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Article

Research on MTI Talent Cultivation from the Perspective of Translation Technology Teaching in the AI Era

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Abstract: In response to the rapid development of artificial intelligence (AI) and digital technologies, the translation industry is experiencing profound and unprecedented changes, which bring about new and complex requirements for talent cultivation. This study critically examines the current landscape of translation technology education within Master of Translation and Interpreting (MTI) programs in China and proposes targeted optimization strategies to overcome existing challenges. The research highlights three essential shifts necessary for the effective development of MTI professionals: first, a transition from conventional language-centered teaching approaches to methodologies that meet the evolving demands of the AI-driven era; second, a movement from isolated academic training towards comprehensive industry-aligned education that bridges theory and practice; and third, an evolution from solely transmitting knowledge to cultivating multifaceted competencies that integrate technical skills, cultural awareness, and critical thinking. Throughout these transformations, maintaining a dynamic and harmonious balance between pragmatic instrumental rationality and enduring humanistic values remains a fundamental priority.

Keywords: artificial intelligence; translation technology teaching; MTI talent cultivation

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1. Introduction

The rapid advancement of digital technologies and artificial intelligence (AI) has triggered revolutionary transformations in translation tools and methodologies. In today's dynamic and multilingual environment, translators engage in human-machine collaborations powered by AI, fundamentally reshaping language service provision. This technology-driven global translation ecosystem injects new vitality into the profession but also introduces novel challenges that demand adaptive strategies. The traditional notion of translation is being redefined, as multimodal virtual texts increasingly replace conventional print materials as core translation content [1].

In China, the field of applied translation studies has expanded beyond mere linguistic comparisons to embrace comprehensive theoretical frameworks, advanced technological tools, and localization services, thus forming a rich, multidimensional discipline [2]. The integration of machine translation, computer-assisted translation (CAT), big data analytics, and emerging technologies such as blockchain is fundamentally reshaping language services. These developments require higher education institutions to proactively adjust their curricula and training approaches to align with evolving industry needs [3].

Translation paradigms have shifted significantly, moving from solitary work processes to team-based, commercially-oriented operations. Machine intelligence now supplements and often replaces linear human translation workflows, dramatically improving efficiency and productivity. Meanwhile, cloud computing has facilitated real-time, crowdsourced translation efforts on a global scale. The scope of translation has expanded to encompass language services, localization, and technical writing, reflecting the growing socialization and commercialization of the profession.

To thrive in this environment, modern translators must possess proficiency not only in source and target languages but also in diverse technological tools and platforms. In response, academic programs are actively developing methodological frameworks that address the complexities of contemporary translation practices. Although translation technology courses have become more widespread, integrating education with industry demands remains an ongoing challenge. Gaps persist in curriculum design, pedagogical methods, faculty expertise, and practical training platforms. These deficiencies highlight the urgent need for comprehensive reforms in Master of Translation and Interpreting (MTI) talent cultivation to better prepare graduates for the evolving professional landscape.

2. Current Status of Translation Technology Teaching in MTI Programs

Traditional translation education primarily focuses on developing bilingual competence, cognitive conversion skills, and cross-cultural literacy, typically following a gradual "word-sentence-paragraph-text" pedagogical progression. While this approach remains effective for foundational language skills, it increasingly reveals limitations in the context of the AI-driven translation landscape. Several challenges currently hinder the modernization of translation technology teaching in Master of Translation and Interpreting (MTI) programs, including outdated curricula with insufficient technological integration, faculty members' lack of technical proficiency, a gap between theoretical instruction and practical technology applications, and weak collaboration between academia and industry. These constraints collectively limit the full potential of technology-enhanced translation education.

2.1. Disjunction Between Humanistic Principles and Technological Applications

Translation technology encompasses a broad range of tools, such as machine translation systems, computer-assisted translation (CAT) software, text processors, electronic dictionaries, corpus analysis platforms, and terminology management systems [4,5]. However, an ideological divide persists within the field. On one side, some scholars and educators uphold a humanistic view, perceiving translation as an art form incompatible with mechanization or automation. On the other side, skeptics may focus excessively on the limitations and imperfections of technology, underestimating its potential benefits. Bridging this divide is essential: human cognitive skills and technological innovation should be seen as complementary forces that reinforce each other. Although most MTI programs now officially include technological competencies as learning objectives, effective implementation of these goals remains a significant challenge.

