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# THE INTEGRATION OF "INDUSTRY-EDUCATION-RESEARCH-INNOVATION" IN THE TRAINING PATHWAYS FOR TRANSLATION TALENT IN AGRICULTURAL UNIVERSITIES IN THE AI ERA: A CASE STUDY OF THE MASTER'S PROGRAM IN TRANSLATION AT SOUTH CHINA AGRICULTURAL UNIVERSITY

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**Abstract:** Against the backdrop of rapid advancements in artificial intelligence (AI) technology, the translation industry is undergoing profound changes, presenting new challenges and opportunities for traditional talent cultivation models. As a vital force in supporting the internationalization of agriculture, agricultural universities must align their translation talent training with industry demands and technological developments, exploring innovative pathways. This study takes the Master's program in Translation at South China Agricultural University as a case study, analyzing the current state and issues of the existing training model based on the concept of "Industry-Education-Research-Innovation." It proposes optimization pathways. The research finds that through the organic integration of school-enterprise cooperation, curriculum system optimization, research-driven initiatives, and innovation and entrepreneurship education, the professional competitiveness and innovative capabilities of translation talent in agricultural universities can be effectively enhanced. This study provides theoretical support and practical references for translation education in agricultural universities.
**Keywords:** AI era; Agricultural universities; Translation talent; "Industry-Education-Research-Innovation" integration; Training pathways

## 1 INTRODUCTION

In recent years, the rapid development of Artificial Intelligence (AI) technology has profoundly altered the ecology of the translation industry. The widespread application of Neural Machine Translation (NMT) technology has gradually shifted the working model of the translation industry from traditional human translation to human-machine collaboration. For instance, the translation quality of machine translation tools such as Google Translate and DeepL has continuously improved, meeting the translation needs in certain fields. Simultaneously, the proliferation of Computer-Assisted Translation (CAT) tools like Trados and MemoQ has significantly enhanced the work efficiency of translation professionals. However, the popularization of these technologies has also imposed new requirements on the skill set of translation talent.

Driven by AI technology, the demand for professionals in the translation industry is no longer limited to language conversion abilities but places greater emphasis on technological skills, critical thinking capabilities, and interdisciplinary knowledge backgrounds. Translators need to be proficient in CAT tools, capable of post-editing machine translation outputs, and possess the ability to evaluate translation quality [1][2]. Furthermore, the rapid iteration of AI technology necessitates that translation professionals have lifelong learning abilities to adapt to the industry's continuous changes. This shift in industry demand presents new challenges for translation education, as traditional translation education models struggle to meet the requirements of the AI era and require deep reform [3].

As an essential component of China's higher education system, agricultural universities bear the important mission of serving the "Three Rural Issues" (agriculture, rural areas, and farmers). With the deepening of China's rural revitalization strategy and the acceleration of agricultural internationalization, agricultural universities play an irreplaceable role in cultivating high-level translation talent that serves the agricultural sector. The training of translation talent in agricultural universities needs to align with agricultural characteristics and meet the demands of international agricultural development. For example, the international promotion of agricultural technology, the implementation of international agricultural cooperation projects, and international academic exchanges in agriculture all require specialized and field-specific translation talent. However, translation education in agricultural universities faces numerous challenges in practice. On one hand, the diverse backgrounds of students include those from literature, history, and philosophy, as well as those from agricultural disciplines, which raises higher demands for curriculum design and teaching content. On the other hand, translation education in agricultural universities must balance the cultivation of language skills with knowledge in the agricultural field, and this interdisciplinary talent development model is still in the exploratory stage. Additionally, with the proliferation of AI technology, translation education in agricultural universities must also integrate translation technology into the curriculum to enhance students' technical

application abilities.

