Problems and Countermeasures in the Training of Master of Translation and Interpreting Talents in the Context of Technological Empowerment

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Abstract: This paper aims to explore the problems and countermeasures in the training of Master of Translation and Interpreting (MTI) talents in the context of technological empowerment. Through methods such as questionnaires and literature review, the study analyzes the problems in the training of MTI talents under technological empowerment and, by examining the feasibility and applicability of technologies, proposes countermeasures to these problems. The research finds that there are still problems in four areas: training concept, teaching content, research in the current training of MTI talents, and mutual empowerment of technology and education. Four countermeasures are suggested to address these problems, including utilizing technology to promote personalized training and optimize teaching content. This study provides valuable references for future educators to leverage technology in the training of MTI talents.

Keywords: Problem; Countermeasure; Talent training; Master of Translation and Interpreting; Technological empowerment

1. Introduction

In China, the Master of Translation and Interpreting (MTI) professional degree was approved by the Academic Degrees Committee of the State Council in January 2007, now marking 17 years of development. The cultivation of MTI talents inherently possesses a vocational nature, necessitating a close alignment with the demands of the industry market, which continuously evolves with the advancement of productivity. Currently, numerous technologies encompassed by "technological empowerment" are significant focal points in society.

Technological empowerment refers to the comprehensive and multi-faceted transformation of various industries using new-generation information technologies, including artificial intelligence (AI), big data, and internet technology [1]. In the field of translation, the most well-known technology is machine translation, which has undergone three significant stages [2]. Additionally, computer-assisted translation technology, localization engineering technology, and corpus technology have also gained popularity among industry professionals and translation educators [3,4]. Chan pointed out that translation technology is a crucial tool leading the translation field

toward a future without the Babel Tower [5].

In reality, the emergence of technology brings both opportunities and challenges to the translation field. Technology has gradually become an essential tool in the translation industry and education, and there is increasing emphasis on the application of relevant technologies and even the development of new technologies. It can be seen that the traditional MTI talent training is unsuitable for the current era of technological empowerment and the present training mode is also insufficient for the era. Many scholars are attempting to innovate and optimize traditional and current training models for MTI programs [2,6,7]. Despite numerous achievements, few have combined these efforts with the context of technological empowerment. Therefore, based on the concept of technological empowerment in education, this paper explores the existing problems of MTI talent cultivation in China through methods such as questionnaires and literature review, and attempts to propose countermeasures for optimizing MTI talent training in such context.

2. Technological empowerment in education

Internationally, UNESCO published the *Artificial Intelligence and Education: A Guide for Policy Makers* in 2021. Technology-empowered education has introduced numerous requirements for the training of MTI talents, serving as crucial foundations for improving talent training and warranting thorough elucidation.

2.1. Mutual empowerment of technology and education

Under the background of technological empowerment, researching how to utilize technology to promote innovative and high-quality development in education is an urgent and significant topic. With the rapid development of numerous new technologies, societal transformation necessitates that traditional talent cultivation systems can no longer meet current demands. This grants new momentum to the process of "de-standardization" in talent cultivation through artificial intelligence [8]. This illustrates that technology should serve as a powerful tool for educational development and transformation, requiring education practitioners to rely on technology for related activities. However, merely enabling education through technology is insufficient. To meet the educational demands of the current AI development environment, education should also empower technology, with teachers imparting more technical knowledge, stimulating, and fostering students' interest and enthusiasm for technology, and guiding them to embrace and utilize technology. To reach the pinnacle of innovative development and strengthen the follow-up force for the high-quality development of postgraduate education, focusing on cultivating technical talents is a crucial pathway [9]. Therefore, technology and education should mutually empower and enhance each other.

2.2. Training concepts

Technology provides numerous convenient services for education. In the current context, "personalized" training becomes increasingly feasible. We should actively transform our training concepts and try to explore "personalized" training. While technology offers convenience, it also brings certain risks. Therefore, adhering to the training concept of "humanistic spirit" is equally essential.

