Practical Dilemmas and Developmental Pathways for Enhancing the Digital Literacy of College Foreign Language Teachers in the Era of AI Empowerment

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Abstract: In the era of AI empowerment, the digital literacy of foreign language teachers in colleges is pivotal to achieving high-quality development of intelligent digital education and has a significant influence on the quality of foreign language teaching and the efficacy of talent cultivation. Building upon a review of the conceptual evolution of the digital literacy of teachers and the emerging characteristics and requirements of AI-empowered education, this paper identifies multiple dilemmas faced by college foreign language teachers in enhancing their digital literacy, including lagging digital awareness, weak technical capabilities, insufficient training provision and the absence of diversified evaluation mechanisms. Accordingly, this paper proposes several developmental pathways, such as teacher empowerment, tailored training programs and optimized evaluation systems with an aim to provide theoretical references and practical insights for the enhancement of digital literacy among foreign language teachers in colleges.

Keywords: AI Empowerment; College Foreign Language Teachers; Digital Literacy; Practical Dilemmas; Developmental Pathways

1. Introduction

In the era of AI-empowered education, enhancing the digital literacy of teachers not only improves the teaching effectiveness and fosters the development of students, but also accelerates the overall digital transformation of the education system. In November 2022, the Ministry of Education issued the *Digital Literacy of Teachers*, clearly stating the crucial supporting role of teachers' digital literacy in the process of educational digital transformation.

Foreign language disciplines possess an inherent digital gene. From the early multimedia-assisted teaching to the online self-study platforms, and then to the current AI applications, such as intelligent translation, speech recognition and virtual simulation, technology has always played a significant role in the reform of foreign language teaching. As the cultivators of international communication talents, the improvement of digital literacy among college foreign language teachers holds important strategic significance for achieving an educational power nation and cultivating high-quality talents.

Nevertheless, there is still a digital gap between the iterative updates of technological tools and the development of foreign language teachers' capabilities in universities. The teaching concepts of foreign language teachers in universities have not yet aligned with the requirements of the times, and the digital literacy levels still have deficiencies. In the era of AI empowerment, foreign language teaching faces increasingly complex challenges. Therefore, exploring the practical dilemmas and developmental pathways for enhancing the digital literacy of college foreign language teachers is related to the transformation and high-quality development of higher foreign language education in the intelligent era.

2. The Core Connotations of Digital Literacy of Teachers in the Era of AI Empowerment

2.1 The Conceptual Evolution of Digital Literacy of Teachers

The concept of digital literacy was first introduced by Gilster in 1997, who defined it as the essential ability to understand and use complex information presented by computers. In 2004, the Israeli scholar Alkalai proposed the first relatively comprehensive digital literacy framework, dividing it into five dimensions: image recognition and comprehension, recreation literacy, branching literacy,

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information literacy and socio-emotional literacy. This was the first relatively comprehensive conceptual framework of digital literacy, which laid the foundation for subsequent conceptual definitions and framework construction of digital literacy.

Domestic scholars started research on digital literacy relatively late but have made rapid progress. In 2004, the Ministry of Education officially issued a document promoting the integration of information technology with education and teaching, setting clear requirements for teachers' digital capabilities and information literacy. In late 2022, the Ministry of Education formally issued the industry standard of *Digital Literacy of Teachers*. The standard divides the digital literacy of teachers into five first-level dimension frameworks, including digital awareness, digital technology knowledge and skills, digital application, digital social responsibility and professional development, which provides an authoritative reference for the research, evaluation and enhancement of the digital literacy of teachers across the country.

2.2 New Characteristics and Requirements of AI-Empowered Education

AI-empowered education has brought about new features of personalization, intelligence and ubiquity. AI is no longer merely a carrier of knowledge storage or an information transmission channel. It has evolved into an "intelligent agent", capable of assuming multiple roles, including conversationalist, collaborator, evaluator and inspiration generator. In terms of resource provision, AI can quickly integrate and produce materials. Intelligent teaching platforms achieve multi-modal resource sharing, breaking through the constraints of traditional textbooks. In the teaching process, technologies such as intelligent testing and virtual language partners have transformed classrooms to multi-level tutoring, providing students with more space for autonomous learning. AI can also analyze and take advantage of learning behavior data to construct a comprehensive process-oriented evaluation system, thereby replacing traditional onefold assessment to boost the objectivity, fairness and comprehensiveness of evaluation.

New forms, such as intelligent teaching platforms, adaptive learning systems and generative AI-assisted instructional design, require teachers to be equipped with a higher level of digital literacy and achieve a deep integration of technology and teaching. Since AI technology becomes increasingly integrated into foreign language teaching, teachers are faced with some role crises, including the erosion of their authority as knowledge providers, the subversion of the central position of foreign language teaching, the weakening of their role in guiding humanistic values, etc. There is an urgent need for them to strike a dynamic balance between technological empowerment and humanistic values and to re-establish their irreplaceability in AI education ecosystem.

