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Research on the Paths to Enhance the Digital Literacy of Foreign Language Teachers

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Abstract

In the background of the intelligent era, with the increasing reliance on digital technologies, significant transformations have occurred in foreign language teaching methodologies. Therefore, it is essential to enhance the digital literacy of foreign language educators to keep pace with the evolving times. This paper delves deeply into the concept of digital literacy, aiming to assist foreign language teachers in better comprehending and accommodating to the requirements of teaching in the digital age; at the same time, it also analyzes the existing problems faced by foreign language teachers in improving their digital literacy and proposes corresponding improvement strategies. The study analyzes the challenges of improving foreign language teachers' digital literacy mainly from three aspects, namely, individual, school and society, and proposes teachers' self-improvement strategies, school support strategies and social collaboration strategies to tackle these challenges respectively, with a view to providing feasible reference paths for the high-quality development of foreign language education.

Keywords

Foreign Language Teacher; Digital Literacy; Concept; Current Situation Analysis; Improvement Path

1. Introduction

The emerging digital technologies have brought novel challenges and prospects to foreign language education. In contrast to traditional foreign language education digital technology-assisted foreign language education has advantages such as high efficiency, strong interactivity, and abundant resources. It not only provides diverse learning materials and a realistic language environment, but also can precisely assess students' learning progress and abilities through data analysis, providing a basis for teachers to formulate personalized teaching strategies. However, in the face of these new technologies, how foreign language teachers can enhance their digital literacy and effectively use digital technology to assist in instruction has become a pressing issue in the current field of foreign language education. Therefore, it is particularly important to deeply explore the connotation of foreign

language teachers' digital literacy, analyze the current development situations of foreign language teachers' digital literacy, and propose targeted improvement strategies. This paper will conduct an analysis at the individual, school, and social levels to comprehensively explore methods for enhancing foreign language teachers' digital literacy, with the aim of providing valuable insights for the high-quality development of foreign language education.

2. Related Concepts

2.1. The Concept of Digital Literacy

Up to now, the notion of digital literacy has undergone three significant evolutions: initially, researchers primarily concentrated on the practical aspects of digital literacy. For example, Glister (1997) suggested that digital literacy is primarily characterized by the ability to comprehend, manipulate, and utilize information during computer use. Researches in this phase emphasized practical applications of digital technologies and manipulative skills. As the research progressed into its second stage, the emphasis transitioned to the cognitive aspects of digital literacy. Scholars began to argue that an individual's mindset and awareness are also important components of digital literacy. Kinzer (2010) emphasized the significance of the capacity to critically distinguish, analyze, and evaluate data in the context of an individual's digital practices. Researches in this phase revealed that digital literacy is not only about technical manipulation, but also involves deeper cognitive processes and thinking skills. In the third phase, based on "practice" and " cognition", researchers added a dimension of "society". Gourlay (2015) suggested that digital literacy is the ability of individuals to identify, access, manage, integrate, evaluate, analyze, and construct new knowledge through the use of digital tools within social practices. In addition, it includes awareness, attitude and ability to communicate with others. Tang and Chaw (2016) stated in their study that by enhancing digital literacy, individuals are able to achieve a virtuous construction of social literacy. Overall, the progressive development from "practice" to "cognition" and then to "society" not only reflects the gradual deepening of the academic community's understanding of digital literacy, but also indicates the progressive enhancement of the comprehension of the connotation of digital literacy.

2.2. The Concept of Teachers' Digital Literacy

Teachers' digital literacy refers to the awareness, knowledge, attitudes and competencies related to the creation and use of digital information resources that teachers need to have in order to implement teaching and achieve professional development (Lai, Lv & Gong, 2023). Various views have been put forward by the educational community on the dimensions of digital literacy of teachers. Some international organizations and countries around the world have given their own definitions, and have successively released assessment frameworks or standards

related to teachers' digital literacy (Wu et al., 2023). There is a high degree of overlap in the components, but each has its own focus.

Table 1. Elements of the Framework Related to Teachers' Digital Literacy

	Name of standard/framework	Country/ organization	Connotative elements
2010	Digital Literacy in the Curriculum	UK	Digital technology application skills, ability to find and select information, creativity, critical thinking, collaboration, communication, safety
2016	Teachers' Digital Literacy Framework	Austria	Digital Skills and Information Education, digital life, digital resource development, digital teaching and learning, digital subject teaching, digital process management, digital school community, digital professional development
2017	Generic Digital Competency Framework for Teachers	Spain	Information and data literacy, communication and collaboration, digital content creation, security, problem solving
2017	Teacher Professional Digital Competence Framework	Norway	Subjects and basic skills, school in society, ethics, pedagogy and subject-based pedagogy, leading the learning process, interaction and communication, change and development
2017	Digital Competency Framework for European Educators	EU	Professional engagement, digital resources, educational delivery and acquisition, assessment, empowering learners
2019	Professional Framework for Digital Teaching and Learning	UK	Teaching preparation, teaching methods, supporting learners to develop employability skills, subject teaching, assessment, accessibility and containment, self-development
2022	Cambridge Lifelong Competency Framework	Cambridge University	Using tools for searching and creating digital content, problem solving and innovation, sharing and interacting online, online safety and health