2.2. Imbalance Between Curriculum Design and Technological Empowerment

As of July 2025, there are 374 universities in China offering MTI programs. Leading institutions exhibit strong capacities for innovation, integrating advanced translation technologies effectively into their curricula. However, many programs struggle to fully utilize intelligent translation platforms such as Transn and iSmart. This underutilization is often due to insufficient faculty training, lack of student engagement, and limited resources, resulting in classrooms where technology is present but not effectively harnessed. This imbalance hampers the enhancement of translation skills through practical technology empowerment.

2.3. Inadequate Faculty Development Systems

Current faculty development mechanisms display several shortcomings. Firstly, there is a tendency to emphasize theoretical knowledge over hands-on technological practice, leaving instructors underprepared for applied teaching. Secondly, compressed training timelines hinder deep understanding and mastery of new tools. Thirdly, commercial and academic training programs are often fragmented and lack unified, standardized

frameworks. These factors contribute to dispersed technical knowledge among teaching staff, low confidence in applying translation technologies, and a resistance to pedagogical transformation. Addressing these issues requires systematic, coordinated efforts to build comprehensive faculty development systems that can sustainably support technology integration in MTI education.

3. Optimization Strategies for Translation Technology Teaching

3.1. Aligning Curricula with Talent Cultivation Objectives

Since the inception of Master of Translation and Interpreting (MTI) education in China in 2007, the number of institutions offering MTI programs has grown rapidly, expanding from an initial 15 to 374 universities nationwide by 2025. The foundational framework for MTI talent development was established through the "Guidance Plan for MTI Education" issued by the National Committee of Translation and Interpreting Education in 2011. Subsequently, the "Basic Requirements for MTI Degrees" published in 2018 further refined cultivation standards, emphasizing alignment with industry demands, practical competence, professional ethics, and innovation-driven growth [6].

Higher education institutions should design customized cultivation plans that reflect these national standards while considering their unique institutional strengths and regional characteristics. A robust curriculum system should emphasize the distinct professional identity of MTI programs by structuring courses into three core modules: language services, technological applications, and specialized professional domains. This framework balances the preservation of foundational translation skills—such as bilingual conversion and specialized interpreting/translation—with enhanced training in technological applications, including computer-assisted translation (CAT) and localization engineering. Such curriculum design ensures that talent development remains closely aligned with the evolving requirements of the language services industry.

3.2. Innovating Teaching Philosophies and Models

The "Basic Requirements for Master of Translation and Interpreting Degrees" define MTI talent cultivation along three key dimensions: language proficiency, translation skills, and comprehensive competencies. The framework highlights five core capabilities: bilingual conversion, cross-cultural communication, practical translation/interpreting, critical thinking, and innovative entrepreneurship. These goals aim to nurture versatile professionals capable of serving diverse fields such as diplomacy, economics, trade, and technology.

Achieving these objectives necessitates breakthroughs in curriculum systems, faculty development, and teaching methodologies. In the AI era, emerging technologies—including intelligent translation platforms and mobile learning devices—offer unprecedented opportunities for personalized and flexible learning. Students can build individualized knowledge systems within open and networked learning environments, significantly enhancing their professional competencies.

Contemporary translation pedagogy is undergoing three fundamental shifts: from confined classroom instruction to authentic, context-driven practice; from narrow language training to holistic competency cultivation; and from passive knowledge transmission to active capability development. Educational reforms must preserve the systematic rigor of traditional teaching while embracing learner-centered approaches that avoid producing "technically proficient but intellectually impoverished" graduates. To this end, educators should adopt a new philosophy centered on "technology empowerment, student focus, and multidimensional practice." Through deeply participatory learning experiences, this approach optimizes resource allocation and fosters synergistic development of student abilities [7].

3.3. Enhancing Faculty Technological Capacities

Artificial intelligence, as an extension of human cognitive abilities, is reshaping the educational landscape of translation. Technologies such as machine learning and natural language processing have enabled intelligent translation systems to perform tasks traditionally requiring human intelligence. Against this backdrop, conventional translation competency frameworks struggle to meet the demands of the big data era. New technological skills—including tool application, information retrieval, corpus processing, and post-editing—have become critical competitive advantages for translation professionals.

