

Teaching Dilemmas and Path Reconstruction of Interpreting Courses in the Era of Generative Artificial Intelligence

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Abstract: Generative Artificial Intelligence (AIGC), represented by ChatGPT and DeepSeek, is reshaping the translation and interpreting industry in unprecedented depth and breadth, and at the same time profoundly impacting interpreter education in universities. Practical observation shows that current interpreting pedagogy has critical dilemmas: the weakening of students' professional identity; cognitive load imbalance caused by the improper use of AI tools; and insufficient or even regressive training in core interpreting skills such as listening and analysis, note-taking, and immediate conversion. Simultaneously, AI translation possesses inherent limitations such as AI is not capable of recognizing or rendering the important nuances of human language, nor can it make the cultural adjustments necessary to convey meaning effectively; it struggles with even some of the most basic, normal parts of our language, like accents, dialects, slang, and idioms^[1]. In light of this, this study argues that it is an urgent need to shift the interpreting teaching paradigm from the traditional "language-skill-oriented" model to one that gives equal emphasis on "language skills, higher-order thinking, and interpreter agency." This paper, by integrating Gile's Effort Models, interpreter agency theory, and the framework of higher-order thinking, constructs a three-tier analytical model of "theoretical perspective—practical dilemmas—reconstruction path." It proposes a phased cultivation pathway: at the foundational stage, the focus is on bilingual competencies, interpreting skills and establishing professional ethics; at the advanced stage, the emphasis should be placed on cultivating critical application of technology, problem-solving capabilities for ill-structured problems, and interpreter agency in complex situations. Ultimately, from the four dimensions, namely, teaching objectives, content, methodology, and assessment, this study constructs a novel pedagogical framework aimed at cultivating high-caliber interpreters possessing national sentiment, global vision, solid language proficiency, domain expertise, and outstanding digital literacy.

Keywords: Generative Artificial Intelligence; Interpreter Education; Interpreter Agency; Cognitive Load; Higher-Order Thinking; Curriculum-based Ideological and Political Education; Phased Cultivation

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1. Introduction

Generative artificial intelligence (AIGC), by virtue of its strong language processing capabilities, are driving profound changes in the translation industry. A series of landmark events such as the adoption of AI simultaneous interpretation systems at the Shenzhen Two Sessions in 2025 that aroused widespread public discussion, the successive adjustments—or even suspension—of Master’s in Translation and Interpreting (MTI) programs at some universities both in China and abroad, and the consolidation of foreign language colleges, collectively lead to a series of questions: Will artificial intelligence replace human translators? Will human interpreters become obsolete? How should translation teaching and research respond to the challenges brought about by AI? What is the future development path for translation and even foreign language programs?^[2] Although large language models may be capable of providing acceptable translations for many types of content, they are not infallible. Concerns about bias, inconsistent terminology, lack of cultural nuances, and other risks in high-risk scenarios remain significant. Therefore, machine translation should be viewed as a complement to, rather than a replacement for, human translators^[3]. This judgment sets the tone for the survival and development of interpretation teaching: the focus of education must shift from repetitive skill training to advanced human cognition and situational behavior capabilities that are difficult for machines to replicate.

However, the direct impact of widespread application of AI on teaching is more complex and severe. According to observation in interpreting class, the author has summed up three typical dilemmas in teaching practice: First, Crisis of Professional Identity and Insufficient Learning Motivation. Due to dramatic changes in the industry ecosystem and the narrative of “replacement”, interpreting learners are anxious about about their professional prospects^[4]. Second, Improper Use of AI Tools has caused Cognitive Interference and Skill Atrophy. Some students overly rely on speech-to-text tools in core modules such as listening and note-taking. However, these tools do not always work because of the inverse influence by factors such as volume, accents, and distance. Therefore the use of AI tools may actually lead to cognitive overload, hinder interpreters’ deep processing of the original language meaning, and ultimately lead to a decline in interpretation quality. Third, the teaching mode lags behind the new normal of human-machine collaboration in the industry. Current teaching content still mainly focuses on the fragmented training of interpreting skills, and the integration of key topics such as critical evaluation of AI translation, post-editing of machine translation, and human-machine collaboration strategies is still insufficient.