One of the most influential framework is the European Union's Digital Competency Framework for European Educators, released in 2017, which argues that teachers' digital literacy consists of five elements: professional engagement, digital resources, educational delivery and acquisition, assessment, and empowering learners. In addition, The Education Department of China also released the industry standard of Digital Literacy for Teachers in 2022, stating that the digital literacy framework for teachers contains five dimensions: digital awareness, digital expertise and competencies, digital application, digital social responsibility and professional development. Among them, digital awareness refers to the dynamic reflection of digital-related activities in the minds of teachers, mainly including digital cognition, digital willingness and digital will. Digital expertise and competencies refer to the digital knowledge and skills that teachers should understand and master in their daily teaching and educational activities. Digital application refers to the capacity to use digital technology resources to carry out teaching-related activities, including digital teaching design, digital teaching implementation, digital academic assessment, and digital cooperative education. Digital social responsibility refers to

the moral cultivation and behavioral norms in digital activities, including legal and moral norms and digital security guarantees. Professional development refers to the capacity to utilize digital technologies to foster both individual and community professional growth, encompassing digital learning and training, as well as digital instructional research and innovation (Lai et al., 2023).

3. Drivers for Improving Foreign Language Teachers' Digital Literacy

3.1. Global Wave of Digital Transformation in Education

In the digital era, emerging technologies such as artificial intelligence are profoundly changing and reconstructing the educational ecology, making language learning no longer limited to the traditional classroom environment but transcending the confines of time and space. The use of these technologies brings learners more personalized and flexible learning paths and greatly expands educational resources and methods. For example, artificial intelligence technology can customize learning plans for learners, and big data analytics help teachers more accurately grasp students' learning progress and difficulties. The integrated utilization of these technologies is propelling the educational sector towards higher levels of intelligence and individualization. At the international level, UNESCO has launched the "Education 2030" initiative, which emphasizes the significance of technology in empowering teachers and enhancing the standard of education. The initiative urges governments, educational institutions and the private sector to work together to utilize technology to enhance teaching efficiency, ensuring that everyone has access to quality education. Overall, whether driven by technological innovations or led by international initiatives, foreign language teachers are supposed to improve their digital literacy in order to enhance the effectiveness of foreign language teaching.

3.2. New Curriculum Standards and Core Competency Orientation

The Compulsory Education English Curriculum Standards (2022 Edition) clearly puts forward "the deep incorporation of technology and instruction", requiring teachers to use digital tools to improve students' language ability, thinking quality, cultural awareness and learning ability. It highlights the significance of digital literacy in foreign language instruction, which involves not just the utilization of technology, but also the advancement of teaching concepts and approaches. Through the deep incorporation of technology and instruction, teachers can utilize digital tools such as multimedia resources and online interactive platforms to create a richer and more diversified learning environment and activate students' motivation in learning. At the same time, this in-depth integration also helps to enhance students' global vision and cross-cultural understanding, and establish a firm basis for their future growth and development. In addition, the enhancement of digital literacy can also prompt teachers to better adapt to the teaching needs of the

information age, constantly update their educational concepts and realize self-growth. It motivates teachers to discover and implement novel but effective teaching approaches, which can enhance students' participation and promote deep learning. In conclusion, the concept of "the deep incorporation of technology and instruction" points out the direction for the professional development of foreign language teachers, and it also emphasizes the significant role of digital literacy in enhancing teaching effectiveness and the overall capabilities of students.

3.3. Realistic Needs of Students' Development

For Generation Z learners, their reliance on technology has become a common phenomenon: from birth, these learners are accustomed to digital interactions, such as game-based learning tasks, and the traditional "one-way lecture" model is becoming less and less appealing to them. At the same time, the need for personalized learning is becoming more and more apparent: by using data analysis techniques, it is possible to diagnose each student's learning situation accurately, thus better meeting the diverse learning needs of students. Therefore, foreign language teachers must possess a significant degree of digital literacy to fulfill students' personalized learning needs. They need to be proficient in utilizing digital tools to create personalized learning experiences for students, such as adaptive learning platforms and intelligent tutoring systems. By analyzing students' studying data, teachers can customize course content and methods to each student's individual style, thus enhancing learning effectiveness and satisfaction. Moreover, teachers should guide students to form positive digital study habits, such as autonomous learning and collaborative learning, and cultivate their critical thinking and innovation abilities in the digital environment. In summary, the realistic needs of students' development in the digital age have imposed greater demands on foreign language teachers' digital literacy, which is not only a challenge but also an opportunity for teachers' professional growth.