2.2.1. Concept of "personalized" training

As one of today's important technologies, big data plays a powerful role in various aspects of education, including decision-making, governance, and practice. It not only offers a broad perspective for decision-making, ensuring the scientific nature of governance but also enhances the precision and personalization of talent training [9-11]. Traditional talent training models have always "homogenized" students, with elective courses being the only

opportunities for student autonomy. Consequently, many students' special skills are suppressed, and their strengths are not effectively leveraged, leading graduates to rely on "homogenized" knowledge and thinking for the same employment or further studies, which cannot ensure enhanced competitiveness for most students. In fact, achieving a broad and precise training effect makes "heterogenized" or "personalized" training necessary. The context of technology-empowered education makes this "personalized" training more feasible. Hu *et al.* stated that educational equity is essentially aimed at achieving scalable personalized education [12]. Therefore, adhering to the concept of "personalized" training is crucial for promoting educational equity.

2.2.2. Concept of "humanistic spirit" training

The humanistic spirit has always been an indispensable element in postgraduate education. In the field of foreign languages, the humanistic spirit has long been valued [13,14]. In today's era of rapid technological development, it is even more essential to emphasize the cultivation of the humanistic spirit for two reasons: preventing the dominance of instrumental thinking and avoiding the phenomenon of technological "alienation" [7], and resisting the spread of false information [15]. Although Zhong and Mu pointed out that there are differences between the cultivation of talents in translation and foreign language majors [16], they did not indicate a difference in the cultivation of the humanistic spirit. Thus, to avoid students' dependency on technology, we should emphasize the cultivation of the humanistic spirit among MTI students.

2.3. Upgrade in training content

Today, the surging wave of AI technology continuously updates technical knowledge, requiring the training content for postgraduates to keep pace. Xue pointed out that postgraduate education must adapt to and promote societal development needs, and that foresight is a fundamental requirement of the knowledge economy for postgraduate education [17]. Thus, the content of MTI talent training urgently needs to be updated and upgraded to meet and promote current societal development needs, embrace AI technology, bridge the technological divide, and contribute to the creation, dissemination, and transformation of high-tech knowledge. When MTI was first established, the training program clearly stated that MTI students should be trained to become intermediate professional translators with highly competitive oral and written translation skills [16]. Today, this training program has been widely received, with more institutions tending to cultivate interdisciplinary, comprehensive, and compound talents. Although the essence remains unchanged, the content has broadened.

3. Existing problems in the training of MTI talents

This section presents a survey conducted among students pursuing MTI at several institutions. The primary method used was a questionnaire, which was modified based on the questionnaire from the *National Survey Report on Education and Employment of Master of Translation and Interpreting Graduates* edited by Qiliang Cui in China in 2017, adding questions related to the application of technology and removing questions related to internships. Subsequently, it was distributed online with a total of 50 questionnaires issued and 49 valid responses received, with 1 invalid response. The survey covered students from eight institutions, including the Chinese University of Hong Kong, Hunan University, and Central South University of Forestry and Technology, spanning six regions. The participants were MTI students in their first to third years, with two research directions and two types of degree categories represented.

Additionally, relevant information was gathered from the websites of various institutions, and related literature from the past five years was reviewed. Based on these surveys, searches, and literature reviews, four problems in the current MTI talent cultivation were identified.

3.1. Insufficient clarity in grasping the concept of personalized training

Based on the survey results, it was observed that although some teachers recognize the importance of cultivating interdisciplinary talents, this is not reflected in the course design or training programs, as shown in **Figure 1**.

As shown in **Figure 2**, 50% of the students from non-related academic backgrounds did not benefit from the interdisciplinary advantages offered by the institution.

