



Advancing Teachers' Translation Technology Proficiency in Digital Education Transformation

Lyu Yihong ^a, Tan Xiaoying ^a and Li Peilong ^{a*}

^a School of Languages and Cultures, Youjiang Medical University for Nationalities-533000, Baise, China.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: <https://doi.org/10.56557/jogress/2024/v18i48951>

Open Peer Review History:

This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: <https://prh.ikpress.org/review-history/12505>

Short Communication

Received: 01/09/2024

Accepted: 04/11/2024

Published: 19/11/2024

ABSTRACT

The digital transformation of education has profoundly influenced teaching and learning paradigms. Technologies such as artificial intelligence and big data facilitate personalized learning and individualized instruction. Blended learning models, which integrate online and offline education, are gaining traction, and open educational resources are becoming more readily accessible. However, translation-specialized teachers confront significant challenges, including limited digital literacy and insufficient training in new translation tools. Therefore, it is imperative to update translation teachers on current trends in translation technology and to develop practical strategies to improve their skills in this evolving field in this domain.

Keywords: Digital transformation; translation education; translation technology.

*Corresponding author: E-mail: lipeilong@ymun.edu.cn;

Cite as: Yihong, Lyu, Tan Xiaoying, and Li Peilong. 2024. "Advancing Teachers' Translation Technology Proficiency in Digital Education Transformation". *Journal of Global Research in Education and Social Science* 18 (4):141-49. <https://doi.org/10.56557/jogress/2024/v18i48951>.

1. INTRODUCTION

In the current wave of digital transformation in education, translation education is also undergoing profound changes. With the rapid development and broad application of information technology, translation technology has become indispensable to the translation industry. These rapid changes and transformations in the world affect education both as a structure and as learning environments. One of these values has been the digital transformation [1]. As a key factor in cultivating translation talents, enhancing the technological competencies of translation teachers is particularly crucial. This study aims to explore the effective strategies for translation teachers to strengthen their translation technology competence in the context of the digital transformation of education.

The study conducts a detailed content analysis of existing literature and digital resources related to translation education and technology. This process entails reviewing academic literature, monitoring reports that track developments in digital education, and analyzing examples where technology has been effectively implemented in the field of translation instruction. The aim is to determine the key skills that are necessary for teachers who specialize in translation and to recognize the areas where their digital literacy falls short. By analyzing trends in educational technology, the challenges translation teachers face, and the latest progresses in translation tools, this study aims to propose targeted improvement methods. Hopefully, it aspires to provide valuable insights for the professional development of translation teachers, enabling translation education to better align with the demands of the digital era and foster highly skilled translation professionals who meet market needs.

2. AN OVERVIEW OF THE DIGITAL TRANSFORMATION OF TRANSLATION EDUCATION

The digital transformation of education is to use digital technology to promote the comprehensive change of educational concepts, models, management, and the distribution of educational resources in order to improve the quality of education, promote educational equity, and cultivate innovative talents who can meet the needs of the digital era. With the rapid development of information technology and the

continuous progress of technologies such as the Internet, big data, and artificial intelligence, the educational demand is increasingly vigorous. In contrast, society's demand for talent is more diversified and individualized, which makes it difficult for the traditional education model to meet these needs. The global education competition has further intensified, and countries worldwide are actively promoting the digital transformation of education to improve the quality of education and international competitiveness. These provide solid technical support for the digital transformation of education, prompting education to undergo digital transformation to provide more flexible and personalized educational services.

The transformation of the educational environment based on digital technologies contributes to the emergence of new forms and methods of work of teachers. The search for new learning technologies in the digital educational environment contributes to the motivation of teachers to improve themselves in their professional activities [2]. It is a profound transformation in education, not just the simple application of information technology in education and teaching, but also an all-round and systematic change. It means using digital technologies such as artificial intelligence, big data, cloud computing, and the Internet of Things to innovate and optimize every aspect of education.

