# The Integration Pathways of Chinese-English Bilingual Translation Pedagogy for English Majors and Generative Artificial Intelligence

**Ruoxuan Shang**

Jilin Engineering Normal University, Changchun, Jilin Province 130052

***Abstract:*** *With the rapid development of generative artificial intelligence technology, bilingual translation pedagogy for English majors now confronts new transformative opportunities and challenges in colleges and universities. In light of the current pain points in English translation pedagogy, this paper analyzes the application value of generative artificial intelligence in bilingual translation pedagogy, proposes specific integration pathways from four dimensions: redesign of learning objectives, optimization of instructional content, innovation of pedagogical models, and improvement of assessment systems, provides corresponding safeguard measures in response to the possible problems such as technological dependence and ethical risk that may arise during the integration process, and aims to offer reference for enhancing the core translation competence of English students and promoting the high-quality development of translation pedagogy.*

***Keywords:*** *Generative Artificial Intelligence (Generative AI); English Majors; Chinese-English Bilingual Translation Pedagogy; Integration Pathways; Core Literacy*

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## 1.Introduction

Against the backdrop of the deep integration of globalization and digitization, the market demand is becoming increasingly urgent for compound talents with cross-cultural communication skills and high-quality translation skills. As the core base for cultivating bilingual translation talents, the traditional pedagogical models for English majors have some problems in colleges and universities. For example, instructional content lags behind industry demand, instructional methods are difficult to take into account students' individualized development, and the assessment systems emphasize outcomes over process. They can no longer fully meet the requirements of cultivating translation talents in the new era. Generative AI (such as ChatGPT, DeepL Write, SparkDesk) has provided technical support for the innovation of bilingual translation pedagogy with its powerful capabilities in natural language processing, text generation and analysis of context [1]. It has become an important issue in the current translation pedagogical reform in colleges and universities how to deeply integrate generative AI with bilingual translation pedagogy for English majors, break through the limitations of traditional pedagogy, and cultivate students' translation innovation ability and critical thinking.

## 2.The Current Situation and Pain Points of Bilingual Translation Pedagogy for English Majors in Colleges and Universities

### 2.1 *Instructional Content Is Divorced with Industry Demand*

At present, bilingual translation pedagogy for university English majors mostly takes classic literature texts and general news texts as the main teaching materials, while neglecting the professional translation requirements in science and technology, law, business, and other fields. According to the *China Translation Industry Development Report (2024)*, the share of scientific and technological translation and cross-border e-commerce business translation has exceeded 40% in translation market, however, the proportion of texts in professional fields is less than 20% in most university translation courses. Meanwhile, slow update speed makes instructional content difficult to cover the terminology and professional expression in emerging fields such as artificial intelligence and the metaverse, resulting in that students have to spend a considerable amount of extra time learning specialized knowledge when they enter the workplace after graduation, and reduce their employment competitiveness.

### 2.2 *Instructional Methods Are Difficult to Meet Personalized Demand*

Traditional translation pedagogy mostly adopts a unidirectional spoon-feeding pedagogical model of "teacher explanation-student practice-teacher correction", making it difficult for teachers to make personalized teaching schemes based on students' translation proficiency and weak points (such as lexical collocation, conversion of sentence patterns, and acculturation) [2]. For instance, in English-Chinese translation pedagogy, some students are good at sentence pattern reconstruction, but lack cultural background knowledge, while others have deficiencies in word selection. However, teachers often adopt a uniform teaching schedule and exercises for practice, and thus fail to achieve "teaching students in accordance with their aptitude". In addition, the classroom teaching time is limited, making it difficult for teachers to make detailed comments on each student's translation assignment. As a result, students cannot promptly understand their own problems, leading to low learning efficiency.

### 2.3 *Assessment Systems Focus on Outcomes While Neglecting the Process*

At present, the assessment on translation pedagogy mainly based on the final written test scores and the scores of after-class assignments, and emphasizes the correctness and completeness of the translation results while neglecting the thinking process, the use of strategies and innovation of students during the translation process. For instance, when assessing students' assignments to translate business contracts, teachers often focus on whether the terms are translated accurately, but fail to pay attention to whether students have employed translation strategies such as "term consistency checking" and "context adaptation analysis". When students come up with new expressions in translation that deviate from the "standard answers", they are often directly marked as incorrect, which stifles students' innovative thinking [3]. This assessment model cannot fully reflect students' core literacy of translation and is also difficult to guide students to focus on the optimization of the translation process.

## 3.The Application Value of Generative AI in Chinese-English Bilingual Translation Pedagogy

### 3.1 *Enriching Educational Resources to Align with Industry Demand*

Generative AI can quickly generate bilingual translation materials of different fields and difficulty according to teaching needs. For example, teachers can enter "generate 10 Chinese-English bilingual translation cases in the field of science and technology (artificial intelligence), including terminology explanations" through ChatGPT. The system can generate cases covering terms such as "machine learning" and "neural network" within one minute, and attach explanations about the context in which terms are used. In addition, generative AI can grab the latest industry texts in real time (such as product descriptions on cross-border e-commerce platforms and policy documents of international organizations), and transform them into teaching materials to ensure that the instructional content is in line with industry demand.

