Pathways and Practices for Ideological and Political Education in Higher Vocational Translation Technology Training Courses Empowered by Large Models

Based on the Five-in-One Framework of "Faithfulness, Expressiveness, Elegance, Security, and Critique"

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Abstract. Generative large language models are transforming the translation industry ecosystem, imposing new requirements on vocational translation professionals. This study, guided by "AI + Ideological and Political Education," develops a five-in-one ideological and political education framework for translation technology practical training courses, integrating "Faithfulness, Expressiveness, Elegance, Security, and Critique". Using pre-survey and post-survey data from "Translation Technology Practical Training" and "AI and Language Applications" courses, this study examines the integration and effectiveness of ideological and political education. Results show the framework enhances students' translation technology skills and ideological and political literacy greatly, advancing their data security awareness, academic integrity, and cultural communication ability. The "technology + literacy" dual-wheel teaching model and "ideological and political education + technology" evaluation system provide a replicable model for reforming ideological and political education in vocational foreign language courses, advancing the "Three Teachings" reform and cultivating skilled talent.

Keywords: Translation technology training, Curriculum ideological and political education, Five-in-one framework, Vocational education reform

1 Introduction

The integration of globalization and digitalization is transforming the translation industry, with AI tools like ChatGPT and DeepL becoming core auxiliaries in translation. Labor market data indicate that 85% of translation companies require computer-assisted translation skills, while professional ethics, data security, and cultural communication have gained importance. However, current vocational translation technology courses face key issues: an overemphasis on technology over professional literacy, with focus on tool operation while neglecting professional ethics; and super-

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ficial integration of ideological-political education, lacking scenarios that effectively combine with translation technology teaching.

1.1 Research Background

In 2020, the Ministry of Education's Guidelines for Ideological and Political Curriculum Development in Higher Education Institutions required integrating value shaping, knowledge teaching, and ability cultivation [1]. Vocational undergraduate education emphasizes "job adaptability" and "professional literacy." Additionally, "specialized experimental courses should integrate study and reflection, unify knowledge and action, enhance innovation and exploration, and improve problem-solving ability" [1]. This context necessitates exploring an "AI + Ideological and Political Education" system and building a curriculum framework aligned with translation industry needs.

1.2 Literature Review

In recent years, the emerging LLM tools have become a new focus in translation studies. Many foreign scholars have studied the ethical issues in translation [2] and professional translator's training [3], others have also researched this topic in literary translation [4]. According to CNKI search, since 2018, research on integrating ideological and political education into foreign language courses has grown rapidly [5]. Studies focus on three areas: translation technology teaching and talent cultivation [6], with limited attention to ideological elements; curriculum-based ideological and political education, centered on cultural guidance in language courses [7][8], lacking exploration in translation technology contexts; and AI integration in foreign language teaching [9][10], without sufficient focus on AI ethical risks and ideological countermeasures. Current research lacks a complete "technical practice–ideological cultivation–career adaptation" system and empirical validation of ideological education effectiveness in courses. This study uses the "Faithfulness, Expressiveness, Elegance, Security, and Critique" framework with pre-survey and post-survey analysis to address this gap in vocational translation technology training courses, aiming to provide theoretical and practical reference for course reform.

2 Construction of the Five-in-One Ideological and Political Curriculum Framework of "Faith, Accuracy, Elegance, Safety, and Critique"

2.1 The Definition of the Framework

The integrated five-dimension framework of "Faithfulness, Expressiveness, Elegance, Security, and Critique" integrates ideological and political education into translation technology training. Based on translation ethics, this framework combines translation skill training and ideological cultivation to develop translators with professional competence and ethical literacy. The Faithfulness dimension focuses on professional

dedication and precision through terminology base construction and quality control; the Expressiveness dimension fosters cross-cultural communication literacy through bilingual text translation and cultural scenarios to enable accurate intercultural dialogue; the Elegance dimension cultivates cultural preservation awareness through translation of Chinese culture-specific vocabulary and classics, enhancing cultural adaptability; the Security dimension addresses professional ethics by developing data privacy awareness through training in translation tool encryption and sensitive information handling; the Critique dimension promotes rational use of AI translation tools, strengthens decision-making through AI translation discrimination and optimization, and nurtures critical thinking. This framework integrates translation technical training with ideological education, providing systematic guidance for translation technology training.