In education management, the digital transformation has realized the informatization and intelligence of management. Schools can conduct course scheduling, student management, teaching evaluation, and other tasks through digital systems, improving management and decision-making efficiency. In addition, the digital transformation of education also promotes the fair distribution of educational resources. With the help of network technology, high-quality educational resources can break through geographical limitations, benefit more students, and narrow the educational gap between urban and rural areas and regions.

2.1 The Significance of the Digital Transformation of Education

Digital technology in the modern world is not only a tool, but also a living environment that opens up new opportunities: learning at any convenient time, continuing education, etc. [3] The dialectical logic of change and constancy provides a new

perspective for a holistic grasp and systematic assessment of the transformation in innovation talent cultivation. Moreover, the digital transformation of education can significantly enrich the supply of educational resources. Through digital technology, various types of educational content can be presented in multiple forms, such as multimedia courses, virtual laboratories, online lectures, etc., providing students with more vivid and intuitive learning materials. At the same time, digital platforms enable high-quality educational resources to be more widely disseminated, narrowing the educational resource gap between urban and rural areas, regions, and schools and promoting educational equity.

The digital transformation drives the innovation of education and teaching models. With the help of technologies such as artificial intelligence and big data, teachers can more accurately understand students' learning situations and implement individualized teaching. In addition, the emergence of new teaching models, such as online education and multiple learning, has enhanced interactivity and participation in teaching and cultivated students' autonomous learning ability and cooperative spirit.

Furthermore, the digital transformation of education helps improve the efficiency of education management. Schools and educational institutions can effectively manage and monitor the teaching process, student information, teaching resources, etc., through digital management systems, providing data support for educational decision-making, thereby improving the quality of education and management level.

2.2 The Development of the Digital Transformation of Education

Considering the growing number of students accessing the Internet through mobile devices, universities have been increasingly interested in accepting new communication technologies in the teaching context, enhancing the digital transformation of these institutions. Thus, it becomes relevant to have instruments that allow the characterization of the use of these technologies in the context of higher education [4]. The digital transformation of education has become a significant trend in contemporary education. It will bring profound changes to education, making it more personalized, digital, intelligent, integrated, data-driven, and open and

shared, providing strong support for cultivating innovative and interdisciplinary translation talents who can adapt to the society in the future.

Firstly, there will be a greater emphasis on personalized learning. Through artificial intelligence and big data technologies, the digital transformation of education will provide tailor-made learning plans for each student based on their learning characteristics, interests, and abilities. This personalized learning experience will help enhance students' learning enthusiasm and effectiveness, teach students to follow their aptitude and make education more in line with the needs of each student.

Secondly, the blended learning model that combines online and offline education will further develop. During the pandemic, online education was widely applied and promoted, and this model will continue to play an essential role in the future. The blended learning model will combine online education's flexibility and offline education's interactivity to provide students with more abundant and diverse learning methods. Students can study online or offline or combine the two, according to their needs and circumstances, to achieve more efficient learning.

Thirdly, open educational resources (OER) will continue to be enriched. While free access to OER is a crucial benefit and contributes to teacher education programs, effective OER use relies on the proper application of other attributes [5]. With the popularity of the Internet, more and more high-quality educational resources will be provided to many students and teachers. These resources include online courses, teaching videos, teaching materials, etc., which will provide more people with learning opportunities and promote the realization of educational equity.

3. THE CHALLENGES FACED BY TRANSLATION SPECIALIZED TEACHERS UNDER THE BACKGROUND OF THE DIGITAL TRANSFORMATION OF EDUCATION

Translation-specialized teachers are first confronted with the pressure of technological updates. They need to be familiar with and master various new digital tools and platforms, such as online translation software, machine translation systems, corpus tools, etc., to perform teaching work better. Faced with these challenges and opportunities, university foreign

language teachers must seize the opportunity to integrate intelligent technology into their teaching practices to enhance their teaching abilities and the quality of talent development [6]. Mastering these new technologies requires significant time and energy, which is undoubtedly a huge challenge.

3.1 Translation Specialized Teachers Lack Digital Awareness of Translation Technology

Many translation-specialized teachers have accumulated rich experience in the traditional teaching mode but do not understand the emerging translation technologies and their application in teaching. They might not fully realize the great potential of digital tools such as machine translation, computer-aided translation software, and corpora in improving the efficiency and quality of translation. This lack of digital awareness leads to their failure to incorporate these essential technologies into the curriculum in teaching, preventing students from accessing the latest translation technologies and making it difficult for them to meet the market demand for translation talents.