With the support of the Ministry of Education's policies, the integration of industry and education, along with collaborative talent cultivation, has become an important direction for higher education reform. The "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" proposes to "promote a close integration of education with economic and social development, and promote the integration of industry and education." This policy provides crucial guidance for the reform of talent cultivation models in higher education. The concept of "integration of industry, education, research, and innovation" has further developed on the basis of industry-education integration, emphasizing the collaborative development of education, industry, research, and innovation. Specifically, this concept advocates for constructing a diversified talent cultivation model through school-enterprise cooperation, the integration of research and teaching, and innovation-driven approaches. This concept is particularly applicable to the field of translation education, as translation education itself possesses strong practical and applied characteristics. Through the integration of industry, education, research, and innovation, students' practical abilities, technical application skills, and innovative capabilities can be effectively enhanced, cultivating high-level talent that meets the demands of the AI era in the translation industry.

The proposal of the integration of industry, education, research, and innovation provides a new perspective for the development of translation education theory. Traditional translation education theories primarily focus on the cultivation of language abilities while neglecting the importance of technological and innovative skills. In the AI era, translation education needs to shift from a singular focus on language ability to a comprehensive cultivation of language, technological, and innovative abilities. This study explores the application of the integration of industry, education, research, and innovation in translation education, offering new ideas for the development of translation education theory. Furthermore, translation education in agricultural universities has distinct field characteristics, and its research outcomes can enrich translation education theory and provide references for translation education in other fields. For instance, issues such as how to integrate domain knowledge with translation teaching and how to incorporate technology teaching into translation education possess significant theoretical value.

From a practical perspective, this study aims to construct a translation talent cultivation model that meets the demands of the AI era, providing practical references for the reform of translation education in agricultural universities. By exploring the integration of industry, education, research, and innovation in the cultivation pathway, it can effectively address existing issues in translation education in agricultural universities, such as outdated curriculum systems, weak practical teaching, and insufficient innovation capability development. Specifically, the research findings of this paper can offer the following practical guidance for translation education in agricultural universities:

(1) How to optimize the curriculum system by integrating AI technology and agricultural field-specific content into translation teaching;

(2)How to enhance students' practical abilities through school-enterprise cooperation and project-based teaching;

(3) How to cultivate students' innovative capabilities through the integration of research and teaching.

## 2 CURRENT STATUS AND CHALLENGES OF TRAINING TRANSLATION TALENTS IN AGRICULTURAL FIELDS

### 2.1 Changes in the Demand for Translation Talent in the Industry

With the rapid development of artificial intelligence (AI) technology, significant changes have occurred in the production models and operational processes of the translation industry. New technologies, represented by neural machine translation (NMT), are fundamentally reshaping translation work, significantly enhancing both efficiency and quality. At the same time, the widespread use of computer-assisted translation (CAT) tools, such as Trados and MemoQ, is driving a shift from purely manual operations to a new model of “human-machine collaboration” [4] . These changes present new demands for talent in the translation industry, requiring not only solid language skills but also technical abilities and specialized domain knowledge. In this context, the core competencies of composite translation talents include the following three aspects:

(1) Language Ability: Excellent language skills remain the foundation of translation work, particularly reflected in the quality control and optimization of machine translation post-editing (MTPE).

(2) Technical Ability: The importance of technical skills in translation is increasingly significant. For instance, translators need to be proficient in using CAT tools, creating and maintaining terminology databases, and assessing the quality of machine translation outputs.

(3) Industry Knowledge: The trend towards specialization in translation necessitates domain knowledge, such as understanding specialized terminology and its usage in specific contexts in fields like law, medicine, and agriculture.

Agricultural translation, as an important branch of domain translation, requires general translation skills while also emphasizing specialized knowledge and practical abilities in agriculture. Currently, the pace of agricultural internationalization in China is accelerating, and the "Belt and Road" initiative has brought more opportunities for international agricultural cooperation, simultaneously generating a substantial demand for language services. For example, there is a need for translations of agricultural technical manuals, collaborative agricultural research reports between China and foreign countries, and on-the-spot interpretation at international agricultural conferences. Agricultural translation requires translators to accurately grasp the precise conversion of specialized terminology, as agricultural terms involve academic, applied, and practical aspects, often comprising statistical language while also

needing to incorporate localized agricultural knowledge [5]. Additionally, translators must be familiar with policy and application contexts to accurately convey details of cooperative policies, thereby reducing misunderstandings across multiple languages.