This study draws on the core principles of the translation theory of "faithfulness, expressiveness, and elegance", while integrating the new requirements of the translation industry in the era of digital intelligence for data security and critical thinking, to construct a five-in-one curriculum ideological and political framework (see Figure 1)

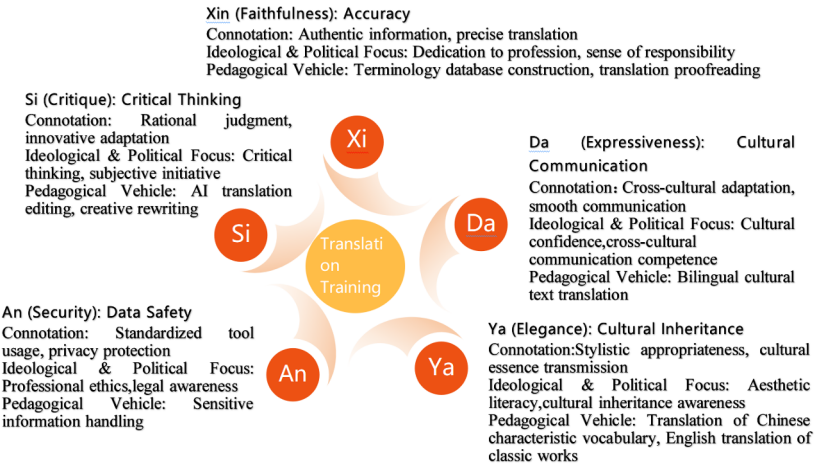

Fig. 1. Core Connotations of the Five-in-One Framework: "Faithfulness, Accuracy, Elegance, Safety and Critique"

2.2 Teaching Implementation Model

This study's teaching implementation integrates the "technology + literacy" dual-driven concept and the "three dimensions, four drives, and five integrations" ideological and political education model to build a comprehensive translation technology practical teaching system.

At STIEI, in "Translation Technology Practice" and "AI and Language Applications" courses, we implement the dual-drive concept of "Technology + Literacy," integrating the "Three Dimensions, Four Drives, Five Integrations" ideological educa-

tion model to establish a practical translation technology teaching framework. Using real-life cases from translation, localization, and cross-cultural communication, we conduct hands-on teaching experiment. The spatial dimension connects "Classroom – Training Room – On-site Enterprise," partnering with local translation companies on projects like cross-border e-commerce and technical document translation, exposing students to workplace workflows. The temporal dimension covers "Pre-class – In-class – Post-class": before class, micro-lessons address data security and academic integrity; during class, students practice AI tools with industry cases; after class, we assigned cultural translation tasks like translating Chinese poems. The relational dimension forms a "teacher-student- school-enterprise -peer" network, in which dual-mentor teams of academic and enterprise mentors support group project discussions. Four drives enhance educational motivation: value-driven through craftsmanship spirit lectures, practice-driven via AI-assisted translation competitions, peer-driven through translation sharing, and emotion-driven through career guidance. The five integration paths combine ideological education with professional instruction, online and offline learning, school-enterprise resources, management services, and thought guidance, helping students master AI translation tools while developing professional ethics and cultural literacy.

In course instruction, practical cases are designed around principles of "Faithfulness, Expressiveness, Elegance, Security, and Critique," integrating these dimensions into "Translation Technology Practice" and "AI and Language Applications" courses. In technical document translation training, for units of measurement like length and weight, students must refer to industry standards for accurate conversions and verification, eliminating unit confusion—thus embodying "Faithfulness" through rigorous translation practices. In diplomatic text translation, when discussing "Bin Han" from China–Cambodia relations during the Tang Dynasty, students are guided to choose culturally resonant translations by considering historical context and diplomatic conventions, achieving cross-cultural communication and demonstrating "Expressiveness." In translating traditional Chinese poetry, students refine AI-generated versions by optimizing wording while balancing rhythm and imagery, ensuring translations possess cultural depth and beauty—reflecting the pursuit of "Elegance." In commercial product localization, students must follow industry standards in handling personal privacy data through encryption and anonymization, safeguarding data security and practicing professional ethics of "Security." In AI-assisted literary translation review, students compare AI-generated texts with classic human translations, analyzing AI translation limitations and strengths, optimizing translations through independent thinking—demonstrating "Critique" capacity and human translators' value.

2.3 Three-Dimensional Evaluation System

This study seeks to develop a "three-dimensional" evaluation system that equitably balances technical practice with ideological-political literacy. Firstly, regarding evaluation dimensions, it judiciously allocates the proportion of evaluations from various sources, including teacher-student evaluation (40%), peer evaluation (30%), and self-evaluation (30%). Secondly, at the multidimensional evaluation level, it assigns

50% to the technical practice dimension, which encompasses indicators such as tool operation proficiency and translation quality, and 50% to the literacy enhancement dimension, which includes indicators such as professional ethics, cultural communication, and critical thinking skills. This structure aims to rationally organize the evaluation system for teaching reform.

