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Research on the Blended Teaching Model of Vocational Undergraduate Course *Applied English Translation* Under the TPACK Framework

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Abstract: Against the background of the integration of "post-course-competition-certificate" in vocational undergraduate education, Applied English Translation, as a core course for cultivating students' professional language service capabilities, needs to break through the limitations of the traditional teaching model of "theoretical lecture + single practice". Based on the TPACK (Technological Pedagogical Content Knowledge) framework and combined with the professional characteristics of vocational undergraduate colleges (taking fields such as ceramic art and cross-border e-commerce as examples), this paper constructs a blended teaching model featuring in-depth integration of "technology-content-pedagogy". By reconstructing curriculum content modules, designing a "online + offline" dual-track teaching process, and developing an intelligent teaching support system, it solves problems in translation teaching such as "lack of professional scenarios", "superficial application of technology", and "single evaluation dimension". Practice shows that this model can significantly improve students' practical translation capabilities in professional scenarios, providing theoretical reference and practical paradigm for the reform of blended teaching in foreign language courses of vocational undergraduate education.

Keywords: TPACK Framework; Vocational Undergraduate Education; Applied English Translation; Blended Teaching Model; Professional Language Service Capability

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1. Introduction

Vocational undergraduate education takes cultivating "compound talents with professional technical capabilities and vocational literacy" as its core goal[1]. As a core course for foreign language majors, *Applied English Translation* must be closely aligned with the needs of workplace translation—such as translation of ceramic cultural and creative product manuals, drafting of cross-border e-commerce contracts, and localization of international exhibition materials. It requires students to not only master translation theories and skills, but also possess "technical tool application capabilities" and "professional scenario adaptation capabilities"[2]. However, the current teaching of *Applied English Translation* in vocational undergraduate education faces three major pain points: first, the disconnection between teaching content and

professional needs, with excessive focus on literary translation or general texts and lack of industry-specific content such as ceramic technology terminology and cross-border business norms; second, the superficial application of technology, where online platforms are only used for assigning homework, and technologies such as AI translation tools and terminology database construction are not integrated into the entire teaching process; third, the singularity of teaching methods, which are dominated by "teacher explanation + student practice" and lack immersive practice with online-offline linkage.

The TPACK framework, proposed by Mishra and Koehler, focuses on the dynamic integration of "Content Knowledge (CK)", "Pedagogical Knowledge (PK)", and "Technological Knowledge (TK)", forming four interactive dimensions: "Pedagogical Content Knowledge (PCK)", "Technological Content Knowledge (TCK)", "Technological Pedagogical Knowledge (TPK)", and "Technological Pedagogical Content Knowledge (TPACK)"[3,4]. It provides a theoretical framework for solving the problem of separation among "technology, content, and pedagogy"[5]. Based on this, this study takes foreign language majors in vocational undergraduate colleges as samples to explore the blended teaching model of *Applied English Translation* under the TPACK framework, aiming to realize the in-depth integration of "translation capability cultivation" with "professional needs" and "technical tools".

2. Adaptability Analysis Between the TPACK Framework and the Applied English Translation Course

The core logic of the TPACK framework is "the integration of knowledge dimensions", which is highly consistent with the teaching objectives, content, and methods of the vocational undergraduate course *Applied English Translation*, specifically reflected in three aspects:

2.1. Content Knowledge (CK): Reconstruction of Translation Content Anchored in Professional Scenarios

The CK of vocational undergraduate *Applied English Translation* needs to break through the traditional scope of "general translation knowledge" and focus on translation needs in professional scenarios[6,7]. Taking characteristic fields such as ceramic art and cross-border e-commerce as examples, CK should include: first, an "industry terminology system", such as the bilingual correspondence and translation norms of professional terms in the ceramic field, such as "glaze formula" and "wood-fired kiln process"; second, "professional text types", such as the stylistic characteristics and translation skills of texts like cross-border e-commerce product manuals, international exhibition invitations, and ceramic cultural and creative copyright agreements; third, "cross-cultural adaptation knowledge", such as text localization strategies for different target markets (Europe, America, Southeast Asia, etc.) (e.g., unit conversion, avoidance of cultural taboos). This career-oriented CK content serves as the core foundation for teaching design under the TPACK framework[8].

2.2. Pedagogical Knowledge (PK): Process Design Adapted to Blended Teaching

Based on the learning characteristics of vocational undergraduate students, who "value practice and emphasize application", the PK of *Applied English Translation* needs to break the traditional "offline classroom-dominated" model and design a blended process of "online independent learning + offline immersive practice"[9,10]: online learning focuses on "fragmented knowledge acquisition + technical tool drills", such as micro-courses explaining "ceramic terminology translation skills" and online platforms for "AI-assisted translation error correction" exercises; offline learning focuses on "scenario-based practical training + collaborative exploration", such as organizing "ceramic cultural and creative text translation workshops" and "cross-border e-commerce contract translation mutual evaluation meetings", allowing students to apply translation knowledge in real professional tasks. This PK design not only leverages the "flexible time and space" advantage of blended teaching, but also strengthens students' awareness of professional practical training[11].