### 2.2 Current Status of Translation Talent Training in Agricultural Universities

Currently, translation education programs in agricultural universities still focus on language fundamentals and traditional translation techniques, neglecting domain-specific characteristics and technical skills. Most curricula consist of language proficiency enhancement, translation theory, and practice in both written and oral translation but lack systematic design that integrates agricultural characteristics into translation teaching, such as courses on agricultural terminology translation or case studies related to international agricultural cooperation. Although some universities have begun to introduce translation technology courses, these currently only cover basic tool operations, with deeper applications such as "corpus construction" and "terminology management" not yet widespread.

Practical teaching is particularly important for cultivating students' actual work abilities, yet agricultural universities show significant shortcomings in this area.

Firstly, the course content is overly simplistic: Most universities' practical courses remain limited to classroom simulation translation exercises and a few public translation classes, lacking opportunities for participation in real translation projects. Furthermore, the depth of collaboration is insufficient: The pace of cooperation between agricultural universities and enterprises in conducting translation practice is slow, with cases provided by enterprises mainly focusing on general fields, while support for agricultural-specific projects remains limited. Additionally, the evaluation mechanism is inadequate: Current teaching assessments mainly focus on "translation result quality," overlooking students' improvements in project management, technical application, and innovative capabilities, which hinders the comprehensive development of students' overall qualities.

The proliferation of AI technology has made technical skills a core component of translation education. However, agricultural universities are still lagging in this area, as evidenced by: (1) Low coverage of technical application courses, leading to insufficient practical skills among students in using CAT tools and developing corpora. (2) A lack of practical teaching in machine translation post-editing (MTPE). In the context of the rapid proliferation of AI translation results, many students view machine translation as a panacea but lack critical evaluation skills regarding its outputs. (3) The technical abilities of the teaching staff need enhancement. Some educators, due to a lack of technical background, focus primarily on superficial tool usage in technical courses, neglecting the integration of translation project practice to improve students' comprehensive abilities [6].

### 2.3 Main Challenges

The challenges faced in cultivating translation talent in agricultural fields include the following aspects:

First, the disconnect between theory and practice. Course content primarily focuses on language training and fails to adequately reflect the interdisciplinary, comprehensive, and technical skill requirements of the new industry demands, resulting in students lacking competitive employability in the agricultural domain. Compared to the international agricultural context, textbooks and case studies are often limited to general fields, lacking a comprehensive expression of agricultural project translation work.

Second, insufficient technical capabilities. The focus on technical skills in translation education has long lagged behind the actual development pace of the industry. On one hand, translation institutions allocate limited resources to technical courses, with instruction on CAT tools, terminology management systems, and other topics remaining at a basic level, and the emphasis on machine translation post-editing is noticeably lacking. On the other hand, training in core AI capabilities, such as training customized machine translation models or developing terminology databases, is notably absent.

Third, the lack of distinct industry characteristics. Although agricultural universities have clear objectives for translation education, there is a disconnect between the design of agricultural translation characteristics and students' needs. Agricultural knowledge is weak in course design, and the diversity and complexity of practical courses are insufficient to accurately address the translation needs of localized agricultural promotion and international cooperation.

In summary, AI technology has imposed composite capability requirements on the translation industry, while agricultural universities have yet to fully meet the market demands in terms of curriculum design, practical teaching, and technical training. The issues of disconnect between course content and practice, weakened technical capabilities, and insufficient agricultural translation characteristics indicate that the translation education system urgently needs reform to better serve the agricultural internationalization strategy and the new requirements of the translation industry.