3 Analysis of the Survey Data

This project studied third-year Applied English majors (62 students) at STIEI. In order to keep the validation of the survey, questionnaire surveys were conducted before (pre-survey) and after the course (post-survey) through Wenjuanxing Mini Programme, examining students' AI tool usage, skill level, and ideological awareness.

3.1 Basics of AI Tool Usage and Behavioral Changes

3.1.1 Contact and Usage Frequency.

According to the pre-survey results, 12% of the students had never been exposed to courses related to AI language tools, and only 28% had systematically studied a complete course. In terms of usage frequency, 48% of the students used them occasionally (1 – 3 times per month), 36% reported using them often (1 – 3 times per week), and only 8% said they used them frequently.

Post-survey results show 100% of students use AI tools regularly, with 61.54% using them several times weekly and 30.8% monthly. Tool applications have expanded from translation to essay polishing, grammar checking, and summarizing foreign materials, and 84.6% of students select appropriate tools for their learning needs. Results indicate the course enhanced students' exposure to AI tools and proper usage norms, shifting from "passive emergency response" to "proactive adaptation," aligning with the principle of "learning by doing and doing while learning."

3.1.2 Operational Skill Level.

According to the pre-survey results, 60% of students can only perform basic operations (simple sentence translation), 36% are relatively familiar (selecting professional fields or modifying translation results), and 4% reported they cannot use it at all. The core pain points for students using AI tools to assist translation are concentrated on incorrect translation of technical terms (56%) and difficulty in judging the accuracy of results (68%). In the open-ended question, students claimed low accuracy is the most troubling issue in AI-assisted translation, indicating more accurate prompts, more critical thinking are needed.

According to the post-survey results, 76.9% of students can proficiently perform tool functions and optimize results, 23.1% indicated that they possess advanced application abilities; only 30.8% of students are still troubled by the translation of technical terms, and they can resolve these issues through methods such as tool verification and manual correction.

The survey results show that the teaching model of "basic operations + scenario application + problem solving" has effectively improved students' technical hands-on abilities, confirming the feasibility of the "technology + literacy" course implementation concept.

3.2 Enhancement of Ideological-Political Awareness and Professional Competence

3.2.1 Professional Ethics of "Faithfulness, Accuracy, and Elegance".

According to the pre-survey results, 8% of students said they would directly copy and use the translation results, 36% said they occasionally check the results, and 52% would repeatedly verify them by comparing them with the original text and reference materials; When AI-generated translations are found incoherent, 60% of students turn to other tools and only 24% revise the content themselves, revealing students' reliance on the outputs of AI translation tools to some extent.

According to the post-survey results, 61.54% of students would perform dual optimization of AI outputs by checking "Xin" (accuracy verification) and 76.92% for "Da" (context adaptation) respectively. 76.9% indicated that AI translation lacks "elegance", and 92.31% would prioritize official authoritative translations for culturally distinctive vocabulary, focusing on accurate cultural communication; students' attention to the "Ya" (literary elegance and cultural appropriateness) of AI translations increased dramatically.

After research and analysis, the integration of ideological and political elements such as "cultural inheritance" and "cross-cultural communication" into this course has effectively enhanced students' professional competence, aligning with the "faithfulness, expressiveness, and elegance" requirements of the course's ideological and political framework.

3.2.2 Security and Ethical Awareness.

According to the pre-survey results, in terms of data security, 68% of students are somewhat concerned about information leakage but still continue to use it, and 24% said they rarely use it due to such concerns; in terms of academic integrity, 52% of students said they disclose their use of AI tools only when required by the teacher, while 16% said they never do so. Lots of students are concerned about a decline in thinking ability caused by the misuse of AI tools.

In the post-survey, 76.9% indicated they can proactively avoid entering sensitive information in terms of data security, and 53.85% stated they clearly understand the boundaries of data privacy protection. Regarding academic integrity, 38.46% of students were able to independently distinguish between AI assistance and academic plagiarism. As for independent thinking ability, 92.31% believed that proper use of AI tools would not weaken their thinking ability, and 8% believed using AI scientifically would rather enhance learning efficiency and depth.

Through research and analysis, this course, via ethics-themed lectures and case studies, has significantly enhanced students' awareness of data security, academic

integrity, and scientific critical thinking, thereby achieving the ideological and political education goal of integrating "security" and "critique."

3.2.3 Professional Collaboration Literacy.

According to the pre-survey results, only 36% of students believe that "AI result evaluation capability" and "data protection awareness" are core competencies for the future workplace.