4. Analysis of the Current Situation of Foreign Language Teachers' Digital Literacy

4.1. The Teacher Level

Foreign language teachers are under multiple pressures to enhance their digital literacy. First, the emerging technologies (e.g., AI-driven language learning tools, immersive VR/AR technologies, and big data learning analytics platforms) requires teachers not only to master the basic operations, but also to comprehend the logic, benefits, and limitations of utilizing these technologies in foreign language instruction, which constitutes a significant cognitive and technological gap for many teachers with non-technical backgrounds. Second, the contradiction between the allocation of time and energy is particularly prominent. In addition to managing heavy teaching duties, teachers have to invest a significant amount of time in

learning new technologies, screening suitable digital resources, and designing teaching activities that incorporate digital tools, which can easily lead to teachers' fatigue. Furthermore, the challenge of transforming teaching concepts and modes should not be underestimated. Some teachers may be accustomed to the traditional lecture method, and may feel confused about how to effectively integrate technologies and design digital teaching activities that are student-centered and emphasize interaction and collaboration, and may even be resistant to or anxious about it. In addition, the lack of critical assessment and creative application skills is also a key issue. In the face of various digital resources and tools, how to ensure the quality, meet the teaching objectives, and creatively localize rather than simply imitate them demands teachers to have a high level of professional discernment.

4.2. The School Level

Schools, as supportive entities, have many deficiencies in the provision of environment and mechanisms. First, uneven infrastructure and resources constitute fundamental barriers, which include outdated, insufficient or poorly maintained hardware equipment (e.g., unstable high-speed networks) and a lack of funds for purchasing high-quality, specialized repositories of digital resources for teaching and learning foreign languages. Second, the lack of systematic training and continuous support is a key issue. The training provided by schools is often fragmented, superficial, and lacking in relevance (especially for the application of technological tools characteristic of the foreign language subject), and there is a scarcity of subsequent support for teaching and research and technological guidance, which renders it hard to realize the effects of the training. Furthermore, the assessment and motivation system fails to keep pace with the times. The existing teacher assessment system usually fails to adequately recognize teachers' efforts and achievements in digital resource development, technological innovation teaching practice and online course construction, which undermines the motivation of teachers for continuous improvement. In addition, there is a lack of unified planning and leadership for the development of digital teaching and learning. Schools might be devoid of a definite plan for the transformation of digital instruction in foreign languages, and fail to provide teachers with a clear development path and a platform for resource integration.

5. Paths to Improve Foreign Language Teachers' Digital Literacy

5.1. Teachers' Self-Improvement Strategies

Foreign language teachers should proactively build a set of continuous digital learning mechanisms in today's digital era. First, teachers can set a series of phased goals, such as mastering a new teaching tool every month or designing a digital course every semester, as a way to gradually improve their technological skills. To make these goals more systematic, teachers can leverage a micro-certification

system, such as by obtaining a certificate in educational technology on Coursera, to demonstrate their professional growth in a specific area. Second, teachers need to deepen their pedagogical reflection on technology integration, which can be achieved through the playback of classroom videos and the analysis of student feedback data, so as to optimize the effectiveness of the application of digital tools in listening and speaking training and cross-cultural virtual scenarios. At the same time, it is also vital to establish a community of practitioners. Teachers can join a foreign language education technology community to inspire their own innovative applications in teaching through case sharing and lesson plan collaboration with their peers. In addition, teachers should cultivate a sense of digital ethics, pay attention to the privacy protection of student data and the norms of reasonable use of AI-generated content, to guarantee the reasonable utilization of technology and foster a secure and efficient study atmosphere for students.

5.2. School Support Strategy

Schools should establish a practical support system based on the actual situation. The first task is to effectively reduce the non-teaching burden of teachers, simplify the meeting process, optimize administrative affairs, and free up time for teachers to learn and practice digital skills. Secondly, hardware support should be based on the principle of "adequate and useful", ensuring that the basic network is stable, the classroom multimedia equipment is in good working order and the maintenance response is quick, and prioritizing the introduction of cost-effective basic digital tools (e.g., free interactive platforms, basic AI voice tools). Thirdly, the training design must accurately meet the needs, abandon generalized lectures and carry out "micro-workshops" based on the real classroom (e.g., using the existing platform to provide effective online oral feedback). The "digital backbone" should be encouraged to form mutual support groups to provide "hands-on" practical guidance. Moreover, the most critical aspect is to reform the assessment and motivation systems, including performance evaluations, recognition of excellence, and title assessments, clearly recognizing and assigning appropriate value to the specific achievements of teachers in the development of digital resources, the incorporation of efficient technology in educational practice, and involvement in digital educational research, so as to make the teachers' inputs "visible and quantifiable". At the same time, schools should also take the initiative to screen and match high-quality free or low-cost external resources to lower the threshold for teachers to obtain resources.

6. Conclusion

In the background of the intelligent era, the improvement of foreign language teachers' digital literacy has become an important task to promote the high-quality development of foreign language education. The fulfillment of this task is not only

related to the teachers' personal career development path and the improvement of their professional skills, but also exerts a significant influence on the students' learning effect and future competitiveness.This study explores in depth the current dilemmas faced by foreign language teachers in the process of enhancing digital literacy. In order to effectively improve this situation, foreign language teachers need to actively embrace new technologies, continuously improve their digital literacy by participating in professional training or carrying out self-study and practical explorations, and incorporate digital technologies into their teaching to enhance teaching quality. At the same time, schools should also offer full support, enhance collaboration and interaction, and work together to build a favorable ecological environment conducive to the enhancement of foreign language teachers' digital literacy.

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