In addition, the lack of digital awareness of translation technologies also makes teachers more conservative in their teaching methods. They might be more inclined to traditional lecture-based teaching while ignoring the possibility of using digital platforms for interactive and practical teaching. Such teaching methods make it difficult to stimulate students' interest and initiative in learning and make it challenging to cultivate students' ability to solve practical translation problems in the digital environment. If teachers cannot keep up with the times and improve their digital literacy, they will gradually be out of touch with industry development and unable to provide students with forward-looking and practical guidance.

3.2 Translation Specialized Teachers Lack a Translation Technology Training Mechanism

The existing teacher training system has relatively little specialized training for translation technology. The existing system of short-time professional development courses is not adequate to the task of filling in the gaps in professional education of translation teachers [7]. The training content often focuses on traditional translation theories and practices but lacks

coverage of emerging technologies such as machine translation, computer-aided translation tools, and corpus construction. It makes teachers feel powerless when facing the technical needs in actual teaching, and they cannot integrate the latest translation technologies into teaching, making it difficult for students to master practical translation skills. Moreover, the existing translation technology training often lacks pertinence. Translation-specialized teachers of different levels and research directions have different needs for translation technology, but most of the current training adopts a unified mode and content, which cannot meet the individualized needs of teachers. It makes some teachers feel they cannot closely combine the learned content with their teaching practice after participating in the training and cannot effectively improve the teaching effect.

On the other hand, there is an unbalanced distribution of training resources. Some regions and institutions may be unable to provide sufficient training opportunities for translation-specialized teachers due to resource limitations. Even if there are some training courses, there may also be problems such as unreasonable time arrangements and single training methods, which affect the training effect and the enthusiasm of teachers to participate.

In addition, the lack of an effective training evaluation mechanism is also a significant problem. After completing the training so many times, though, teachers cannot clearly understand their improvement in translation technology, and it is also difficult for them to effectively apply the learned knowledge to teaching practice. It dramatically reduces the actual effect of the training and cannot truly meet the needs of teachers to improve their translation technology capabilities.

4. THE CURRENT SITUATION AND DEVELOPMENT TRENDS OF TRANSLATION TECHNOLOGY

We define "translation technology" as a general term for various technologies (mainly information technologies, but not excluding technologies from other disciplines) that are used and may be used in translation practice, research, and teaching. Specifically, it can be software, a corpus, an online translation service, and so on. Machine translation technology is an essential part of current translation technology. The emergence of neural network machine

translation has significantly improved the quality of translation and enables rapid conversion between multiple languages. Although machine translation performance in some fields still needs to be improved, it can already provide people with a preliminary translation reference to help them quickly obtain information.

At the same time, Computer-Aided Translation (CAT) tools have also been widely used. These tools can help translators improve work efficiency, manage translation projects, and utilize resources such as translation memory and terminology databases to ensure the consistency and accuracy of translations.

With the development of speech technology, speech translation has gradually become a reality. Speech recognition technology can convert speech content into text and then perform language conversion through machine translation, providing a more convenient way for cross-language communication. In addition, the emergence of cloud translation technology has made the sharing and collaboration of translation resources easier. Translation teams can carry out project management, file sharing, and collaborative translation in the cloud, improving the flexibility and efficiency of work.

4.1 Mainstream Translation Technology Tools and Platforms

Translation technology tools and platforms play a crucial role in facilitating cross-language communication. From the perspective of translation professionals, translation technologies are categorized into four major categories: Computer-Assisted Translation (CAT) tools, Machine Translation (MT) tools, general tools, and online resources. The following are some mainstream translation technology tools and platforms:

Google Translate: This online translation tool is now widely used, free of charge, supporting mutual translation between multiple languages. It utilizes machine learning and neural network technologies to provide relatively accurate translation results, especially in common text types. In addition, Google Translate also offers a speech translation function to facilitate the translation of spoken language communication.