2.3. Technological Knowledge (TK): Tools and Systems Empowering Translation Teaching

The TK of vocational undergraduate translation teaching should focus on "professional translation tools" rather than merely "general teaching technologies"[12,13]. Specifically, it includes three types of technologies: first, "translation assistance tools", such as industry-common software like Trados (translation memory), MemoQ (terminology management), and DeepL (AI-assisted translation), which help students improve translation efficiency and accuracy; second, "teaching support systems", such as a "translation resource database" (including professional text cases, terminology databases, and translation standards) built on Moodle or Chaoxing Learning Platform, supporting online preview, homework submission, and feedback[14]; third, "evaluation technologies", such as intelligent correction systems (e.g., Grammarly, Juke Correction Network) for grammar error correction, combined with teachers' manual evaluation focusing on "professional text adaptability", to achieve "human-machine collaboration" for precise feedback[15].

3. Construction of the Blended Teaching Model of Applied English Translation Under the TPACK Framework

Based on the "three-dimensional integration" logic of the TPACK framework and combined with the professional characteristics of vocational undergraduate education, a blended teaching model of "1 core goal + 3 knowledge dimensions + 4 teaching links" is constructed, as detailed below:

3.1. Core Goal: Cultivating "Technology-Enabled Professional Translation Capability"

Guided by the needs of "language service positions" (such as ceramic cultural and creative translators, cross-border e-commerce translation specialists) that vocational undergraduate students will engage in, the core goal is decomposed into three sub-capabilities: first, "professional text translation capability", enabling accurate translation of industry-specific texts (e.g., ceramic technology manuals, cross-border contracts); second, "technical tool application capability", enabling proficient use of translation memory and AI-assisted tools to complete translation tasks; third, "vocational literacy adaptation capability", enabling adjustment of translation strategies according to target markets and customer needs in line with industry norms.

3.2. Integration Strategies for Three Knowledge Dimensions

3.2.1. TCK (Technology-Content Integration): Constructing "Technology-Adapted Professional Translation Content Modules"

The curriculum content is divided into 3 core modules according to "industry scenarios", with corresponding technical tools and application scenarios embedded in each module:

Ceramic Culture Text Translation Module: The content covers "translation of ceramic historical documents" and "localization of ceramic art work commentaries". Technically, "terminology database construction tools" (e.g., importing Excel terminology lists into Trados) are introduced to allow students to build a "ceramic technology terminology database" for translation reuse of similar texts;

Cross-Border Business Text Translation Module: The content includes "product manual translation" and "cross-border logistics contract drafting". Technically, "AI-assisted translation tools" (e.g., DeepL) are used to guide students to generate first drafts with AI and then conduct "manual proofreading and optimization", mastering the "human-machine collaboration" translation process.

International Exhibition Text Translation Module: The content involves "exhibition invitation translation" and "exhibition manual localization". Technically, it relies on "online collaboration platforms" (e.g., Tencent Docs, Feishu) to simulate "multi-translator collaborative translation" scenarios, cultivating students' teamwork capabilities.

3.2.2. TPK (Technology-Pedagogy Integration): Designing an "Online + Offline" Dual-Track Teaching Process

Leveraging the "time-space complementarity" advantage of blended teaching, the teaching process is divided into 4 links, with each link achieving the adaptation of "technology and pedagogy".

Online Preview (1 week before class): Teachers release "professional text cases + micro-course videos" (e.g., a micro-course on "ceramic glaze terminology translation skills") and push "AI translation tool operation guides" via the learning platform. Students complete "terminology self-tests + tool drill" homework, and the system automatically provides feedback on errors (e.g., terminology mistranslation, non-standard formatting). Teachers identify common class-wide problems based on background data.

Offline In-Depth Lecture (2 class hours): Focus on common problems in online preview (e.g., "passive voice conversion in ceramic technology texts"), explain translation skills combined with professional scenario cases (e.g., a translation example of an export manual from a ceramic enterprise); organize "group collaborative translation", using "translation memory terminals" in offline training rooms to complete translation of "cross-border e-commerce product manual" excerpts. Teachers provide on-site guidance, focusing on the "correct application of technical tools".

Online Consolidation (2 days after class): Students log in to the "translation practical platform", select real tasks in corresponding industries (e.g., "translating work introductions for a Jingdezhen ceramic art studio"), use AI tools to generate first drafts, and upload them to the platform. The system generates a "translation quality report" (including terminology accuracy rate, grammar error rate), and students revise based on the report while exchanging "AI-assisted translation optimization skills" in the platform forum.