Despite concerns about technological instrumentalism, globalization, and the digital economy, are fundamentally transforming translation education. Currently, a notable imbalance exists in MTI faculty competencies: while teachers often possess strong language and cultural instruction skills, their technological proficiency remains limited. To address this gap, training institutions should adopt a multi-pronged strategy: first, increase investment in technology education by establishing tiered and categorized faculty training programs; second, encourage participation in diverse technology training opportunities and promote innovation in teaching methods; and third, develop scientific evaluation systems for technology education and foster inter-institutional collaboration in technological pedagogy. Through systematic enhancement of faculty technological literacy, traditional strengths can be seamlessly integrated with modern capabilities.

3.4. Deepening Industry-Education Integration

The digital transformation and globalization of the language services industry require innovation in MTI talent cultivation models. It is vital to adhere to national standards and the principles of demand orientation, innovation leadership, practice-driven implementation, and development focus. Practical steps include:

Establishing collaborative mechanisms between universities and enterprises by involving industry experts in teaching, forming interdisciplinary teams that combine linguistic and technological expertise, and driving technological advancement among faculty members [8].

Implementing “Curriculum-Certificate Integration" plans by embedding professional certification standards, such as the China Accreditation Test for Translators and Interpreters (CATTI), into curricula. This promotes a competency- and certification-oriented quality assurance system that supports joint development for both educators and students.

Innovating practical teaching by extending internship durations, creating translation workshops, and engaging students in real-world projects. These efforts bridge the gap between academic training and professional environments, fostering smooth transitions from education to industry [9].

4. Challenges and Opportunities in Translation Technology Education

The rapid integration of artificial intelligence and digital tools into translation education presents both significant challenges and promising opportunities. Understanding these dual aspects is essential for educators, institutions, and policymakers to effectively navigate the evolving landscape of Master of Translation and Interpreting (MTI) programs.

4.1. Persistent Challenges

Despite the ongoing reforms and technological advancements, several persistent challenges remain:

Technological Adaptation Gap: Many MTI programs face difficulties in keeping pace with the fast-evolving technology landscape. This results in curricula that sometimes lag behind industry standards, limiting students' exposure to cutting-edge tools and methods.

Faculty Competency Imbalance: Although progress has been made in faculty development, a gap remains between linguistic expertise and technical proficiency. This imbalance hampers the effective integration of technology into pedagogy and limits students' opportunities for hands-on experience [10].

Resource Limitations: Financial constraints, limited access to advanced software licenses, and insufficient infrastructure can restrict the deployment of state-of-the-art translation technologies in classrooms, especially in less-resourced institutions.

Industry-Academia Disconnect: Collaboration between academia and the language services industry is often fragmented, impeding the practical application of academic research and limiting real-world learning opportunities such as internships and projects.

Balancing Humanistic and Technological Elements: Maintaining a harmonious balance between preserving the art and cultural sensitivity of translation and embracing technological efficiencies remains a nuanced challenge [11].

4.2. Emerging Opportunities

Conversely, these challenges coexist with numerous opportunities that can reshape translation technology education positively:

Innovative Pedagogical Models: The rise of AI-powered platforms and digital learning environments enables the creation of personalized, adaptive learning experiences that cater to diverse student needs and learning paces.

Cross-disciplinary Collaboration: Increasingly, translation education can leverage insights and tools from computer science, data analytics, and cognitive science, fostering interdisciplinary approaches that enrich students' competencies.

Expanded Industry Partnerships: Strengthening university-enterprise partnerships can facilitate knowledge exchange, co-development of curricula, and expanded internship and employment pathways for graduates.

Globalized Learning Communities: Online platforms and cloud technologies allow MTI students to participate in international networks, accessing global translation resources, diverse linguistic corpora, and collaborative projects across borders.

Sustainable Talent Development: By embedding ethical considerations and humanistic values alongside technological skills, translation education can cultivate responsible professionals who adapt to future industry shifts with resilience and innovation.

4.3. Strategic Directions

To capitalize on these opportunities while mitigating challenges, MTI programs should pursue strategic actions such as:

Continuously updating curricula to reflect technological innovations and industry trends.

Investing in faculty training to build robust technological competencies alongside linguistic expertise.

Enhancing infrastructure and securing access to advanced translation tools.

Establishing formalized partnerships with industry leaders for curriculum co-design and practical training.

Promoting research on the interplay between technology and translation ethics to maintain humanistic integrity.

By embracing these strategies, translation education can effectively prepare the next generation of translation professionals to thrive in an AI-enhanced and digitally interconnected world.

5. Policy Recommendations and Implementation Guidelines

To promote the effective integration of translation technology in Master of Translation and Interpreting (MTI) programs, it is crucial to implement coherent policies and practical guidelines that involve educators, institutions, and policymakers alike.