Youdao Translate: Youdao Translate is a translation tool launched by NetEase. It is available in multiple forms, including a web

version, a client, and a mobile application. It is characterized by relatively accurate translation results and provides abundant example sentences and explanations to help users better understand the translation content.

SDL Trados: This is a professional computer-aided translation (CAT) software widely used in the translation industry. SDL Trados can improve translation efficiency and quality by managing translation memory and terminology databases to achieve the reuse and consistency of translation resources. It is suitable for large-scale translation projects and professional translation teams.

MemoQ: Another popular CAT software, MemoQ offers powerful management functions of translation project and a flexible workflow. It supports the import and export of multiple file formats and is compatible with multiple Translation Management Systems (TMS), facilitating collaboration with team members and project management.

DeepL: Famous for its high-quality translation results, DeepL utilizes deep learning technology to provide more natural and accurate translations. It performs well in handling some professional fields and literary texts and is favored by many professional translators.

These mainstream translation technology tools and platforms have their characteristics and advantages and can be selected and used according to different needs and scenarios. Whether for individual users to perform simple text translations or for professional translation teams to handle large-scale projects, it is possible to find a suitable translation tool and platform to improve translation efficiency and quality and facilitate the smooth progress of cross-language communication. Although machine translation technology is constantly evolving, human translation remains irreplaceable in some important fields and cases where high quality is required. Machine translation can be an auxiliary tool to help people quickly obtain the translation result, but the final translation quality still requires human review and correction.

In general, translation tech tools and online platforms empower teachers in the field of translation to develop a range of crucial technical skills, which in turn revolutionize their teaching methods and improve the learning experience

they offer. Platforms like SDL Trados, MemoQ, Google Translate, DeepL, and Youdao Translate collectively introduce teachers to key elements of professional translation software. This exposure helps them develop abilities in areas such as project management, translation memory utilization, assessment of machine translation (MT), and post-editing tasks. These skills equip teachers to connect traditional translation techniques with cutting-edge technological approaches, ensuring that students are trained to meet the current needs of the translation sector.

4.2 Increasingly Digitalized and Intelligent Translation Technology

Technologies have been part of the translating profession for many years now, initially with the use of word-processing software, and later with various digital dictionaries, correcting software, and translation-organizing software [8]. Translation technology is profoundly changing and gradually evolving toward intelligence and digitalization. It is possible to construct large-scale digitalized translation resources. Digitalized translation resources can provide significant support for the autonomous development of translation teachers' capabilities, and the main types includes translation language resources, translation technology resources, translation learning resources, and translation academic resources [6]. With the continuous progress of artificial intelligence, machine learning, and natural language processing technologies, the field of translation has ushered in new opportunities and challenges.

Artificial intelligence (AI) has entered a new stage of development, approaching the level of human intelligence as never before in history, from academia to application, from specialty to generality [9]. Artificial intelligent translation technology utilizes advanced algorithms and models to learn and analyze many language data. Through deep learning neural networks, these technologies can understand the semantics and grammatical structure of the source language and generate more accurate and fluent target language translations. The performance of machine translation systems is continuously improving, and in some standard fields of translation, they can already provide quite good results, greatly enhancing the efficiency and speed of translation.

Digitalization brings broader applications and more convenient operations to translation

technology. Digital translation tools and platforms integrate and optimize each link in the translation process, achieving digital management from the input and processing of the text to the output of the translation results. The construction and sharing of digital resources such as translation memory and terminology databases enable translators to more efficiently utilize previous translation experience and professional knowledge, improving the consistency and accuracy of translations. However, we should also recognize that although translation technology has made significant progress in intelligence and digitalization, the importance of human translation should not be ignored. In translations involving complex factors such as culture, emotion, and context, human translators' professional quality and judgment are still crucial. In the future, intelligent and digital translation technologies will collaborate better with human translators to jointly promote the development of the translation industry.