Excessive consistency can lead to homogenization in talent cultivation [18]. Some instructors encourage students from other disciplines to join the program, but once admitted, these students fail to leverage their interdisciplinary strengths. As shown in **Figure 3**, they instead become "homogenized," losing their original advantages and becoming more alike.
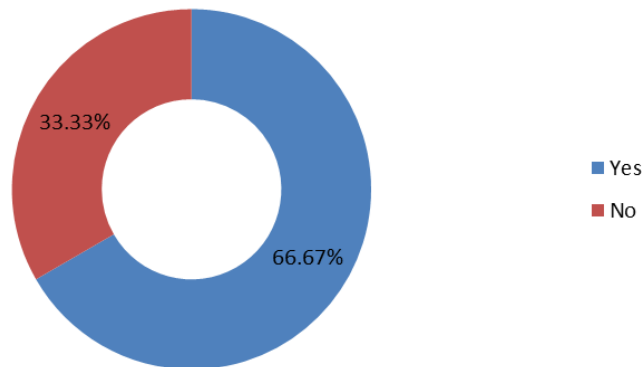
Figure 1. The proportion of MTI teachers emphasizing the importance of interdisciplinary talent
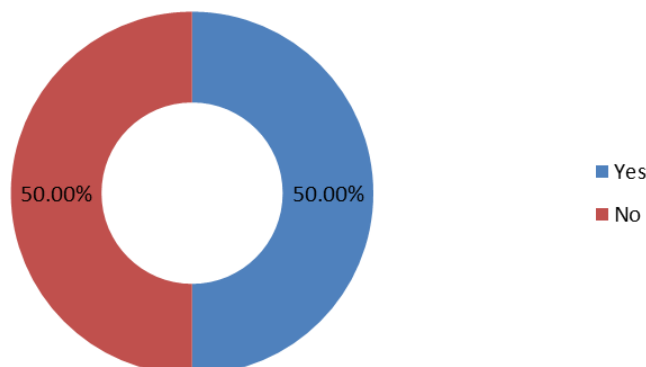
Figure 2. The proportion of students benefitting from advantages offered by universities with MTI undergraduate program
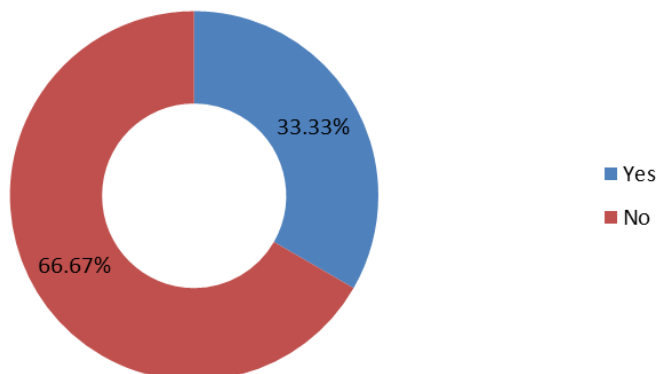
Figure 3. The proportion of MTI students recognizing the advantages of interdisciplinary studies

3.2. Inadequate optimization of teaching content

The current curriculum fails to adequately reflect the needs of the translation industry. Firstly, translation education has become detached from the professional nature of translation, and there is a need to deepen the awareness of translation as a profession, as shown in **Figure 4**.
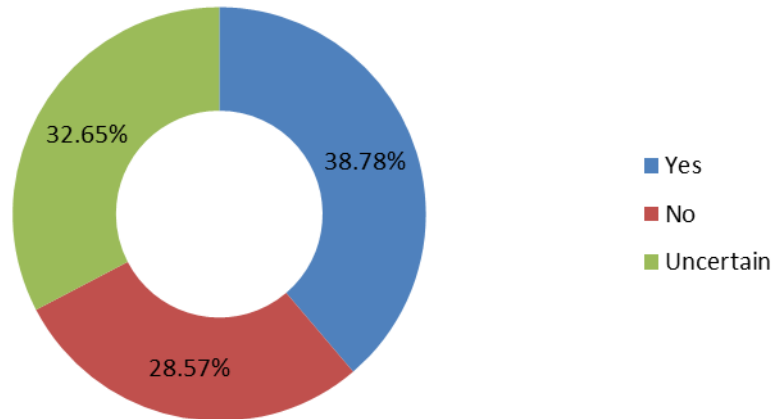

