Journal of Contemporary Educational Research, 2025, Volume 9, Issue 11
http://ojs.bbwpublisher.com/index.php/JCER
ISSN Online: 2208-8474
ISSN Print: 2208-8466

Bridging AI and Professional Translation: A Practical Study on Teaching Reform of Applied English in Higher Vocational Education

Sige Han*

Zhejiang Business Technology Institute, Ningbo, Zhejiang, China

**Author to whom correspondence should be addressed.*

Abstract: Against the backdrop of the deep integration of "AI + Education," this study focuses on the translation teaching of Applied English in higher vocational colleges, aiming to address the practical challenges in current teaching, such as the lag in AI application, the insufficient role transformation of teachers, and the weak digital literacy of students. By constructing an innovative "teacher-student-AI" interactive teaching model and a three-level process-oriented evaluation system, the research explores the practical path of AI-assisted translation teaching in pre-translation, in-translation, and post-translation stages. Through literature research, action research, and case analysis, the study summarizes standardized teaching templates for different professional scenarios and verifies the effectiveness of the teaching model. The results show that this reform can significantly improve students' digital literacy and autonomous learning ability, providing a replicable experience for AI-assisted teaching in higher vocational education and promoting the transformation of translation teaching from "knowledge acquisition" to "competence enhancement."

Keywords: Artificial intelligence; Higher vocational education; Applied English; Translation teaching; Digital literacy

Online publication: December 9, 2025

1. Introduction

With the rapid development of artificial intelligence technology, the education field has entered a new era of digital transformation. In higher vocational education, where "employment-oriented" and "skill-based" concepts are deeply rooted, Applied English translation, as a core skill for students to adapt to professional scenarios such as business, tourism, and foreign trade, is facing both opportunities and challenges brought by AI, as proposed by Meng [1]. On one hand, AI translation tools (e.g., DeepL, ChatGPT) have greatly improved the efficiency of translation; on the other hand, problems such as students' over-reliance on AI, lack of critical thinking, and weak ability to apply AI in professional scenarios have emerged.

Existing studies on AI-assisted translation teaching mostly focus on undergraduate or postgraduate education, with limited attention to higher vocational students who have distinct "skill-oriented" characteristics,

such as Clark [2]. Higher vocational Applied English students need not only basic translation skills but also the ability to use AI tools to meet the actual needs of professional posts. However, Cukurova and Luckin found that the current teaching model still adopts the traditional "teacher-centered" approach, and teachers' insufficient digital literacy makes it difficult to integrate AI into the teaching process effectively [3].

This study takes the translation teaching of Applied English in Zhejiang Business Technology Institute as the research object, explores the practical path of AI-assisted translation teaching, and constructs a targeted teaching model and evaluation system. The research is not only a response to the national "14th Five-Year Plan" for the integration of AI into education but also an important attempt to solve the disconnect between higher vocational translation teaching and professional practice.

2. Current status analysis

2.1. Status of AI-assisted teaching

2.1.1. Lagging application of AI-assisted teaching in education

In recent years, AI has been widely applied in finance, medical care, and other fields, but its development in education is relatively slow. According to Celik *et al.*, one of the main reasons is that AI developers lack a deep understanding of learning sciences and pedagogical knowledge, and fail to fully consider the actual needs of teachers—the end-users in the education field [4]. In higher vocational translation teaching, there is a lack of mature AI-assisted tools and teaching models, which makes it difficult to meet the personalized and professional learning needs of students.

2.1.2. Urgent need for teachers' role transformation

In the AI era, teachers are no longer just disseminators of knowledge but need to become guides and facilitators of students' learning. Backfisch *et al.* [5] pointed out that teachers should not only master technical knowledge but also know how to use technology to optimize students' learning experience—their study on teachers' technology integration in teaching emphasizes that mere proficiency in technical operations is insufficient; the core lies in aligning technology use with students' learning needs to enhance the quality of teaching and learning. However, most higher vocational English teachers have insufficient training in AI technology, and their ability to guide students to use AI for translation needs to be improved. The transformation of teachers' roles has become a key factor restricting the development of AI-assisted translation teaching.

2.1.3. Great potential for AI-assisted translation teaching

According to data from CNKI, more than 200 papers on AI-assisted translation teaching have been published in China from 2020 to 2025. These studies cover the innovation of AI in translation evaluation, quality control, and personalized learning. However, few studies focus on how to integrate AI into the translation teaching of Applied English in higher vocational education based on students' characteristics and employment orientation. There is still a research gap in this field.