5. EFFECTIVE WAYS TO IMPROVE THE TRANSLATION TECHNOLOGY PROFICIENCY OF PROFESSIONAL TEACHERS

The interconnection between language teacher training and translation competence has a substantial influence on language education and the cultivation of skilled language instructors [10]. For teachers, improving their professional translation technology proficiency helps them carry out teaching work better and enhances their professional quality and competitiveness. However, achieving this goal is not accomplished overnight; it requires a series of effective paths to improve step by step. We will explore some critical approaches to help teachers improve their translation technology proficiency, including deepening the training mechanism for translation-specialized teachers and establishing a practical community.

5.1 Promote the Training Mechanism for Translation Specialized Teachers

The deepening of the training mechanism for translation specialized teachers is first reflected in the continuous optimization and update of the training content. With the development of the times and the continuous changes in the field of translation, the training content should closely follow industry trends to ensure that teachers can master the latest knowledge and skills. In terms of translation technology and tools, with the rapid

development of technology, the application of translation technology in translation practice is becoming more and more widespread. The training content should include knowledge of Computer-Aided Translation (CAT) tools, post-editing of machine translation, and the use of corpora so that teachers can skillfully use these technologies to improve translation efficiency and quality. Regarding translation in specific fields, relevant training courses should be carried out in response to the translation needs of different professional fields, such as medicine, law, technology, etc. Teachers can choose the fields they are interested in or have a greater demand in the school for in-depth study to improve their translation ability and teaching level in specific fields.

The second is the diversified training methods. In order to improve the training effect and meet the different learning needs and styles of teachers, it is necessary to arrange centralized teaching and specialized lectures and invite experts, scholars, and senior industry professionals to conduct centralized teaching and lectures to impart professional translation knowledge and experience systematically. This method allows teachers to obtain information and broaden their knowledge quickly. It is necessary to focus on practical operations and case analysis and arrange actual translation projects and cases to allow teachers to apply their knowledge and improve their translation skills. Through the analysis and discussion of actual cases, teachers can better understand the problems and solutions in translation and enhance their practical operation ability. It is necessary to focus on on-site investigations and arrange for teachers to conduct on-site investigations and internships at translation companies, enterprises, or related institutions to understand the translation industry's actual operation and market demand. This practical experience can allow teachers to combine theory with practice better and provide more abundant materials and cases for teaching.

5.2 Establishment of Practical Community for Translation Specialized Teachers

The current translation faculty often come from traditional foreign language and literature backgrounds, possessing a strong foundation in humanities. However, they tend to be slow in embracing technological changes, leading to a gap between the translation technology skill and

the actual development demands of the translation industry.

The first step in establishing a practical community for translation-specialized teachers is to clarify its goals and concepts. The goal of this community should be to enhance the teaching level, practical ability, and professional quality of translation-specialized teachers, as well as to promote quality improvement and innovative development of translation education. Its concept should emphasize cooperation, sharing, practice, and innovation, encouraging teachers to grow together through mutual communication and learning. To achieve this goal, the community can formulate specific plans. For example, we could organize several teaching seminars, practical projects, and academic exchange conferences each year, set phased goals for teachers' professional development, and formulate behavioral guidelines and cooperation norms for community members [11].

The second step is to ensure that the members of the practical community for translation specialized teachers have diverse backgrounds and rich experience. In addition to translation teachers in colleges and universities, senior practitioners in the translation industry, experts and scholars in translation studies, educational technology experts, and enterprise representatives from related fields can also be invited to join. Such a member composition can ensure that the community can explore translation teaching and practice issues from multiple perspectives and achieve the organic combination of theory and practice. When recruiting members, clear standards and processes should be formulated. Through steps such as issuing recruitment announcements, individual applications, qualification reviews, and interviews, people with enthusiasm, professional ability, and a spirit of cooperation can be selected to join the community. At the same time, attention should be paid to the diversity of members' geographical distribution, disciplinary background, and teaching experience to promote broader communication and cooperation [12].

The third step is to build a communication platform for the community. An effective communication platform is a basis for a practical community for translation-specialized teachers. Modern information technology can be used to establish an online community platform, including websites, forums, social media groups, etc. This platform can publish the community's activity

information, share teaching resources, conduct online discussions, and exchange experiences. In addition, offline communication activities such as seminars, workshops, and field trips should be organized regularly. These activities can provide members with the opportunity for face-to-face communication, strengthening their connections and cooperation. With the combination of online and offline communication platforms, community members can communicate and learn anytime and anywhere, and jointly explore translation teaching and practice issues [13].