Facing these challenges, the traditional traditional interpretation training and teaching model centered on skill-based training emphasizing “accuracy and fluency” shown its inadequacy. It is imperative to launch a reform in the teaching methods and it is now an urgent need to establish a phased developmental framework grounded in cognitive principles, with the cultivation of higher-order thinking and interpreter agency at its core.

This study, through theoretical synthesis and the analysis of pedagogical practices, aims to construct a systematic transformation path in interpreting education so as to provide a robust, theoretically grounded, and practical framework for cultivating qualified interpreters in the era of artificial intelligence.

2. Theoretical Perspective: An Integrated Framework of Cognitive Load, Agency, and Higher-Order Thinking

To cope with the teaching challenges in the AIGC era, it is necessary to establish a theoretical framework that can scientifically explain the cognitive process of interpreting, define the core value of interpreters, and guide

their competency development. This paper integrates Gile's Effort Models, interpreter agency theory, and higher-order thinking theory to form the basis of a three-tier analytical model.

2.1. Gile's Effort Models

Interpretation is a complex, time- and space-constrained, highly cognitive processing process. Whether it is consecutive interpretation or simultaneous interpretation, it involves a series of processes such as source language reception, information comprehension, code conversion, and target language expression. However, this series of processes is highly internalized and exists as a thinking process in the human brain. Linguistic theories alone cannot explain this complex cognitive process, while cognitive science provides new ideas for scientifically explaining the interpretation process^[5].

Gile's Effort Models provide a cognitive psychological basis for understanding the teaching dilemmas. According to Gile, simultaneous and consecutive interpreting are cognitive activities composed of multiple tasks such as Listening and Analysis (L), Production (P), Memory (M), Coordination (C), and Note-taking (N). The core inequality " $TR < TA$ " (Total Processing Capacity Requirement < Total Available Processing Capacity) indicates that successful interpreting relies on the rational allocation and coordination of efforts among these tasks^[5]. The improper use of AI tools, such as relying on inaccurate speech-to-text transcripts for listening, actually adds an additional subtask of information verification and error correction (increasing LR), will lead to "cognitive overload" that crowds out cognitive resources originally allocated for meaning integration and speech output, thereby causing mistranslations and omissions. This theoretically explains why technological assistance can sometimes lead to a decline in interpretation quality.

2.2. Interpreter agency

In the context of the rapid development of Artificial General Intelligence (AGI) the interpreting profession is undergoing a profound "technological turn," where the role and value of human interpreters are placed in the risk of being instrumentalized or even replaced. Against this backdrop, it is of significant theoretical and practical importance to emphasize and conduct in-depth research on interpreter agency. Agency refers to the capacity of interpreters, as proactive agents, to make judgments or decisions, and take actions in specific social, cultural, technological, and task contexts to deal with various complex factors that may affect interpreting work so as to ensure smooth communication goals^[6]. This concept goes beyond the traditional perception of interpreters as passive "language conduits," and repositions them as "communication facilitators" with responsibility, adaptability, and decision-making applicability^[7]. The agency of the interpreter can be manifested in the whole process of the interpreting task which include preparation and on-site interpreting to post-interpreting reflection, demonstrating the central role of interpreters in the dynamic interpreting ecosystem.

In the era of artificial intelligence, giving full play to interpreter agency can be explained by the following reasons: It helps to counter the perception of "instrumentalization." In the face of challenges posed by machine translation, agency underscores the unique abilities of interpreters in situational judgment, ethical decision-making, and cross-cultural mediation^[8], thereby safeguarding their irreplaceable professional value; It clarifies the interpreter's leading role in human-machine collaboration. Interpreters must select, evaluate, and adapt technological tools according to specific contexts^[9], ensuring that technology serves communication rather than dominating it. Finally, it aligns with the contemporary shift in interpreting studies. Modern research emphasizes the interaction between cognition and the environment. According the agency

theory, interpreters are placed in a real and dynamic work system for examination, allowing for a more comprehensive revelation of the complexity of their professional conduct.