### 3.2 *Realizing Personalized Learning to Enhance Learning Efficiency*

Generative AI can accurately identify students' weak points by analyzing their translation assignments and generate personalized learning programs [4]. For instance, after a student submits an English-Chinese translation assignment, SparkDesk can automatically identify the problems of students in "conversion of passive voice" and "translation of cultural-loaded words", and push targeted exercises such as 10 cases of English-Chinese translation in passive voice and a comparative analysis of the translation of 5 cultural-loaded words like "Loong" and "phoenix". Meanwhile, generative AI can act as an "intelligent teaching assistant" to provide real-time feedback to students. For instance, when students are practicing Chinese-English translation and input "请翻译‘人工智能技术的发展为医疗行业带来了新机遇’", the system not only generates reference translations, but also conducts a contrastive analysis of the discrepancies between students' translations and the reference, and specifically points out that "using 'bring about' to translate '带来' is more aligned with formal English expressions", which helps students correct their problems in a timely manner.

### 3.3 *Optimizing Assessment Systems to Focus on Process-Oriented Growth*

Generative AI can build a dual-dimension translation assessment system of "process + outcome". In terms of process assessment, the system can record students' translation process (such as the number of revisions, the reference materials consulted, and the translation strategies used), and generate a "translation process report". For example, after a student completes the translation of a legal text, the report can show that "the student has revised it a total of three times, focused on optimizing the expression of 'liability for breach of contract', referred to the reference materials of the English version of the *Contract Law of the People's Republic of China*, and used the strategy of 'Terminology consistency'" to help teachers understand students' thinking processes. In terms of outcome assessment, the system can conduct quantitative assessment on the translation results from four dimensions: "accuracy, fluency, acculturation, and professionalism", and provide specific improvement suggestions to achieve comprehensiveness and guidance of assessments.

## 4.The Integration Pathways of Chinese-English Bilingual Translation Pedagogy for English Majors and Generative AI

### 4.1 *Redesigning Learning Objectives: Focusing on the Core Literacy of "Technology + Translation"*

The traditional learning objectives of translation mainly focus on "mastering translation skills and enhancing language proficiency". After integrating generative AI, they need to be redesigned as "cultivating compound translation talents with technical application ability, critical thinking, and cross-cultural communication skills", which can be divided into three levels specifically. The first is the basic level, which enables students to master the basic operations of generative AI tools (such as ChatGPT, DeepL), including text input, parameter setting (such as translation style, difficulty of target language), and export of results; The second is the advanced level, which guides students to use AI tools to solve translation problems, such as using ChatGPT for term input validation and DeepL for long sentence splitting and restructuring. The third is the higher level, which cultivates students' critical thinking, and enables them to identify and correct errors in AI translation (such as semantic deviation and cultural misunderstanding).

### 4.2 *Optimizing Instructional Content: Constructing a "Dynamic + Hierarchical" Content System*

Colleges and universities can construct an instructional content system featuring "dynamic update and hierarchical design" based on the technological advantages of generative AI. On the one hand, they can establish "material libraries of industry dynamics", and use generative AI to grab the latest texts in technology, law, business, and other sectors in real time, and update teaching materials once a month to ensure the timeliness of the content. For instance, in the science and technology translation module can be added the latest industry report translation materials on "metaverse" and "blockchain". In the legal translation module can be added the latest case texts of international commercial arbitration [5]. On the other hand, they can divide the instructional content into "basic level (general text translation)", "advanced level (professional text translation)", and "higher level (complex text translation)" based on students' translation proficiency, and push corresponding materials to students of different levels using generative AI.

### 4.3 *Innovating Pedagogical Models: Creating a Blended Model of "AI+ Teacher-Student Interaction"*

Colleges and universities can break the traditional "teacher-led" pedagogical model and create a blended pedagogical model of "AI assistance + teacher-student interaction", which can be specifically divided into three links. Teachers generate preview task sheets through generative AI, which consist of three parts: "Comb of Basic Knowledge Points", "Preview Exercises", and "Question Collection". For instance, before teaching English-Chinese translation, a teacher uses ChatGPT to generate a summary of the knowledge points of "attributive clause translation Skills" (including 3 typical cases), and pushes English-Chinese translation exercises of 5 attributive clauses. After students complete the exercises, they submit their questions (such as "How to translate attributive clauses when the antecedents are nouns of time") to the AI system. The system automatically sorts out the high-frequency questions