Figure 4. Proportion of MTI students intending to pursue a career in translation

As shown in **Figure 5**, only 38.5% of MTI graduates are engaged in translation work, which is less than half, indicating that the training for translation professionals requires further standardization. Secondly, the establishment of professional doctoral programs in translation has led to a relaxation in the training of MTI students. Although the introduction of professional doctoral programs is a positive trend for the field and industry of translation, we should also ensure rigorous standards at every level of the translation profession. Lastly, the phenomenon of external or corporate mentors being referred to as "advisory mentors" (who are consulted only when available) happened frequently, and was also highlighted by Lei Mu from the Guangdong University of Foreign Studies at the 2024 China Translators Association Conference. This problem should be given attention and effectively addressed.
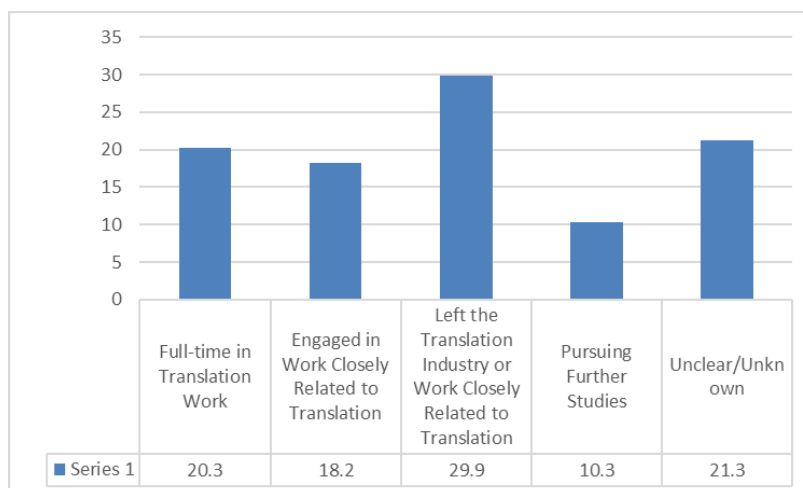

Figure 5. Career destinations of MTI graduates (%) (2023 Survey on the Development of the Translation Industry in China)

3.3. Asynchronous teaching and research and insufficient governance attention

Currently, translation technology as a practical tool has indeed received much attention, but curriculum developers

and teachers lack the motivation to independently explore cutting-edge theoretical knowledge. Lan also pointed out the insufficient theoretical contributions of translation technology research, proposing four perspectives to help researchers expand their theoretical propositions [19]. Additionally, there are problems in higher-level educational governance, such as an outdated understanding of quality ontology, a singular focus [20], and insufficient funding, making it difficult to provide adequate intelligent infrastructure.

3.4. Incomplete mutual empowerment of technology and education

In the context of technology-empowered education, the quality evaluation of MTI programs and dissertations remains a "weak point." This is due to the limited number of teachers proficient in using translation technology and the lack of teachers actively learning technological tools in higher education institutions. Consequently, many mechanical tasks impose significant pressure and burden on teachers. Xu pointed out that teachers should enhance their technical literacy [21]. Similarly, the quality evaluation lacks formative assessment [22].

Additionally, the abundance of course offerings and textbooks raises the question of how to make appropriate choices [22]. In the context of technology-empowered education, Zhu and Guan pointed out the deficiencies in shaping technical literacy within the training model of translation programs [2]. Although nearly five years have passed since then, this problem may remain under continuous exploration and solution-seeking. Furthermore, the current design of popular translation technology courses might still need improvement. The widely publicized AI simultaneous interpretation scandal involving iFlytek in 2018 did not prompt the translation community to discuss the ethical relationship between translation machines and translators [19]. Similarly, **Figure 6** indicates that although some universities offer courses related to translation technology, the teaching of translation technology ethics still needs enhancement.
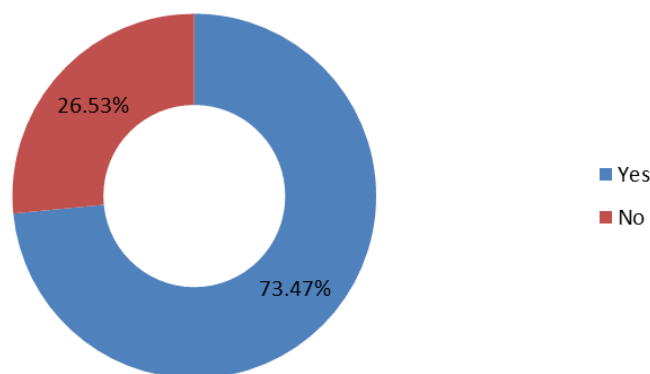

Figure 6. Proportion of MTI teaching content related to technology ethics

4. Countermeasures for optimizing the training of MTI talents

The aforementioned discussion highlights the existing problems in the cultivation of MTI talents thus far. To better address these problems, the cultivation of MTI students should proactively seek changes, actively relying on the backdrop of technological empowerment to tackle the critical problems currently at hand. The following are several countermeasures for optimizing the training of MTI talents, offered for the reference of scholars, educators, and young teachers.