In conclusion, emphasizing interpreter agency is crucial for ensuring that interpreters maintain their professional autonomy and core humanistic value in the wave of technology. This requires that interpreters, in the process of technological integration, are regarded as proactive decision-makers, not merely as users of technology.

2.3. Higher-order thinking

The theory of higher-order thinking offers a structured and pedagogically operational cognitive framework for cultivating the interpreter agency. Higher-order thinking is defined as a composite intellectual capacity centered on analysis, evaluation, and creation, fundamentally shifting focus from mechanical information processing to engaging with complex, open-ended, and uncertain “ill-structured problems”^[10]. Within translation studies, He Ying conceptualized higher-order thinking as decisional, creative, and critical thinking. Based on this, Zhang Jing^[11] introduced two additional facets—communicative thinking and affective thinking, in response to the new competencies required of translators in the AI era.

These five cognitive modes constitute the essential intellectual support that enables translators to navigate contemporary challenges and fulfill their professional roles in an AI-mediated landscape: critical thinking equips translators to systematically evaluate the accuracy, logical coherence, and cultural appropriateness of machine-generated output; creative thinking enables them to reconstruct meaning in linguistically or culturally nuanced domains where AI falls short, such as semantic gaps, metaphorical expressions, and stylistic subtleties; decisional thinking helps interpreters to make continuous strategic choices from task analysis and tool selection to final proofreading and ethical validation; communicative thinking facilitates not only effective human–machine interaction, but also promotes meaningful cross-cultural negotiation and mediation; affective thinking supports professional identity formation, ethical accountability, and the emotional intelligence necessary for empathetic cross-cultural engagement.

Thus, higher-order thinking is the core cognitive mechanism for interpreters to preserve and exercise their professional agency in technologically saturated environments. It transforms translators from passive users of technology into engaged, critical, and responsible agents—capable of harnessing AI tools, solving non-routine problems creatively, and making ethically informed decisions in complex, situated contexts of practice.

3. Real-world dilemmas: The challenges of interpreter education in the AIGC era

Based on the aforementioned theoretical framework, the current predicament of interpreter education can be summarized into the following three interrelated levels:

3.1. Learners’ Cognitive Level: Erosion of Core Interpreting Skills and Lack of Higher-Order Thinking Development

Traditional teaching follows Gile’s effort models, which aims to reduce the cognitive load of tasks such as Listening (L), Production (P), and Memory (M) through repeated training, thereby freeing up more cognitive resources for Coordination (C). However, the convenience of AIGC tools has led to the prevalence of “technological shortcuts”. For example, students may rely on speech-to-text technology to replace active listening and note-taking, or use machine-generated pre-translation to replace instant memory and

information reconstruction. This essentially bypasses the deep automation process of core skills, resulting in a deficiencies in their “Total Available Processing Capacity” at the basic level. Once faced with technical failures or high-pressure situations, their cognitive systems are very prone to collapse. The deeper impact is that the passive dependence on technology inhibits the development of critical thinking (such as analysis, evaluation, and inference) and creative thinking (such as adaptability and innovation)^[12]. Learning remains confined to low-order information reception and imitation, making it difficult to cope with the many “ill-structured problems” that are common in real interpreting scenarios.

3.2. Crisis of Professional Identity: Instrumental Narrative and Weakened Agency Perception

The one-dimensional narrative surrounding “AI replacing interpreters” in industry discourse, coupled with the one-sided emphasis on technology’s “empowerment” in teaching, has inadvertently reinforced the image of interpreters as “technical appendages” or “instrumental actors.” In this environment, learners tend to position themselves as “post-editors” or “post-processing units” for machines, rather than as discerning and agentive “communication facilitators” and “cultural mediators.” This narrow role perception weakens their professional identity and intrinsic motivation for learning.

Research shows that if the value of interpreters is reduced to merely “improving efficiency” or “filling technological gaps,” their more fundamental agency—such as ethical decision-making, cultural negotiation, situational adaptation, and creative problem-solving—becomes difficult to manifest and gain recognition. This lack of visibility further exacerbates the ambiguity and sense of crisis regarding their professional identity, trapping interpreters in a self-fulfilling prophecy of “instrumentalization” within technological integration.