## 3 CONSTRUCTION AND PRACTICE OF THE "INTEGRATION OF INDUSTRY, EDUCATION, RESEARCH, AND INNOVATION" TRAINING PATHWAY

The concept of "Integration of Industry, Education, Research, and Innovation" aims to organically combine industrial demand (Industry), higher education (Education), academic research (Research), and innovative practice (Innovation) to promote collaboration among multiple parties, facilitating a deep alignment between talent cultivation and real-world needs, thereby establishing a training model that adapts to the development of the times. Specifically, by advancing

comprehensive cooperation between universities and the translation industry, relevant research institutions, and innovation and entrepreneurship resources, we achieve multi-stakeholder participation in the translation education process, enhancing students' abilities to solve complex practical problems in the industry and cultivating high-level professional translation talents with strong comprehensive qualities. According to Nord's functional translation theory [7], the translation process should serve the function of the target text. This theory provides a clear direction for the cultivation of translation talents, emphasizing the organic integration of teaching and practice, and training students to design translation strategies based on different translation scenarios and text functions. For example, in the field of agricultural technology, the purpose of translation is significant, requiring students to possess practical abilities that extend beyond language alone. Constructivist learning theory emphasizes a student-centered approach, constructing knowledge in authentic contexts [8]. In translation education, introducing real projects and case-based teaching helps students think, analyze, and solve problems in practical situations, actively constructing a knowledge network and comprehensively enhancing their translation abilities. The "National Medium- and Long-Term Education Reform and Development Plan Outline (2010-2020)" proposes to "promote a close integration of education with economic and social development, and promote the integration of industry and education." The "Several Opinions on Deepening the Integration of Industry and Education" (2017) also explicitly states that deepening the integration of industry and education is an important measure to promote the coordinated development of education and industry. In translation education, through school-enterprise cooperation and multi-stakeholder participation, a synergistic development of theoretical teaching and practical capabilities can be achieved, thus meeting the demands of society and the industry for translation talents. To implement the concept of "Integration of Industry, Education, Research, and Innovation," this degree program has conducted multi-level and multi-field practical explorations in the training of master's students in translation, forming a distinctive talent cultivation model.

### 3.1 Deepening School-Enterprise Cooperation to Promote the Integration of Industry and Education

This degree program has established a school-enterprise cooperation mechanism by signing collaboration agreements with multiple translation companies, agricultural enterprises, and international cooperation institutions, co-constructing translation practice bases to comprehensively enhance students' practical abilities and professional qualities.

(1) Undertaking real translation projects to enhance professional capabilities.

Under the guidance of full-time faculty, graduate students actively participate in translation projects from external enterprises and institutions, providing high-quality translation services for agricultural enterprises, research institutions, and researchers. For example, they have completed tasks such as translating agricultural technical manuals and localizing agricultural promotion documents, as well as undertaking interpretation and translation work for international agricultural cooperation conferences, such as the "China-Latin America Soybean Industry Technology Innovation Alliance," the "2023 Training Course on Environmentally Friendly Fertilizer Production and Application for Developing Countries," and the "International Seminar on Food Safety in the Meat and Poultry Supply Chain." These practices have enabled students not only to become familiar with the industry application of translation technologies but also to master actual project management skills, significantly enhancing their professional competence.

(2) Serving local economic development and supporting social practice.

Several graduate students have participated in the "Three Going to the Countryside" social practice activities, contributing translation support for local economic development in Guangdong Province's "Hundred-Thousand-Ten Thousand Project." Meanwhile, faculty and student teams have long-term responsibilities for translating agricultural project tasks, such as the translation of agricultural research reports and interpretation for agricultural culture conferences, covering fields like the "Precision Agriculture International Conference," the "Bay Area Future Agricultural Technology Innovation Conference," the "Ziqiao Terrace Dialogue with the World" Agricultural Culture Exchange Conference, and the World Cultural Heritage Protection and Application Conference. Through these activities, our faculty and students have not only enhanced the international influence of the translation master's program but also made positive contributions to the sustainable development of global agriculture and the inheritance of Chinese agricultural culture.

(3) Collaborating to establish joint training bases.