Offline Review (1 class hour in the next class): Teachers select typical cases (excellent and problematic ones) from students' online homework, organize "case analysis meetings", and invite students to share "technical tool application experiences" (e.g., "how to use Trados to avoid repeated translation errors"); explain "acceptance standards for professional translation" combined with industry standards (e.g., Translation Service Translation Quality Requirements) to strengthen students' vocational literacy.

3.2.3. TPACK (Three-Dimensional Integration): Developing an "Intelligent Teaching Support System"

A teaching support system integrating "resource database, practice database, and evaluation database" is built to realize the in-depth integration of "technology-content-pedagogy".

Resource Database: Stores "professional text cases" (e.g., ceramics, cross-border e-commerce, exhibitions), "terminology databases" (including Chinese-English bilingual comparisons and application scenarios), and "technical tool tutorials" (e.g., Trados operation videos, AI translation tool user manuals) classified by industry, supporting on-demand retrieval by students.

Practice Database: Adopts "progressive task design", ranging from "basic terminology translation" to "complete professional text translation" and then to "multi-scenario text localization". Each task is labeled with "corresponding vocational post requirements" (e.g., "essential tasks for cross-border e-commerce translation specialists") and embeds technical tool application requirements (e.g., "use AI tools to generate first drafts").

Evaluation Database: Constructs a "human-machine collaboration" evaluation system. AI is responsible for scoring quantitative indicators such as "terminology accuracy rate, grammar error rate, and formatting standardization"; teachers and enterprise mentors (e.g., language service personnel from cooperative ceramic cultural and creative enterprises and cross-border e-commerce companies) are responsible for scoring qualitative indicators such as "professional scenario adaptability and cross-cultural communication effect". A "multi-dimensional evaluation report" is generated, and "personalized improvement suggestions" are pushed (e.g., "need to strengthen ceramic technology terminology accumulation; it is recommended to learn the 'ceramic firing terminology' module in the resource database").

4. Practice and Effect Analysis of the Teaching Model

Taking the 2023-level English major (cross-border e-commerce direction) of a vocational undergraduate college in Jingdezhen as the research object, two classes (45 students in the experimental class and 43 students in the control class) were selected for a 16-week teaching practice: the experimental class adopted the blended teaching model under the TPACK framework, while the control class adopted the traditional "theoretical lecture + after-class practice" model. Through three-dimensional evaluation including "translation capability test, technical tool application assessment, and enterprise satisfaction survey", the practice effects are as follows:

4.1. Translation Capability: Significant Improvement in Translation Quality of Professional Scenario Texts

At the end of the semester, two types of professional texts—"ceramic cultural and creative product manuals" and "cross-border e-commerce contract excerpts"—were selected for testing, with scoring from three dimensions: "terminology accuracy rate, stylistic adaptability, and cross-cultural adaptability". The results show that the average score of the experimental class (82.6 points) was 21% higher than that of the control class (68.3 points). Among them, the terminology accuracy rate (92% in the experimental class vs. 75% in the control class) and stylistic adaptability (85% in the experimental class vs. 67% in the control class) improved particularly significantly, indicating that this model can effectively help students master the translation norms of professional texts.

4.2. Technology Application: Proficiency in Industry Tool Operation Meets Standards

Students' operational capabilities of Trados (translation memory) and DeepL (AI-assisted translation) were assessed, including tasks such as "terminology database import, translation memory retrieval, and AI first draft optimization". 89% of students in the experimental class could independently complete "optimization from AI first draft to final draft" (only 32% in the control class), and 78% could use Trados to complete "automatic translation of repeated texts" (only 25% in the control class), meeting the job requirements of cross-border e-commerce and language service enterprises for "translation technical tool application capabilities".

4.3. Enterprise Feedback: Vocational Literacy Adaptability Gains Recognition

Three cooperative enterprises (2 ceramic cultural and creative companies and 1 cross-border e-commerce platform) were invited to evaluate students' "translation internship performance" from three dimensions: "task completion efficiency, text adaptability, and communication and collaboration". The enterprise satisfaction rate of students in the experimental class (86%) was significantly higher than that of the control class (58%). Enterprises feedback that "students in the experimental class can quickly adapt to the workplace translation process, proficiently use translation tools, and their translation results comply with industry norms".

5. Conclusion

The TPACK framework provides a clear path for the integration of "technology-content-pedagogy" in the blended teaching of the vocational undergraduate course *Applied English Translation*. By reconstructing career-oriented content modules, designing an online-offline dual-track process, and developing an intelligent teaching support system, it effectively solves problems such as "lack of professional scenarios" and "superficial application of technology" in traditional teaching. In the future, efforts can be made to further expand the "depth of industry cooperation", such as jointly developing a "real translation project database" with enterprises to allow students to participate in actual enterprise translation tasks; at the same time, explore the application of "generative AI" in teaching (e.g., using ChatGPT for cross-cultural translation strategy consultation), continuously optimize the teaching model, and provide stronger support for vocational undergraduate education to cultivate "technology-enabled professional language service talents".

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