3.3. Dimension of Pedagogy: Content, Methods, and Assessment Lagging Behind Industry Changes

Current teaching practices still primarily focus on traditional language knowledge and interpreting skills training, supplemented by thematic modules aimed at expanding students’ general knowledge. They have yet to systematically incorporate new content needed to adapt to industry evolution, such as translation technology ethics, human-machine collaborative workflow management, and critical evaluation of AI-generated translations. In terms of teaching methods, although attempts have been made to enhance practicality through simulated interpreting scenarios, the approach remains dominated by student practice, self- and peer evaluation, and teacher feedback. There is a lack of in-depth exploration into how to design teaching activities that encourage students to actively make technology-related choices, judgments, decisions, and creative applications—rather than simply mechanically operating technical tools. Regarding teaching evaluation, limited by class time and assessment frameworks, feedback often focuses heavily on the language quality of students’ final output, failing to cover all students. More importantly, there is a lack of systematic, multi-dimensional, and formative evaluation of students’ technology application strategies, problem-solving processes, ethical decision-making abilities, and collaborative performance.

4. Path Reconstruction: A Phased Pedagogical Framework Oriented Towards Higher-Order Thinking and Agency

To address the aforementioned dilemmas, interpreter education requires systematic reconstruction. This paper

proposes a “two-stage” cultivation path based on learners’ cognitive and professional development rule, with Curriculum-based Ideological and Political Education organically integrated throughout the process to cultivate students’ national sentiment and sense of mission in cultural dissemination.

4.1. Stage I: Foundational Period – Skill Automatization and Initial Professional Ethos Development

This stage focuses on consolidating core bilingual competencies and achieving the automatization of key interpreting skills such as listening comprehension, memory retention, note-taking, and immediate expression, while initially establishing professional ethics and safety awareness. In teaching practice, cognitive load principles are strictly followed to deliver intensive skill training under conditions of no technological dependency or controlled, limited assistance. For instance, during listening training, real-time captioning is disabled to guide students toward capturing meaning streams rather than transcribing words verbatim. In memory and note-taking exercises, emphasis is placed on the logical and visual structuring of information instead of word-for-word recording. Meanwhile, AI translation tools are introduced in translation or pre-task preparation exercises, with the instructional focus not on tool operation but on comparative analysis—guiding students to identify typical limitations of AI in handling culture-specific terms, idioms, and complex sentence structures, thereby fostering preliminary questioning and discernment skills as an early form of critical thinking. Additionally, foundational ethical issues such as data privacy and copyright awareness are integrated through case studies. Teaching materials featuring China’s developmental achievements and traditional cultural essence are carefully selected, enabling students to deepen their understanding of national conditions and cultural identity through language transfer.

4.2. Stage II: Advanced Development Period-Technology Integration, Ill-Structured Problem Solving, and Agency Cultivation

In the advanced stage, teaching objectives shift toward cultivating students’ comprehensive ability to critically integrate technological resources, creatively solve problems, and proactively fulfill interpreter responsibilities in authentic, complex, and dynamic interpreting environments. Teaching priorities are reflected in four areas: first, practical training in human-machine collaborative workflows, where students engage in simulated projects covering the complete process from AI-assisted pre-task preparation and real-time transcription-supported listening to human-led information integration and delivery, followed by post-task AI-assisted review, with a focus on developing their ability to dynamically decide whether and how to rely on technology based on factors such as speech rate, accent, and topic complexity; second, the design of ill-structured interpreting scenarios incorporating cultural metaphors, emotional tension, and unexpected situations, guiding students to perform cultural mediation or communicative intervention while transferring meaning and reinforcing their perception of agency through reflection; third, role-playing and case analysis of ethically contentious translation situations, helping students internalize ethical decision-making—such as choices regarding what, how, and with what technological responsibility to translate—as a core component of their agency; fourth, further integration of ideological and political education in high-level conference simulations and diplomatic interpreting contexts, emphasizing interpreters’ political sensitivity, cultural confidence, and stance-awareness, and nurturing their professional competence to effectively communicate China’s voice in cross-cultural contexts.