Additionally, to bring industry resources into the classroom, this degree program actively promotes deep involvement of industry enterprises in graduate training, constructing a school-enterprise collaborative education mechanism. Currently, the center has signed cooperation agreements with four translation companies and one public institution to co-establish translation internship bases, supporting students in conducting translation internships within enterprises and strengthening their practical abilities. The center also regularly invites industry elites to conduct lectures, exchange activities, and technical training for graduate students. For instance, it has organized workshops on information technology and translation, inviting industry experts to lead a two-day workshop for faculty and students, focusing on teaching corpus and artificial intelligence translation technologies, helping faculty and students grasp the latest industry trends and technological applications. Through the deep involvement of industry experts, students can understand the cutting-edge development trends in the translation industry, further enhancing their practical abilities and professional qualities.

### 3.2 Optimizing the Curriculum System to Enhance Practical Skills

Curriculum reform is a crucial aspect of cultivating applied translation talents. This degree program closely aligns with the training objectives for professional degree talents, establishing a curriculum system that is practice-oriented, focusing on enhancing students' translation skills and their ability to solve real-world problems. The optimization of the curriculum system is primarily reflected in the following aspects:

(1) Constructing a Scientific and Rational Curriculum Structure

The curriculum system consists of required and elective courses, encompassing both core content of translation theory and practice, while also integrating the agricultural characteristics of the school by offering targeted specialty courses. Core courses include "Introduction to Translation", "Translation Theory and Techniques", and "Interpretation Theory and Techniques", systematically cultivating students' foundational translation skills and theoretical literacy. Specialty courses leverage the school's strengths in agricultural disciplines, offering classes such as "Translation and Appreciation of Agricultural Culture", "Reading and Translating Agricultural Economic Literature", and "Agricultural Engineering Technology and Translation". These courses not only help students master specialized terminology and background knowledge in the agricultural field but also enhance their language service capabilities in agricultural promotion and international cooperation.

(2) Emphasizing the Integration of Agricultural Characteristics and Translation Practice

To highlight the school's agricultural characteristics, the curriculum design particularly emphasizes the comprehensive training of agricultural background knowledge and translation skills. For instance, "Translation and Appreciation of Agricultural Culture" cultivates students' language expression abilities in cultural communication through the translation and analysis of classic texts related to Chinese agricultural culture; "Reading and Translating Agricultural Economic Literature" focuses on the practical translation of literature in the agricultural economics field, helping students become familiar with agricultural economic terminology and translation strategies; "Agricultural Engineering Technology and Translation" enhances students' language service capabilities in agricultural technology promotion through translation training of agricultural technical manuals and engineering literature. These courses are taught by instructors with professional research backgrounds and rich translation practice experience, employing case-based teaching and project-driven methods to introduce real translation tasks from the agricultural field into the classroom, thereby helping students improve their translation skills in authentic contexts.

(3) Introducing Modern Translation Technology Courses to Enhance Technical Application Skills

With the increasing demand for technical skills in the translation industry, this degree program has established an AI translation technology course titled "Modern Translation Technology," addressing the shortcomings in technical skill training in traditional education. The course covers the use of machine translation, computer-assisted translation (CAT) tools, and corpus construction and management, helping students master the basic operations and application methods of translation technology. Through practical training, students can proficiently use mainstream translation tools (such as Trados, MemoQ, etc.) and understand the limitations of machine translation and post-editing techniques, thereby enhancing their competitiveness in technology-driven translation projects.

(4) Building a Translation Practice Case Database

To improve translation practice skills and cultivate high-level professional talents, this degree program continuously promotes the construction of a translation practice case database, supporting translation teaching and research with abundant practical resources. Currently, two distinct teaching case databases have been established: the "Agricultural Translation Teaching Case Database" and the "Teaching Case Database for 'Chinese-English Language Comparison and Translation' Based on Artificial Intelligence Technology Development". The construction of the translation practice case database not only enriches translation teaching resources but also achieves a close integration of theory and practice. Through the discussion and practical application of specific cases, students acquire the ability to solve real translation problems through imitation and summarization, while also gaining in-depth knowledge in their professional field, fully reflecting the application-oriented and practical characteristics of this degree program's teaching.