4.1. Clarifying the concept of personalized training

As required under the technological empowerment background, we should strive to develop personalized training for MTI talents. This entails assigning different types of courses and devising tailored training programs based

on individual student differences. For instance, Zhu and Guan proposed two types of MTI training: "translation-oriented with supplementary technology" and "technology-oriented with supplementary translation" [2].

Adjustments can also be made based on undergraduate majors. For students with a technical background, the focus can be on deepening their technical skills while not neglecting translation skills. For students with a foreign language background, the emphasis can be on enhancing translation skills, international communication skills, and translation technology capabilities. For students from other disciplines, interdisciplinary training can be provided, along with the development of basic technical skills.

Moreover, within the foreign language discipline itself, differences may arise based on the institution's curriculum, for example, some institutions offer undergraduate courses in translation technology while others do not. Therefore, even MTI students with a foreign language background may require differentiated training programs. Teachers can also achieve personalized training through large language models [23]. All of these help MTI teachers to clarify their concept of personalized training.

4.2. Deeply optimizing teaching content

In the context of technological empowerment, the requirements for precision and standardization in teaching practice have become increasingly stringent. The current regulations related to the professionalization of translation need further refinement to better facilitate the employment of MTI graduates and help more of them enter the translation profession. Therefore, we can attempt to draw on relevant training from other disciplines.

Regarding internships and employment, there is only one recognized professional qualification certificate in the translation industry. At the 2024 Annual Meeting of the Translators Association of China, Lei Mu pointed out that we could learn from the training approaches of medical disciplines, such as the practice base similar to affiliated hospitals and the "four-in-one" certificate system: standardized training certificate + qualification certificate + academic certificate + degree certificate.

Moreover, with the current surge in the popularity of translation technology, we should consider whether to standardize the usage criteria and competency proofs of translation technology. For example, we could implement practical exams for translation technology, similar to the certification exams for Python, Office, and JAVA, to demonstrate students' translation technology capabilities. In terms of curriculum design, translation technology courses can draw on the curriculum design of technical disciplines.

In terms of talent cultivation models, we can learn from foreign MTI programs. The European and American MTI programs are typical representatives. Xing and Jin pointed out that adopting the European MTI Competence Framework can help clarify training objectives, enhance technical literacy, and develop professional skills for our MTI students [24]. Xu analyzed the "core curriculum" of the European Master's in Conference Interpreting and provided four insights for the cultivation of interpreting talents in China's MTI programs [6]. Many other scholars have also made similar explorations.

Additionally, we can collaborate with various faculties within our universities to cultivate talent. For example, the School of Foreign Languages and the School of Mathematics and Statistics at Qingdao University jointly established the "English + Big Data" innovative experimental class. Lastly, in addition to on-campus learning, off-campus internships are also necessary for MTI students. Regarding the problems with off-campus mentors or corporate mentors described in the previous section, we could first strengthen the management of off-campus mentors through blockchain technology to record what they have done, clarify their responsibilities, and require corporate mentors to provide a certain number of off-campus internship opportunities. This would ensure that MTI students had many opportunities to become familiar with the use of translation technology and project processes in practice, laying a solid foundation for their future translation work.

4.3. Synchronizing teaching and research and emphasizing governance

Given that the context of technological empowerment requires mutual empowerment of technology and education, teachers also need to strengthen their exploration of translation technology theories. Curriculum designers need to closely study the latest trends in the translation industry, integrating these trends into their curriculum designs to keep pace with the context. In recent years, the "machine translation + post-editing" model has been widely embraced by translation companies due to its dual advantages of machine and human efforts. According to the "Report on the Development of China's Translation Industry in 2024," 30.4% of related projects adopted such a model, and translation companies rated this model highest for "saving translation time" in 2023. In this broader context, university teachers can also try to balance teaching and research, using research to drive teaching practices.