According to the results of the post-survey, as many as 61.54% of students listed "accurately assessing the quality of AI output," "protecting client data confidentiality," and "human-machine collaborative creativity" as core workplace competencies, while 30.77% supported humans' capability of decision-making and creativity, which are highly aligned with the professional responsibility and digital ethics emphasized in the course's ideological and political education.

Through research and analysis, this course effectively aligns workplace demands with educational goals, helping students develop a professional awareness of "technology assistance + human decision-making," and reflecting the career-oriented nature of vocational education.

3.3 Changes in Comprehensive Learning Effect

To evaluate the actual effectiveness of the teaching experiment, paired-sample T-test analysis was conducted on the pre-test and post-test scores of 62 students. The results showed that the overall effectiveness of the teaching experiment was significant: the mean post-test score (81.21) was 7.11 points higher on average than the mean pre-test score (74.10). In terms of stability and improvement, the standard deviation of the score increase was 9.20, indicating certain individual differences in improvement among students. Meanwhile, the standard deviation of post-test scores (SD=-9.35) was significantly smaller than that of the pre-test (SD=15.28), suggesting that after the teaching intervention, the distribution of student scores became more concentrated and the gap in scores was effectively reduced. The paired-sample T-test results further confirmed the statistical significance of the teaching effect: the T statistic was -6.1351 (degrees of freedom = 62), with a p-value $\approx$ 0.0000, far below the 0.05 significance level. Therefore, it can be concluded that there was a significant statistical difference between the pre-test and post-test scores, with post-test scores being overall significantly higher than pre-test scores.

4 Issues and Optimization Path

4.1 Main Existing Problems

Besides the score improvement, there are still some issues with this course reform. For teaching resources, the database for enterprise translation cases is not complete. It especially lacks examples of ideological and political education in new areas like cross-border e-commerce and technical document translation. Second, schools and

companies need to work more together on AI tool training platforms. About 38.5% of students say they can't use some advanced platform features for training because of copyright issues. For evaluation systems, it's hard to measure the long-term effects of ideological and political education with current quantitative indicators. The role of corporate mentors in evaluations is small, and industry views are not given enough importance. As for teaching implementation, 15.4% of students still focus more on technology than ethics, revealing remaining gaps in helping students internalize ideological and political elements. Besides, the integration of digital technology with ideological and political education is not enough. For example, there are few innovative uses like VR technology and AI ethics debates.

4.2 Optimization Path

4.2.1 Deepening School-Enterprise Collaboration.

First of all, school-enterprise collaboration should be deepened, and the teaching resource system should be improved by jointly building a "Translation Technology Ideological-Political Case Database" with enterprises like translation companies and cross-border e-commerce enterprises. For example, adding a series of real cases in emerging fields, and seeking higher-level functional permissions through enterprises or co-building of training platforms, to enhance the authenticity of school technical practice. Second, vocational college should strengthen school-enterprise cooperation and utilize resource sharing. In the post-survey, some students suggested adding some professional lectures given by enterprise mentors or Q&A sessions, enhancing the close communication with the enterprises.

4.2.2 Improve Evaluation Mechanism.

We still need to improve the evaluation mechanism and strengthen the effectiveness of education. For example, to refine the evaluation indicators for the strategy of internalizing values, and adopt the approach of "Behavior Observation Scale + Ideological and Political Growth Portfolio" to achieve process-oriented evaluation of value internalization. Besides, vocational college should try to establish a "Counselor + Professional Teacher + Corporate Mentor" triad evaluation team, increasing the corporate evaluation weight to 30% to ensure alignment between evaluation and workplace demands.

4.2.3 Innovative Teaching Model.

In teaching practice, experiential activities such as "AI ethics debates" and cultural communication practice projects should be carried out to strengthen the internalization of ideological and political elements. Besides, various translation practice projects involving AI ethics testing in different industries should be introduced to guide students in developing dialectical thinking. Moreover, teacher training in digital literacy should be enhanced to improve the integration of digital technology applications with ideological and political education design.

5 Conclusion and Prospect

By developing a framework that integrates translation technology scenarios, and employing pre-survey and post-survey, this study quantitatively evaluates the effectiveness of implementing ideological-political education, thereby enhancing the study's rigorousness and persuasiveness. To draw a conclusion, the five-in-one ideological-political education framework of "Faithfulness, Expressiveness, Elegance, Safety, and Critique" achieves deep integration of translation technology practice and ideological-political education. After experiment this framework is proved to greatly enhances students' practical translation technology skills and significantly improves their core ideological-political competencies in professional ethics, data security, and cultural communication a lot, providing a replicable model for ideological-political education reform in translation technology courses.

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