To align with the phased teaching objectives outlined above, it is essential to establish a diversified, process-oriented assessment system that focuses on the development of thinking and agency. In addition to

evaluating the quality of final interpreted output, assessment should incorporate various formats, including reflective reports on technology use, case analyses of ethical decision-making, behavioral observations from recorded simulated tasks, and peer- and self-evaluations, with particular attention to students' performance in technology application, problem-solving, ethical judgment, and collaborative communication. Simultaneously, learning platform data can be leveraged to record behavioral traces, providing a basis for ongoing formative assessment and truly realizing assessment that promotes learning and enhances competence.

5. Conclusion

The wave of Generative Artificial Intelligence is not the end of the interpreting profession but a profound call for paradigm innovation. It compels both educators and learners to collectively re-examine the essence of “translation” and the value of the “translator.” Future interpreting talents must be those who can harness technology rather than be harnessed by it; they must be artists capable of creatively bridging linguistic and cultural divides; and, most importantly, they must be responsible actors who uphold positions and convey values in complex global dialogues. The phased pedagogical path constructed in this paper, integrating the Effort Models, agency theory, and the higher-order thinking framework, aims to shift the pedagogical focus from “how to translate correctly” to “why to translate, for whom to translate, and how to translate wisely.” Only by completing this paradigm shift from a “skill-oriented” to a “skill-thinking-and-agency-oriented” approach can interpreter education solidify its value foundation amidst this technological revolution, cultivating more excellent communicators endowed with linguistic artistry, humanistic depth, and technological literacy for the nation, thereby shouldering the era's mission in constructing China's discourse system and building a community with a shared future for mankind.

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Disclosure statement

The author declares no conflict of interest.

References

- [1] American Translators Association, 2025, Think AI Should Replace Interpreters? Think Again. <https://www.atanet.org/advocacy-outreach/think-ai-should-replace-interpreters-think-again/>
- [2] Zhang W, 2024, Challenges and Prospects for n Majors in the AI Era: Based on a Large-Scale Social Survey. *Chinese Translators Journal*, (5): 139-148.
- [3] FIT Position Paper on Machine Translation in the Age of AI. https://en.fit-ift.org/wp-content/uploads/2025/08/PDP_202506_MT_EN_FINAL.pdf
- [4] Sun SY, 2025, A Preliminary Exploration of Interpreting Majors' Responses from the Perspective of AI Translation Anxiety. *Science Communication*, (1): 1-6.
- [5] Tang P, 2010, Viewing Imbalanced Effort Distribution in Interpreting through Gile's Effort Models. *China Science and Technology Information*, (3): 200-201.

- [6] Ding N, 2025, Human Interpreter Agency in the Era of General Artificial Intelligence: A Case Study of Conference Interpreters. *Computer-Assisted Foreign Language Education*, (2): 10-16.
- [7] Matthews J, 2006, Ebru Diriker (2004). De-/Re-Contextualizing Conference Interpreting: Interpreters in the Ivory Tower? *The Journal of Specialised Translation*, 151-157. DOI:10.26034/cm.jostrans.2006.775.
- [8] Wang H, Zhang Z, 2022, Research on Risk Assessment and Control of Machine Translation in the Digital Age. *Chinese Translators Journal*, (2): 109-115.
- [9] Wang HS, Li Z, 2020, Research on Translation Technology in the AI Era: Connotation, Classification, and Trends. *Foreign Languages and Cultures*, 4(1): 110-119.
- [10] He Y, 2016, A Study on the Problem-Solving Mechanism in Translation Oriented by Higher-Order Thinking. *Foreign Language Education*, 37(5): 86-90.
- [11] Zhang J, 2024, Construction of a Teaching Model for Translation Higher-Order Thinking in the Context of Generative Artificial Intelligence. *Chinese Translators Journal*, (3): 71-80.
- [12] Han X, 2025, An Exploration of the Critical Thinking Cultivation Model in Translation Teaching in the AI Era. *Journal of Hubei Open Vocational College*, 38(10): 173-178.

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