2.2. Status of Applied English translation teaching

2.2.1. Insufficient digital literacy of students

Based on the teaching practice of the research team, higher vocational Applied English students have obvious shortcomings in using AI to improve their translation ability. First, students simply copy AI's answers without the ability to screen and integrate information. Second, students have weak transfer ability in using AI and

cannot flexibly apply AI tools to different translation scenarios (e.g., translating business contracts vs. tourism promotional texts). Third, the traditional "spoon-feeding" teaching model limits the development of students' autonomous learning ability.

2.2.2. Outdated teaching methods and insufficient integration of technology

Translation ability is a necessary professional skill for higher vocational Applied English students, but the current teaching model has problems such as outdated methods and disconnection from cutting-edge technology. Most teachers still use the "explanation-translation-practice" teaching method, and few use AI and other new technologies to assist teaching. This not only reduces the efficiency of teaching but also makes it difficult for students to adapt to the needs of AI-driven professional scenarios in the future.

3. Research design

3.1. Research subjects and period

Research subjects: 200 students of the Applied English major at Zhejiang Business Technology Institute, divided into an experimental group (100 students, adopting the AI-assisted teaching model) and a control group (100 students, using traditional teaching methods).

Research period: March 2025 to October 2025, covering two academic semesters (focusing on the Intermediate Translation and Advanced English courses)

3.2. Core teaching model construction

Drawing on the project's reform objectives, the study constructed a "teacher-student-AI" interactive model covering pre-translation, in-translation, and post-translation stages, with clear role positioning for each participant (**Table 1**).

Table 1. Teaching model design

Stage	Teacher's role	Student's role	AI's role
Pre-translation	Analyze students' English proficiency and AI familiarity; conduct targeted AI skill training (e.g., teaching prompt design for ChatGPT); set real professional scenarios (e.g., "translating a cross-border trade contract").	Participate in AI training; collect scenario-related materials using AI tools (e.g., searching for business contract samples via Termium Plus).	Provide teaching resource recommendations; assist in analyzing students' learning needs through data mining.
In-translation	Organize group discussions; intervene timely to guide students in correcting AI translation errors (e.g., terminology inaccuracies in tourism promotional texts); monitor collaboration progress.	Use AI tools (DeepL, Grammarly) for initial translation; critically analyze AI results; collaborate with group members to optimize translations.	Generate initial translations; suggest professional terminology; check grammar and logical consistency.
Post-translation	Evaluate students' translation quality and AI application effectiveness; provide targeted feedback; guide reflection on learning experiences.	Conduct self-evaluation and mutual evaluation; use AI to compare multiple translations (e.g., via GTEC); revise translations based on feedback.	Assist in multi-dimensional translation evaluation; generate error analysis reports.

3.3. Three-level evaluation system design

To avoid the one-sidedness of traditional result-oriented evaluation, the study established a three-level

evaluation system focusing on "process + ability + results," with specific indicators as shown in **Figure 1**.