3. Practical Dilemmas in Enhancing Digital Literacy among College Foreign Language Teachers

The digital literacy level of college foreign language teachers is closely related to the effectiveness of digital transformation and intelligent upgrading of foreign language education in colleges. However, the current digital literacy of language teachers in China still fails to meet the requirements of educational digital transformation, leading to practical dilemmas, which to a certain extent restrict the further improvement of the digital literacy of teachers.

3.1 Weak Digital Awareness and Presence of Anxiety

At present, foreign language teachers often have a good command of profound humanistic literacy, but they possess a relatively weak technical background. They are lacking in a comprehensive understanding of the connotations of digital literacy and the initiative to improve it. Some teachers still regard digital technology as computer technology, such as the use of multi-media equipment or online platforms like Unipus, failing to recognize the transformative influence of AI on language teaching paradigms. The cognitive lag leaves teachers in a passive position when faced with technological changes and unable to integrate digital resources into all aspects of language teaching. Meanwhile, the emergence of AI tools has caused foreign language teachers to experience anxiety about being replaced. They worry that their authority as language experts will be challenged. As a consequence, they tend to adopt a resistant attitude towards AI technology and regard it as a threat rather than an empowering force. The anxiety not only

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influences their objective judgment of the value of technology-empowered teaching but also hinders their willingness to actively embrace technology and promote their own digital literacy.

3.2 Insufficient Application Capabilities and Lack of Higher-Order Skills

In the dimension of technical cognition, foreign language teachers in colleges generally have problems of fragmented understanding and superficial application of digital technology. They lack a systematic grasp of its internal logic, functional mechanisms and educational potential. While some teachers can make use of basic technologies, they are lacking in the ability to design intelligent teaching and integrate resources. They are also deficient in the design skills of integrating technology into teaching objectives, contents and students' characteristics. Most teachers can quickly grasp tools, like smart translation and speech recognition, but they universally lack systematic training in advanced applications, such as prompt engineering, AI-assisted teaching design and learning data analysis. It reflects a significant deficiency in their integrating digital technology into specific English teaching scenarios effectively. Their technological application remains at the presentational level, failing to fulfill a deep integration with the characteristics of inquiry-based, collaborative and personalized teaching approaches. In the AI era, substantial learning behavior data has been generated in foreign language teaching. However, most teachers lack the competence to interpret and apply such data, making it difficult to filter and integrate vast teaching resources or conduct dynamic adjustments and personalized interventions. As a result, it has constrained the deep efficacy of technology in the precision and differentiation of teaching practice.

3.3 Inadequate Training Provision and Limited Practical Efficacy

Teacher training is a crucial pathway to enhance digital literacy. However, the current digital literacy training for foreign language teachers is mostly composed of fragmented technical operational guidance, lacking long-term planning and sustainable training mechanisms. Also, the overall system remains underdeveloped. Many training programs are confined to theories and policy explanations, with the training content disconnected from actual teaching requirements. The transfer of theoretical knowledge into pedagogical skills proves unsatisfactory and the training fails to assist and guide teachers effectively in solving practical problems encountered in the teaching process. Additionally, most colleges have not established specialized support systems for the digital literacy development of teachers. They lack supporting services, such as technical assistants, teaching design consultation and so on. Existing digital resources in colleges are mainly based on general-purpose platforms and basic tools. While they meet general teaching management and resource presentation needs, they are unable to fully meet the specialized requirements of language teaching in such areas as context creation, language practice, process-oriented assessment, etc. The key to the development of teachers' technology capabilities lies in learning by doing and reflective practice rather than one-off knowledge transfer, but the current training programs are significantly lacking in both hands-on practice and follow-up support.

3.4 Absence of Evaluation Mechanisms and Lack of Diversified Assessment

Some colleges have insufficient awareness of the significance of evaluating the digital literacy of foreign language teachers. They fail to establish scientific and effective evaluation mechanisms for the comprehensive and objective assessment. Existing evaluation mechanisms are lacking in continuous support and peer collaboration mechanisms centered around authentic teaching problems. The time investment, trial-and-error costs and process-based improvements required for digital teaching exploration are often inadequately captured and recognized by current evaluation standards. Improving digital literacy requires teachers to invest a substantial amount of time and effort in learning new technologies and reconstructing teaching designs, but most colleges lack corresponding incentive measures. The cost-effectiveness of teachers' investment in technology innovation is much lower than that of publishing traditional academic papers. It is of vital importance for educational authorities and colleges to promote policy guidance and institutional assurance for the digital transformation of foreign language teaching. Only when practice costs resulting from technology conditions receive continuous

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support within organizational mechanisms can they truly be transformed into space for teaching improvement.