and feeds them back to teachers to provide basis for classroom teaching. In classroom, teachers explain the high-frequency problems of students and then use generative AI to carry out "synergetic exploration activities". For example, in cultural-loaded word translation pedagogy, when teachers ask students to use ChatGPT to translate words such as "春节" and "中秋节", the system will generate multiple translations (such as "Spring Festival" and "Chinese New Year"); Teachers guide the students to discuss the applicable scenarios of different translations ("Spring Festival "focuses more on the name of the festival, and" Chinese New Year "focuses more on cultural symbols), and ask the AI to supplement the translation differences of" festivals "in different countries (such as the expressions of" Christmas "in different languages) to deepen students' understanding of acculturation. In addition, teachers can use AI to carry out "translation competition" activities. Students are divided into groups to use AI tools to complete the translation of a business text. After each group shows their achievements, AI scores them from "accuracy, fluency" and other dimensions. Teachers then comment on the application of strategies by each group to stimulate students' interest in learning. After class, generative AI generates personalized revision plans based on students' classroom performance and preview situations.

### 4.4 *Perfecting Assessment Systems: Establishing a "Diversified + Dynamic" Assessment Mechanism*

Colleges and universities can integrate generative AI to establish an assessment mechanism for translation pedagogy featuring "multiple subjects and dynamic monitoring". From the perspective of the assessment subjects, in addition to teacher assessment, this model introduces "AI assessment", "student self-assessment", and "peer assessment". AI assessment is responsible for quantitatively analyzing the accuracy and fluency of the translation results and recording the translation process. Student self-assessment requires students to combine AI feedback to analyze their own strengths and weaknesses in translation strategies and technology application. Peer assessment is to ask students to comment on each other's translation assignments in groups, with a focus on acculturation and innovative expressions. From the perspective of the assessment cycle, the model breaks the model of "one-time assessment at the end of the term", and implements a dynamic assessment of "weekly monitoring + monthly summary + each semester-based assessment". Every week, the AI system collects data on the translation exercises of students and generates a "weekly learning report". Every month, a centralized assessment is conducted to combine teachers' comments, AI analysis, and student self-assessment to summarize students' progress and problems. At the end of the semester, based on the assessment results of each stage, a final assessment will be given.

## 5.Challenges and Safeguard Measures in the Integration Process

### 5.1 *Main Challenges*

Some students may overly rely on AI translation, directly copy the translations generated by AI and neglect the cultivation of their own language competence and translation thinking, which leads to their "degradation of translation competence". When generative AI processes students' translation assignments, it may involve the privacy of students' personal learning data. At the same time, the translation content generated by AI may have copyright issues (such as the industry texts grabbed without authorization), which have triggered ethical controversies. Some translation teachers have limited understanding of the technical principles and operation methods of generative AI in colleges and universities, which makes it difficult for them to effectively guide students to use AI tools and affects the effect of confluent education.

### 5.2 *Safeguard Measures*

Teachers should make it clear in teaching that "AI is an auxiliary tool rather than a substitute", and guide students to use AI reasonably by setting up "AI-assisted translation tasks" (such as asking students to compare their own translations with those of AI, analyze the differences and explain the reasons for correction). Meanwhile, they can conduct regular "AI-free translation tests" to assess students' independent translation competence, and make an appointment with those students who overly rely on AI to strengthen their awareness of "independent translation". Colleges and universities should make the *Application Specifications of Generative Artificial Intelligence in*

*Translation Pedagogy* to clearly define the data collection scope of AI tools (only collecting the data on students' translation exercises and not involving personal privacy information), and sign data confidentiality agreements with AI service providers. For the industry text materials grabbed, schools' intellectual property departments are in charge of reviewing the copyright to ensure the legality of the materials, and at the same time, popularize AI ethics among students, and guide them to respect intellectual property rights, and not directly use unauthorized AI-generated content. Colleges and universities can enhance teachers' application ability of generative AI through a "special training + school-enterprise cooperation" approach. They can regularly invite experts in the field of AI to conduct teacher training to explain the application skills of AI in translation pedagogy (such as parameter setting of ChatGPT and advanced functions of DeepL), and cooperate with AI enterprises (such as iFlytek and DeepL) to establish "Teacher Practice Bases", and enable teachers to participate in the research and development of pedagogical functions of AI translation tools and enhance their technical practical ability. In addition, they can encourage teachers to carry out teaching and research projects on "AI+ translation pedagogy", summarize the integration experience, and form pedagogical cases that can be promoted.

## 6.Conclusion

Generative AI offers a new opportunity for the reform of bilingual translation pedagogy for English majors in colleges and universities. By redesigning learning objectives, optimizing instructional content, innovating pedagogical models, and improving the assessment system, colleges and universities can effectively address the pain points of traditional pedagogy and enhance students' core literacy of translation and employment competitiveness. However, the integration of the two is not merely a simple "technological superposition", but rather requires a balance between "technological application" and "ability cultivation" in teaching practice to avoid technological dependence and ethical risk. In the future, colleges and universities should further explore the deep integration model of generative AI and translation pedagogy, continuously optimize the integration pathways in light of industry demand and students' development characteristics, and lay foundation for cultivating compound translation talents that meet the needs of the new era.

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