professional environment where human expertise and AI coexist.

The future of interpreting education in the AI era will be shaped by our collective ability to harness technology’s potential while maintaining the profession’s core values and human essence. This requires ongoing dialogue, research, and collaboration among all stakeholders in the interpreting education community. By approaching AI integration with both enthusiasm and critical reflection, we can ensure that interpreting education continues to prepare competent, ethical, and adaptable professionals capable of meeting the communication needs of our increasingly interconnected world.

As we move forward, it is essential to remember that the goal of interpreting education remains unchanged: to develop skilled professionals capable of facilitating communication across linguistic and cultural boundaries.

AI should be viewed not as a replacement for human interpreters but as a powerful tool that, when used appropriately, can enhance the quality and accessibility of interpreting education and practice. The challenge and opportunity lie in finding the optimal balance that leverages technological advantages while preserving and enhancing the uniquely human capabilities that remain at the heart of professional interpreting.

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