5.1. Strategic Planning and Faculty Development

National education authorities should establish clear strategic frameworks that emphasize innovation-driven talent cultivation aligned with international industry standards. Centralized platforms for sharing resources and best practices can enhance collaboration and reduce regional disparities. Simultaneously, continuous faculty training must be prioritized, including workshops, certifications, and industry exchanges to strengthen instructors' technological capabilities. Incentive mechanisms such as career advancement and research support can further motivate educators to adopt and innovate technology-based teaching methods.

5.2. Curriculum Reform and Industry Collaboration

Regular curriculum reviews are necessary to ensure course content keeps pace with technological advances and market demands. Flexible, modular course designs facilitate timely updates and integration across disciplines. Quality assurance systems aligned with professional certification standards help maintain high educational quality. Strengthening partnerships with language service enterprises enables practical training through internships, co-developed teaching materials, and real-world projects, bridging academic learning and industry needs.

5.3. Infrastructure and Ethical Education

Adequate investment in digital infrastructure is essential, including access to licensed translation software, cloud services, and linguistic databases, ensuring equitable technological accessibility across institutions. Alongside technical training, embedding ethics, cultural sensitivity, and responsible AI use within the curriculum cultivates well-rounded professionals who balance technological proficiency with humanistic values.

6. Discussion

The integration of translation technology into MTI education represents a pivotal shift that extends beyond simple curriculum updates; it fundamentally reshapes the identity, pedagogy, and professional expectations of future translators. This discussion examines the interplay between technological advancement, educational reform, and professional development, highlighting critical insights and implications.

Firstly, the transition from traditional language-focused teaching to a technology-empowered model challenges long-standing educational paradigms. While the enhancement of technical skills is indispensable, it must not come at the expense of linguistic sensitivity and cultural awareness, which remain central to translation quality. This necessitates a balanced pedagogical approach that nurtures both technological literacy and humanistic competencies.

Secondly, the uneven distribution of resources and faculty expertise across institutions underscores systemic inequities in translation education. Elite universities often lead in technology adoption and innovation, while many programs struggle with outdated facilities and limited access to advanced tools. Addressing these disparities requires concerted policy support and resource-sharing initiatives to ensure all students have equitable learning opportunities.

Thirdly, the evolving collaboration between academia and industry is a double-edged sword. While it facilitates practical skill acquisition and responsiveness to market needs, there is a risk of overemphasizing vocational training at the cost of critical thinking and theoretical foundations. A holistic education model should integrate applied skills with reflective learning to produce adaptive professionals capable of innovation.

Moreover, the rapid development of AI technologies presents both opportunities and ethical challenges. The potential for increased efficiency and expanded service scopes must be balanced against concerns about job displacement, data privacy, and algorithmic

biases. Embedding ethical education within MTI programs is crucial for preparing graduates to navigate these complexities responsibly.

Finally, the dynamic nature of translation technology demands continuous curriculum revision and faculty development. This ongoing process requires flexibility and openness to experimentation, ensuring that education remains relevant amid rapid technological change.

In summary, the successful integration of translation technology into MTI education hinges on a multifaceted strategy that embraces innovation while preserving core linguistic and humanistic values. It calls for equitable resource allocation, strengthened industry partnerships, ethical vigilance, and a commitment to lifelong learning among educators and students alike.

7. Conclusion

The rapid evolution of artificial intelligence and digital technologies is transforming the landscape of translation education, particularly within Master of Translation and Interpreting (MTI) programs. This study has analyzed the current status of translation technology teaching in China, identified key challenges, and proposed comprehensive optimization strategies aimed at aligning talent cultivation with the demands of the modern language services industry.

Effective integration of translation technology requires a fundamental shift in curricula, teaching philosophies, and faculty development. Emphasizing a balanced approach that combines technological proficiency with linguistic expertise and humanistic values is essential for cultivating versatile translation professionals. Moreover, fostering robust partnerships between academia and industry, enhancing infrastructure, and embedding ethical considerations within education frameworks are critical for sustainable development.

Looking forward, MTI programs must remain adaptive and innovative to keep pace with the rapid technological advances shaping the global translation ecosystem. By implementing coordinated policies, investing in faculty capacities, and embracing learner-centered pedagogies, translation education can equip graduates to meet future challenges and seize emerging opportunities.

Ultimately, the successful transformation of translation technology education will contribute to building a skilled, ethical, and innovative workforce capable of advancing the language services industry in the digital era.

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