6. CONCLUSION

The study underscores the pressing requirement for teachers in translation to bolster their proficiency in translation technology to keep pace with the digital age. The study has pinpointed practical strategies for enhancing their technological expertise, stressing the importance of teachers staying current with the dynamic digital landscape and regularly refreshing their skills with the latest translation tools. The results suggest that achieving proficiency in this area requires backing not just from the teachers themselves, but also from educational establishments and training initiatives that can offer the necessary resources and foster partnerships with industry players. These insights are intended to steer translation teachers towards more robust professional development, enabling them to align with market needs and advance translation pedagogy in the digital era. The study encourages further research to build on these findings, providing more theoretical and practical perspectives on the professional development of translation teachers.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

FUNDING

The research was funded by the University-Industry Collaborative Education Program (Project No. 230801549171833). This research was also funded by the Special Project on Foreign Language Studies of Guangxi Philosophy and Social Science Research (Project No. 23WYL009) and the Innovation

Project of Guangxi Graduate Education (Project No. JGY2022291; YCSW2024542).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Balyer A, Öz Ö. Academicians' Views on Digital Transformation in Education. *International Online Journal of Education and Teaching*. 2018;5(4):809-830.
2. Tsarapkina JM, Anisimova AV, Gadzhimetova BD, Kireycheva AM, Mironov AG. The impact of digital education transformation on technical college teachers. In *Journal of Physics: Conference Series*. IOP Publishing. 2021;2001(1):012030.
3. Bilyalova AA, Salimova DA, Zelenina TI. Digital transformation in education. In *Integrated science in digital age: ICIS 2019* Springer International Publishing. 2020;265-276.
4. Santos H, Batista J, Marques RP. Digital transformation in higher education: the use of communication technologies by students. *Procedia Computer Science*. 2019;164:123-130.
5. Cubides SM, Chiappe A, Ramirez-Montoya MS. The transformative potential of Open Educational Resources for teacher education and practice. *Open Learning: The Journal of Open, Distance and e-Learnin*. 2024;1-20.
6. Yang A. Challenges and Opportunities for Foreign Language Teachers in the Era of Artificial Intelligence. *International Journal of Education and Humanities*. 2024;4(1); 39-50.
7. Petrova O, Sdobnikov V. How Can and Should Translation Teachers Be Trained?. *Journal of Teaching English for Specific and Academic Purposes*. 2021; 267-277.
8. Kirov V, Malamin B. Are translators afraid of artificial intelligence?. *Societies*. 2022; 12(2):70.
9. Yu X, Jia Y, Sun X. Machine Translation System Based on Intelligent Language Model. In *2023 2nd International Conference on Data Analytics, Computing and Artificial Intelligence (ICDACAI)*. IEEE. 2023;481-485.

10. Khasawneh MAS. Promoting Translation Competence in Language Teacher Training: Strategies for Equipping Lecturers with Translation Skills for Language Instruction. *Journal of Namibian Studies: History Politics Culture*. 2023;37: 131-149.
11. Jackson NC. Managing for competency with innovation change in higher education: Examining the pitfalls and pivots of digital transformation. *Business Horizons*. 2019;62(6):761-72.
12. Caena F, Redecker C. Aligning teacher competence frameworks to 21st century challenges: The case for the European Digital Competence Framework for Teachers (Digcompedu). *European journal of education*. 2019;54(3):356-69.
13. Gaspari F, Almaghout H, Doherty S. A survey of machine translation competences: Insights for translation technology teachers and practitioners. *Perspectives*. 2015;23(3): 333-58.

Disclaimer/Publisher's Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of the publisher and/or the editor(s). This publisher and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.

© Copyright (2024): Author(s). The licensee is the journal publisher. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:
The peer review history for this paper can be accessed here:
<https://prh.ikpress.org/review-history/12505>