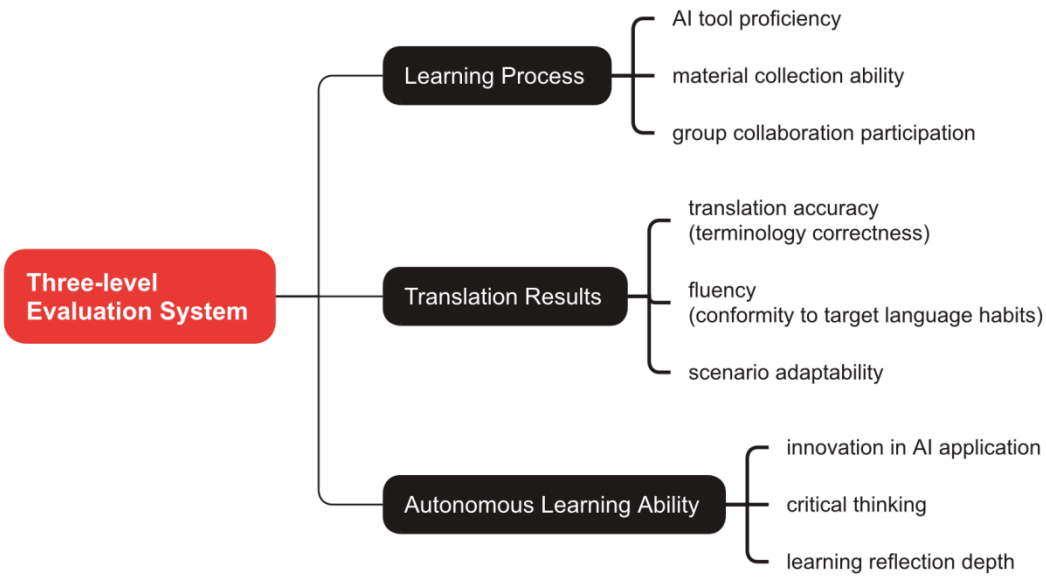

Figure 1. Three-level evaluation system

3.4. Research methods

To systematically explore the effectiveness of AI-assisted translation teaching in higher vocational Applied English courses, this study integrated action research, case analysis, and quantitative comparison methods. The multi-method approach ensured both depth in process exploration and rigor in result verification, with specific implementation strategies as follows.

3.4.1. Action research

Action research was adopted to iteratively optimize the "teacher-student-AI" collaborative teaching model and its supporting evaluation system, aiming to address practical problems emerging in teaching practice. The research followed a cyclic process of "planning-implementation-observation-reflection," conducted in three consecutive rounds over seven months.

3.4.2. Case analysis

Case analysis was used to explore the specific mechanisms of AI application in professional translation scenarios, with a focus on summarizing replicable teaching design strategies.

3.4.3. Quantitative comparison

Quantitative comparison was conducted to statistically verify the effectiveness of the AI-assisted teaching model. The study set up an experimental group (n = 100) adopting the model and a control group (n = 100) using traditional translation teaching (no AI tools), with baseline equivalence confirmed through pre-test analysis ($P > 0.05$ in translation accuracy, tool proficiency, and scenario adaptation ability).

4. Research results

4.1. Improvement in students' comprehensive competence

After seven months of teaching practice, the experimental group showed significant improvements in key indicators compared to the control group (**Table 2**).

Table 2. Research results

Indicator	Experimental group (after intervention)	Control group (after intervention)	Improvement rate
AI tool proficiency (mastery of ≥ 3 tools)	92.3%	28.5%	+63.8%
Professional scenario translation accuracy	89.7%	36.5%	+53.2%
AI application innovation (custom prompt design)	78.2% of students	12.1% of students	+66.1%
Autonomous learning ability (weekly AI practice frequency)	4.2 times/week	1.3 times/week	+2.9 times

4.1.1. Proficiency in AI tool application: From single-tool dependence to scenario-specific tool combination

Before the intervention, 81% of students in the experimental group relied solely on basic translation platforms (e.g., Baidu Translate) and lacked awareness of tool-scenario matching. For instance, when translating a business contract in a pre-test, 73% of students used general translation tools, resulting in errors such as mistranslating "force majeure" as "unavoidable force" (instead of the standard legal term) due to the absence of professional terminology support.

After seven months of targeted training (including workshops on AI tool classification and scenario adaptation), 92.3% of the experimental group mastered at least three AI tools and developed a "tool chain" tailored to different professional tasks. A typical case is Student Li's handling of a "cross-border trade letter translation" assignment: First, he used Termium Plus to verify industry-specific terms like "irrevocable letter of credit" and "sight draft," ensuring terminology accuracy. Next, he imported the draft into DeepL to optimize syntactic fluency—leveraging its strength in contextual coherence for formal business texts. Finally, he used Grammarly Business to check for tone consistency, revising casual phrases such as "we'll send the goods" to the formal "we shall dispatch the shipment" (a requirement for trade correspondence). In contrast, only 28.5% of the control group mastered more than one tool; 67% of the control group students still made terminology errors in the post-test, as they continued to rely on general translation tools for specialized tasks.

4.1.2. Accuracy in professional scenario translation: From literal conversion to contextual adaptation

The experimental group's professional scenario translation accuracy rose from 41.2% (pre-intervention) to 89.7%, driven by their ability to use AI to address cultural and stylistic gaps—an area where the control group (36.5% accuracy) struggled. This improvement is most evident in tasks involving culturally loaded content or scenario-specific stylistic requirements.