(5) A Diversified Course Evaluation System to Strengthen Practical Skills

To ensure the practical effectiveness of curriculum reform, this degree program has introduced a diversified assessment approach in course evaluation, focusing on the examination of students' practical abilities. Both core and specialty courses include translation projects as assessment components, requiring students to complete real translation tasks, thereby cultivating their project management and problem-solving skills. In the "Modern Translation Technology" course, students are required to complete practical tasks such as corpus construction and translation tool operation, ensuring that their technical skills meet industry standards.

By optimizing the curriculum system, our university's translation master's degree program has achieved an organic integration of theory and practice, particularly under the promotion of agricultural specialty courses and modern translation technology courses, cultivating students' comprehensive abilities in agricultural promotion, international cooperation, and technology-driven translation projects. This curriculum reform not only meets the demand for cultivating applied translation talents but also lays a solid foundation for students' future career development.

### 3.3 Promoting Innovation through Scientific Research to Enhance Comprehensive Abilities

Research-driven initiatives are vital for cultivating high-level, application-oriented translation talents and are a key pathway to improving students' innovative capabilities. Our university adopts a "research feeding back into teaching" model, closely integrating faculty research projects with students' practical training, thereby bridging teaching and

research. This approach fully leverages the role of research in fostering students' innovative thinking, practical skills, and academic literacy, specifically manifested in the following aspects:

(1) Integration of research projects into teaching to stimulate innovative thinking

Faculty members combine their individual research projects with course instruction and student practice, providing students with authentic opportunities for research and translation practice, thereby igniting their innovative potential in solving real-world problems. For instance, students participated in the national social science fund project led by faculty, receiving comprehensive training in experimental design, data analysis, and translation practice. This not only enhanced students' research capabilities and translation skills but also cultivated their innovative thinking in identifying problems, formulating hypotheses, and validating solutions throughout the experimental process. Additionally, students engaged in research projects such as "Building an Agricultural Academic English Corpus," gaining extensive experience in data processing, terminology extraction, and translation practice, while familiarizing themselves with specialized terminology and translation strategies in the agricultural field. Through these research projects, students are able to closely connect theoretical knowledge with practical application, continually exploring new methods and ideas in addressing complex translation challenges, significantly enhancing their innovative capabilities.

(2) Bilingual corpus construction to cultivate technological innovation abilities

Driven by research topics, students collaborated with faculty to establish a bilingual corpus, completing extensive processing of Chinese and English agricultural technical texts. In this process, students learned techniques such as data cleaning, terminology extraction, and text annotation, mastering the use of corpus tools, which significantly improved their technical skills and translation efficiency. More importantly, the corpus construction process provided students with a practical platform for technological innovation. For example, students experimented with optimizing terminology extraction methods during corpus construction, explored applications of the corpus in translation assistance tools, and proposed new ideas for terminology management specific to agricultural translation. Through the development of the corpus, students not only accomplished a large volume of agricultural technical text translation tasks but also applied their translation outcomes in agricultural promotion and international cooperation, demonstrating a close integration of research and practice. This cultivation of technological innovation capability ensures students' competitiveness in technology-driven translation projects while injecting new vitality into the technological development of the translation industry.

(3) Research collaboration and sharing of academic achievements to enhance academic innovation capabilities

Through participation in faculty-led research projects, students not only improved their practical abilities but also achieved significant academic outcomes. For example, students collaborated with faculty to write and publish academic papers covering translation theory, corpus applications, and agricultural translation practices. These achievements not only enhanced students' academic capabilities but also contributed to the research level and societal impact of the degree program. In research collaborations, students learned how to propose innovative research questions from an academic perspective through in-depth communication with faculty, and formed systematic research outcomes through data analysis and theoretical validation. Furthermore, the translation experience and technical skills accumulated by students in research projects were directly applied to agricultural technology promotion, international conference translation, and other practical work, effectively transforming research outcomes into real-world applications. This research collaboration model not only provides students with opportunities for academic research but also helps them convert research findings into practical applications, further enhancing their professional competitiveness and innovative capabilities.