To ensure the training of MTI students, it is essential to not only focus on the teacher level but also examine governance. It is necessary to explore how to improve graduate education governance under technological empowerment. Digital governance can manifest as the integration of information resources and accurate prediction of needs, with data brains, data exchange channels, data sharing [25], and artificial intelligence capable of monitoring and early warning in the training process [8]. In this way, relying on intelligent algorithms makes information more transparent and the acquisition methods more precise and synchronized, leading to more scientific and reasonable educational governance.

However, it is evidently not suitable to completely hand over the process to technology. Excessive objectivity cannot reflect humanistic care, and appropriate human intervention and adjustment are needed to prevent this phenomenon. Besides, to address the problems brought by limited funding and time, we could try introducing an artificial intelligence faculty team and building a robust team of teachers. It may also be beneficial to hire AI experts as part-time professors or send key AI faculty members for further training and study.

4.4. Further enhancing the mutual empowerment of technology and education

With the rapid development of translation technology, there exists an undisputed fact that translation technology will continue to exist and evolve. Consequently, educational concepts in translation have been updated, shifting from emphasizing the irreplaceability of human translation to embracing technology to achieve human-machine interaction. This shift in mindset is a necessary response to the background of technological empowerment. However, this cognitive shift has not yet been fully reflected in actual teaching activities. Therefore, several practical suggestions are proposed here.

Firstly, we could utilize technology to enhance teaching quality. In terms of quality assessment, both coursework and theses can be evaluated by using technological means to improve the objectivity and accuracy of the assessments. Technology can also be applied to formative and summative evaluations, effectively monitoring the quality of student training. For example, large language models, after learning, can compare student translations with those of professional translators to assess the quality of student translations [26]. In teaching models, artificial intelligence can be used to promote adaptive, dialogue-driven active learning, simulating interactions between human teachers and students, thus freeing teachers from mechanical tasks [7,27]. Additionally, virtual reality technology can be used to simulate project management and other translation practice activities, achieving virtual and real-world interaction [25], allowing students to experience the challenges and allure of translation work firsthand. In curriculum development, teachers can use generative AI to filter, classify, and accurately find resources needed for textbooks and course content, thereby improving preparation efficiency. Another applicable technology across these three aspects is persona technology. Commonly used in marketing to understand user information precisely, it can assist teachers in completing teaching tasks and in self-diagnosis and evaluation [8].

Secondly, translation technology training could be provided for teachers. As role models for translation competence, teachers themselves need to possess strong translation technology skills and literacy [28], setting a good example for students. If there is a lack of corresponding faculty or guidance for faculty training, international faculty can be actively introduced to help both teachers and students broaden their knowledge structure and disciplinary perspectives. Additionally, course design can promptly reflect the cultivation of translation technology skills. Based on their training objectives and faculty levels, institutions can offer course modules related to technology [2]. Since the introduction of translation technology courses is still recent and exploratory, successful cases from other institutions, such as the development of translation technology courses at the Chinese University of Hong Kong, can be referenced.

The power of technology is immense, and we should actively embrace it and seek changes. However, technology is fundamentally a purposeful programming of phenomena [29]. We must carefully consider the rational aspects of technology and avoid the blind use of technology, which may lead to its "alienation."

Both teachers and students need to exercise their subjective initiative, managing the relationship between the agents of translation technology and the objects of translation activities [19], to prevent the technology agents from becoming subservient to the technology objects. Translation technology ethics can help students avoid the risk of technological "alienation." Teachers might not only impart knowledge of translation technology but also inform students about the specific manifestations of translation technology ethics and the consequences of violating these ethics. Simply demonstrating the use of translation technology shows only its advanced capabilities, without revealing the risks it entails. For example, the use of ChatGPT is commonly covered in translation technology classes. If related ethical requirements are not emphasized, students might resort to opportunistic behavior, using so-called "post-editing" to complete the whole coursework.