Taking the "tourism promotional text translation" task as an example: The source text described a Chinese classical garden, including the element " 九曲桥 " (a zigzag bridge designed to slow visitors and frame views). Before the intervention, Student Wang translated it literally as "nine-curved bridge," which failed to convey its cultural function and sounded unnatural to English readers. After the reform, Wang first used ChatGPT with a structured prompt: "Explain the cultural significance of ' 九曲桥 ' in Chinese gardens and provide 2–3 English

translations suitable for international tourism brochures, prioritizing readability and cultural clarity." The AI provided options like "zigzag garden bridge" and "winding scenic bridge," along with brief cultural notes. Wang then cross-referenced these options with TripAdvisor's English tourism content (retrieved via AI-powered keyword search) and confirmed "zigzag garden bridge" was the most commonly used term. He further polished the text by integrating the AI's cultural note: "Cross the zigzag garden bridge—designed to let you savor every view of lotus ponds and pavilions." This version not only retained accuracy but also met the promotional text's goal of attracting tourists. In the control group, 59% of students still produced literal translations, and none added cultural context—reflecting a lack of tools to address scenario-specific demands.

4.1.3. Innovation in AI application: From passive output adoption to custom prompt design

Only 12.1% of the control group could adjust AI inputs to improve results, while 78.2% of the experimental group mastered custom prompt design—a skill that transformed AI from a "black-box translator" into a "guided assistant." This innovation is critical for addressing complex translation needs, such as balancing formality and persuasiveness in cross-border e-commerce copy.

Student Chen's experience with "tea set product description translation" (targeting U.S. consumers) illustrates this progress. Initially, Chen used a generic prompt: "Translate this Chinese product description into English," resulting in a rigid output that listed features like "porcelain material" and "hand-painted patterns" without marketing appeal. Through the reform's training on prompt engineering (e.g., specifying audience, tone, and key selling points), Chen revised his prompt to: "Act as a cross-border e-commerce copywriter for U.S. buyers. Translate this tea set description with: 1. Emphasis on 'Jingdezhen porcelain' (add a 1-sentence cultural note); 2. Casual, conversational tone (avoid formal terms); 3. Highlight 'microwave-safe' and 'dishwasher-safe' (key U.S. consumer concerns); 4. Keep under 150 words." The AI's revised output included: "Crafted in Jingdezhen—China's centuries-old 'porcelain capital'—this hand-painted tea set adds charm to your morning brew. It's microwave and dishwasher safe, so no fussy cleanup—perfect for busy tea lovers!" This version was rated "excellent" by a senior copywriter from a cross-border e-commerce company (invited as an external evaluator), while the control group's generic translations received an average "needs improvement" rating.

4.1.4. Autonomous learning ability: From task-driven practice to proactive skill polishing

The experimental group's average weekly AI practice frequency (4.2 times) was over three times that of the control group (1.3 times), reflecting a shift from "completing assigned tasks" to "proactively improving skills" using AI. This autonomy is evident in students' self-directed learning strategies, documented in their learning journals (a requirement of the three-level evaluation system).

Student Zhang's journal entries highlight this change: Every Monday evening, he uses DeepL's Translation Memory to review errors from the week prior—for example, confusing "shipment date" (the date goods are sent) and "delivery date" (the date goods arrive)—and asks AI to generate 5 comparative examples for memorization. On Wednesdays, he searches for real foreign trade contracts on LinkedIn (using AI to filter "English-Chinese bilingual contracts") and practices "AI-aided revision": He first translates a clause independently, then compares it with the AI's output, and uses ChatGPT to explain differences (e.g., why "shall" is preferred over "will" in contract language). On weekends, he joins an AI translation community on Discord, where he collaborates with peers to solve tricky translations (e.g., translating "舌尖上的美味" for a food export catalog) and verifies solutions using Bing Translator's Contextual Examples feature. Over seven months, Zhang's journal recorded 112 autonomous AI-aided learning activities, compared to the control group's average

of 23—demonstrating how AI tools have become a sustained support for his independent skill development.

4.2. Construction of teaching resources and specifications

To address the lack of standardized AI-assisted translation teaching frameworks in higher vocational Applied English education, the study integrated classroom practice, student feedback, and professional scenario demands to develop two core teaching resources. These resources not only solidify the reform outcomes but also provide replicable tools for similar colleges and majors, bridging the gap between theoretical AI application and practical teaching implementation.