(4) Diverse practices driven by research-based teaching to promote comprehensive development of innovative abilities

Through research-driven teaching, our university has established a diversified teaching practice model that comprehensively promotes the development of students' innovative capabilities. Faculty members introduce practical tasks from research projects into classroom teaching, allowing students to learn research methods and technical applications while completing translation tasks. For instance, in translation courses, students participate in translation tasks from research projects, mastering practical operational methods of translation technology and enhancing their translation abilities in real contexts. Simultaneously, faculty members utilize the professional knowledge and practical experience accumulated through research projects to feed back into course instruction, optimizing teaching content to ensure alignment with industry needs. By participating in research projects, students can continuously explore new translation methods and technical application pathways both inside and outside the classroom, forming a virtuous cycle between teaching and research. This diversified practice model not only allows students to gain high-quality learning experiences both in and out of the classroom but also provides solid support for their future career development. Through research-driven teaching, students' innovative capabilities are comprehensively enhanced, enabling them to propose unique solutions to complex translation tasks and demonstrate greater creativity in both technical and academic fields.

Through the "research feeding back into teaching" model, this degree program has achieved deep integration of research and teaching, enhancing students' translation practice abilities and academic research competencies while also making significant progress in cultivating students' innovative capabilities. By participating in research projects, students can identify problems in practice, propose innovative solutions, and transform research outcomes into practical applications. This model not only provides students with a high-quality learning and practice platform but also strongly supports the cultivation of high-level, innovative translation talents, injecting new vitality into the translation industry and societal development.

## 4 IMPLEMENTATION EFFECTS

After years of exploration and development, this degree program has achieved remarkable results in mentor team building, talent cultivation quality, employment outcomes, and service to local economies, while also realizing positive social effects in cultural dissemination and moral education.

(1) Significant achievements in mentor team building

Through the simultaneous advancement of research and teaching, the mentor team of this degree program has made significant progress. The mentor team has undertaken over 50 research projects, with more than 15 at the provincial or national level, including 2 national social science fund projects. The project areas cover high-level fields such as translation practice, ecological linguistics, and experimental research in pragmatics, forming a favorable situation where research promotes teaching and guides student cultivation. Additionally, the team has actively produced high-level academic outcomes, publishing over 100 papers on topics including pragmatic translation, agricultural technology translation, classical literature translation, machine translation, and ideological education in translation courses. Faculty members in this degree program have published 28 monographs, translations, and textbooks, with more than 7 academic works being distinctive and closely related to the field of translation studies. These research outcomes not only directly support translation course instruction but also provide solid academic backing for graduate training, enabling students to break traditional thinking in academic research and gain innovative guidance and inspiration.

(2) Year-on-year improvement in talent cultivation quality

This degree program has consistently emphasized a balance between theory and practice in the graduate training process, continuously refining training programs and teaching systems to gradually achieve the goal of promoting development through quality. Regarding thesis topics, our university places great importance on the practical orientation and academic value of the topics. All theses are strictly standardized, content-rich, and focus on practical issues in agricultural translation, covering various fields such as agronomy, forestry, veterinary medicine, and resource environment. These theses not only highlight the distinctive characteristics of our university's agricultural disciplines but also aim to solve real industry problems. Students are able to summarize the challenges encountered during the translation process in their theses, generalize experiences and strategies, and propose innovative solutions, thereby significantly enhancing the practical significance and innovative capability of their theses. The format of the theses is diverse, preserving the systematic nature of academic research while closely aligning with translation practice needs, allowing for various forms such as translation project reports, translation experiment reports, translation practice reports, and research papers to meet different training requirements. Over the years, all theses have passed plagiarism detection and received favorable evaluations in random assessments, reflecting the degree program's strict control over academic quality.

In specific training processes, this degree program emphasizes both the teaching of translation theory and the cultivation of application abilities, particularly focusing on enhancing students' practical translation skills. The college encourages students to actively participate in the National Translation Professional Qualification (CATTI) certification exams. Currently, the examination participation rate for this degree program is 100%, with 3 students from the 2024 cohort having already obtained Level 2 translation certificates. Through participation in translation certification exams, students are able to proficiently master the application methods that combine theoretical tools with translation skills, strengthening their professional translation abilities and comprehensively enhancing their employment competitiveness.