Although the "machine translation + human post-editing" model is widely used in the industry today [30], MTI students, as learners, still need to exercise their subjective initiative and meticulously refine their translations during regular practice. Some might argue that students can learn a lot from the "post-editing" process. However, the first stage of the process—neural machine translation—is opaque, making it difficult to fully interpret the translation process using learned professional knowledge [2]. Additionally, ChatGPT might present data biased toward American hegemonic perspectives, which contradicts the core socialist values [31]. **Figure 7** supports that idea by showing that Yutang Lin, a famous Chinese translator, is wrongly recognized by ChatGPT as a foreign translator. Therefore, teachers should not only scrutinize this themselves but also convey to students the importance of avoiding ideological infiltration.
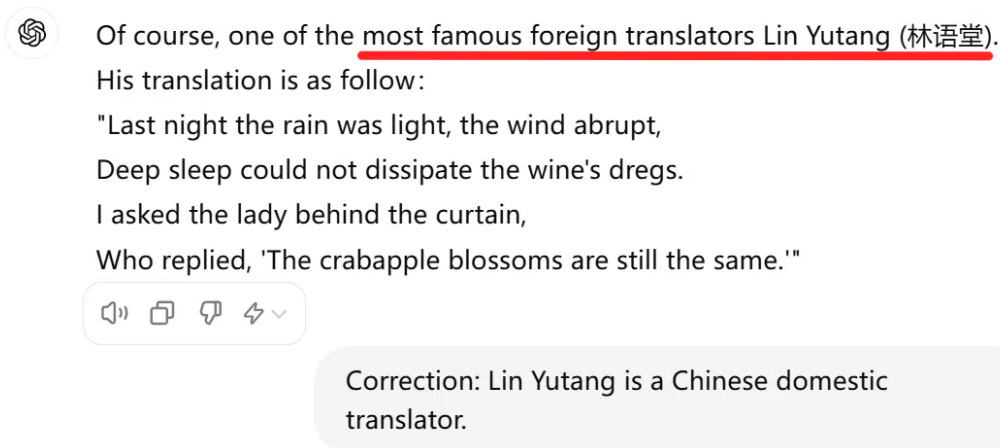
> Of course, one of the most famous foreign translators Lin Yutang (林语堂).
> His translation is as follow:
> "Last night the rain was light, the wind abrupt,
> Deep sleep could not dissipate the wine's dregs.
> I asked the lady behind the curtain,
> Who replied, 'The crabapple blossoms are still the same.'"

> Correction: Lin Yutang is a Chinese domestic translator.

Figure 7. Wrong answer by ChatGPT

Teachers could also emphasize the cultivation of a humanistic spirit, adhering to a "people-oriented" approach and guiding students to fully exercise their subjective initiative. Zhang pointed out that students should genuinely understand the significance of technology [32]. In teaching, teachers should guide students to recognize and develop their rational and irrational abilities [32]. Lu proposed standards for translation technology ethics, including algorithm ethics, human-computer interaction ethics, and ecological ethics, along with corresponding design norms and behavioral standards [33]. In the era of big data technology, translators should also adhere to "translation data ethics," defined by Wang and Liu as the sum of norms governing various social relationships arising from data actions among translation-related agents [34].

5. Conclusion

This paper investigated the problems and countermeasures in the training of MTI talents in the context of technological empowerment. Through methods such as questionnaires and literature review, it was revealed that there were four existing problems in the training of MTI talents in such a context. Subsequently, by examining the feasibility and availability of technologies, we found that there were four corresponding countermeasures to address the problems.

The MTI program not only serves as a foundation for doctoral programs but also marks a new beginning for undergraduate translation studies, playing a crucial role in bridging the two. We offer several suggestions for references, aiming to contribute to the innovative training for MTI talents and thus undertake the two stages well. Additionally, it is essential to consistently integrate technological ethics throughout the entire process, effectively combining technology with the training of translation talents to adapt to and promote the needs of societal development.

We also hope to attract scholars' attention to further explore the propositions related to our suggestions, such as translation technology ethics. For translation teaching and research, we hope to draw attention to exploring the innovative advantages of other disciplines, expanding the existing research horizons, addressing the limitations of translation teaching research confined to the field of translation studies itself, and seeking suitable methods for current translation education through external references.

Disclosure statement

The author declares no conflict of interest.

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