4. Developmental Pathways for Enhancing Digital Literacy among College Foreign Language Teachers

4.1 Renewed Concept and Teacher Empowerment

In today's era, the speed of AI technology iteration far exceeds that of any previous educational technology. College foreign language teachers should firstly undergo a transformation in their subjective awareness and a renewal of their concepts. They should change their traditional teaching ideas actively, gain an in-depth understanding of the value of digital technology in educational digitalization and modernization and regard the improvement of digital literacy as a continuous process throughout their whole professional careers. Therefore, teachers should maintain sensitivity to technological developments, keep abreast of the latest trends in educational technology and cultivate the habits of autonomous learning and reflection. Digital literacy should not be seen as an additional skill but as an inherent component of their professional development. Teachers should build trust and a sense of control over AI tools in real teaching scenarios gradually, reducing anxiety and uncertainty in the use of technology. In addition, teachers also need high-level abilities in information screening and processing to extract valuable contents from a vast amount of information, which will further strengthen their application and translation capabilities in scenarios like teaching design, resource development and digital evaluation. Future language teaching will be a process of collaborative creation between teacher intelligence and artificial intelligence. They should delegate lower-order cognitive tasks, such as knowledge retrieval, language correction and exercise feedback, to AI, while focusing on core responsibilities like teaching design, higher-order questioning, emotional support and value guidance. In this way, they can achieve complementary advantages between humans and machines. Through the approach, teachers can better meet the requirements of digital education, realize the role shift from knowledge transmitters to learning facilitators and teaching designers and thereby rebuild their professional value and irreplaceability in the context of artificial intelligence.

4.2 Tailored Training and Efficacy Enhancement

In the process of promoting the digital transformation of foreign language education in colleges, it is an essential step to establish and refine training models for digital literacy related to the professional competence of teachers. Colleges should construct a tiered and categorized teacher training system that meet differentiated needs and integrate the theoretical cognitive updates with the cultivation of technical operational skills. In terms of content, it takes into account both the teaching adaptability of AI tools and their practical application scenarios. In terms of format, it emphasizes contextualization and practice orientation to encourage teachers to transform technological knowledge into teaching design capabilities via workshops, virtual teaching research, case-based discussions, etc. When formulating training plans, colleges should attach more importance to sustainability, systematicity and relevance to help teachers to more accurately understand the development needs of their disciplines and professions, the personalized learning needs of students and the requirements of educational innovation. Additionally, foreign language disciplines have distinct professional characteristics, so training content should be closely integrated with actual situation of language teaching to enhance disciplinary relevance. For example, for oral teaching, training should cover intelligent speech evaluation, virtual situational dialogue, visual analysis of pronunciation and so on. For writing teaching, it should include AI-assisted writing feedback, peer review platforms, corpus-driven teaching methods and so on. For translation teaching, it should focus on post-editing of machine translation, translation memory systems, terminology management systems and so on. Through the context-based training design, the transferability and effectiveness of learning can be improved. Through professional development and continuous training, language teachers in colleges will become much more proficient in applying digital technology to teaching activities, creating more abundant, efficient and personalized learning experiences for students.

4.3 Optimized Evaluation and Institution

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Innovation

The continuous improvement of digital literacy fundamentally depends on an evaluation and incentive system compatible with it. Colleges should incorporate digital literacy cultivation into their faculty development and teaching quality assurance frameworks and convert the competence requirements in the industry standard of *Teacher Digital Literacy* into actionable training goals and assessment indicators. More importantly, colleges should incorporate digital teaching design, learning process data, digital evaluation and feedbacks into teacher training, teaching research activities, teaching inspections and quality improvement processes to make sure that digital literacy is no longer merely an external policy requirement but a stable component of internal teacher development. High-quality digital teaching designs, AI-assisted teaching cases and online course development should be included in the recognition scope of scientific research achievements. It ensures that teachers' time investment, trial-and-error processes and practical outcomes in digital teaching exploration are seen, recognized and further supported. Additionally, for those teachers who demonstrate excellence in the digital transformation initiatives, institutions should provide research start-up funds and workload reduction policies so that the teachers have the resources and time for continuous iteration and in-depth exploration. Evaluation management should take full advantage of data and be adept at applying appropriate data analysis tools to extract and refine valuable information contained in the data. When evaluation and resource allocation work together, teachers' concerns about digital teaching exploration can be reduced and their digital literacy can also be continuously enhanced.

5. Conclusion

In the era of AI empowerment, the enhancement of digital literacy among foreign language teachers in colleges is an inherent requirement for the high-quality development of foreign language education. At present, these teachers face multiple dilemmas in the process of enhancing their digital literacy, including lagging digital awareness, weak technical capabilities, insufficient training provision and absent evaluation mechanisms. These dilemmas are intertwined and mutually reinforcing, forming practical constraints on the development of language teachers' digital literacy. To address these challenges, it is necessary to construct a smart language education ecosystem through pathways, such as teacher empowerment, tailored training and optimized evaluation. It is crucial to emphasize that the fundamental mission of foreign language education lies in cultivating new-era talents with cross-cultural communication skills, global competence and a humanistic spirit. In the process of AI empowerment, teachers must always adhere to the humanistic core of education, using technology as a "tool" to carry the "way" of education. It is believed that with the advancement of theoretical research and the progression of practical exploration, the enhancement of digital literacy among college foreign language teachers will embrace broader development prospects, writing a new chapter for foreign language education in the intelligent era.

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