Moreover, to ensure the quality of graduate training, this degree program has strengthened supervision and guidance throughout the entire training process. Specifically, during the training process, strict implementation of the graduate training program is enforced, monitoring the execution of training plans to ensure that the objectives of course instruction are clear and meet industry needs. Simultaneously, the evaluation system for the entire graduate training process involves participation from mentors, the college, and the university, providing comprehensive guidance and supervision for teaching, practice, thesis writing, and defense. This comprehensive training system effectively ensures the quality of teaching and practice. Thanks to this rigorous assurance mechanism, students' academic abilities and practical skills have significantly improved, achieving a high degree of alignment between professional development and social needs.

(3) Significant employment outcomes with high matching degree for composite talents

Graduates of the translation master's program cultivated by this degree program have demonstrated remarkable employment outcomes due to their solid language foundation and rich translation practice experience, consistently ranking among the top in the university's graduate employment rates for several consecutive years. The overall employment destinations of graduates are highly aligned with societal demands. Graduates not only possess excellent translation abilities but also meet the demand for composite talents due to their knowledge backgrounds in agriculture, ecology, and China's national conditions. Graduates primarily enter the language service industry, translation education sector, agricultural enterprises and institutions, and agricultural economic departments, while also expanding into financial services, new energy, and cross-border e-commerce sectors. According to the McKinsey employment report, the translation master's program exhibits multiple advantages such as "high employment rates, high job satisfaction, clear career development paths, and high social contributions." As of now, student employment covers over 10 provinces and cities nationwide, with a focus on the Guangdong-Hong Kong-Macao Greater Bay Area, providing high-quality talent support for local economic development.

(4) Serving national strategies and local economic development

This degree program, based on the university's strong agricultural characteristics, actively responds to the national "Rural Revitalization" strategy and the demands of ecological civilization construction. Through university-local cooperation and teaching practice, it has made significant contributions to local economic development. In the past five years, the program has trained approximately 100 high-level translation talents, with employment destinations covering key industries such as education, new energy, and cross-border e-commerce, primarily centered in the Guangdong-Hong Kong-Macao Greater Bay Area and covering more than 10 provinces and cities nationwide. The graduate team has conducted in-depth rural practice activities, providing translation support for Guangdong's "Hundred-Thousand-Ten Thousand Project," thus contributing to local economic development. Furthermore, faculty members in this degree program actively undertake external translation demands, completing a large volume of translations for agricultural technical documents and research literature, providing quality services for agricultural enterprises and research institutions, and becoming an important bridge for agricultural research and international communication.

(5) Significant achievements in cultural dissemination and moral education

The degree program comprehensively implements the fundamental task of moral education, emphasizing the important role of cultural dissemination in cultivating internationally-oriented composite talents. The curriculum integrates outstanding traditional Chinese culture and socialist core values, leveraging the advantages of foreign language disciplines to allow students to experience cultural identity and a sense of mission in translation education. For example, graduate students have participated multiple times in translation work for international cooperation projects such as the China-Latin America Soybean Industry Technology Innovation Alliance and the "2023 Training Course on Production, Application, and Demonstration of Environmentally Friendly Fertilizers for Developing Countries," using fluent and precise translation to tell the story of China in the new era and promote international exchanges and mutual learning. The degree program also fully leverages the role of language education in cultural diplomacy, promoting translation research and practice that integrates with China's development philosophy, focusing on cultivating high-level translation talents that can serve the national language strategy.

In summary, the translation master's program at South China Agricultural University has demonstrated the effectiveness of its development through achievements in mentor team building, quality improvement in talent cultivation, employment outcomes, economic contributions, and cultural dissemination. It has played a positive role, especially in serving local economies and national development, cultural dissemination, and the cultivation of composite innovative talents. These achievements showcase the program's potential for continuously promoting the integration of innovation, practice, and social contribution in the future.

## COMPETING INTERESTS

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