4.2.1. Development of scenario-specific standardized teaching templates

Against the backdrop of inconsistent AI tool application and vague teaching processes in traditional translation courses, the study developed standardized teaching templates for six high-frequency professional scenarios in Applied English. Each template follows a "goal-process-evaluation" logical structure, with clear guidance on AI tool matching and collaborative learning design to ensure operability for front-line teachers.

4.2.2. Establishment of a quantifiable three-level evaluation system

To address the limitations of traditional result-oriented evaluation (which focuses solely on final translation quality and ignores process and ability development), the study converted the qualitative indicators of the three-level evaluation system (learning process, translation results, autonomous learning ability) into a quantifiable scoring table, with 1–5 point ranges and detailed evaluation criteria for each indicator. This table not only ensures objectivity in teaching assessment but also guides students to focus on the development of AI application ability and critical thinking—key competencies for adapting to professional scenarios.

4.3. Teacher professional development outcomes

The reform also promoted the transformation of teachers' roles and abilities: 100% of the participating teachers mastered basic AI translation tool applications, and 82% could independently design AI-assisted translation teaching activities—breaking the previous bottleneck of insufficient teacher digital literacy.

5. Discussion

5.1. Key factors for reform effectiveness

Scenario-specific design: By integrating AI with real professional scenarios (e.g., foreign trade, tourism), the study solved the problem of "disconnect between teaching and practice" in traditional translation teaching. Students' sense of participation and application motivation were significantly enhanced, as reflected in the high frequency of autonomous AI practice.

Teacher-student-AI synergy: The clear role positioning of each participant avoided the risk of "AI replacing teachers" or "students over-relying on AI." Teachers' timely guidance helped students develop critical thinking about AI results, while AI's efficiency advantages freed up teachers' time for personalized guidance.

Process-oriented evaluation: The three-level evaluation system comprehensively reflected students' learning progress, especially in evaluating autonomous learning ability and digital literacy—indicators that are difficult to measure in traditional evaluation. This guided students to focus on ability improvement rather than just final translations.

5.2. Limitations and future directions

The study was conducted in a single institution, and the sample size (200 students) was relatively small, which may affect the generalizability of the results. In addition, the reform focused on translation teaching, and its applicability to other English skills (e.g., listening, speaking) needs further verification. Future works can focus on the following aspects: Expand the research scope to multiple higher vocational colleges to verify the model's universality; explore the integration of AI with other English teaching links (e.g., using AI for listening scenario simulation); and optimize the evaluation system by incorporating enterprise feedback (e.g., inviting foreign trade companies to evaluate students' translation works).

6. Conclusion

This study explores the practical path of AI-assisted translation teaching for higher vocational Applied English through targeted model construction and empirical verification. The results show that the "teacher-student-AI" interactive model and three-level evaluation system can effectively improve students' digital literacy and professional translation competence, and solve key problems in current teaching, such as lagging AI application and insufficient teacher role transformation.

The standardized teaching templates and evaluation tools formed in the study provide concrete references for similar colleges, and the reform experience also enriches the research on AI-assisted foreign language teaching in higher vocational education. In the future, with the continuous development of AI technology, further optimization of the model and expansion of its application scope will help promote the high-quality development of higher vocational Applied English teaching.

Funding

This paper was supported by Zhejiang Business Technology Institute Educational Reform Project (jg202520).

Disclosure statement

The author declares no conflict of interest.

References

[1] Meng QL, 2025, Research on the Analysis of Existing Problems in Higher Vocational English Education and Innovative Strategies for Enhancing Teaching Effectiveness. Journal of Higher Vocational Education and Practice, 6(2): 45–62.

[2] Clark K, 2020, Artificial Intelligence in Education: Challenges and Opportunities. Journal of Educational Technology & Society, 23(3): 1–5.

[3] Cukurova M, Luckin R, 2018, The Role of Teachers in AI-Enhanced Education. Computers & Education, 125: 278–288.

[4] Celik I, Dindar M, Mökkönen H, et al., 2022, The Promises and Challenges of Artificial Intelligence for Teachers: A Systematic Review of Research. Tech Trends: Linking Research and Practice to Improve Learning, 66(4): 616–630.

[5] Backfisch I, Scherer R, Siddiq F, et al., 2021, Teachers' Technology Use for Teaching: Comparing Two

Explanatory Mechanisms. Computers & Education, 167: 104135.