



EFL Teachers in the Digital Era: A Journey of Adaptation

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Abstract

Digital education has rapidly evolved, bringing about a significant transformation in traditional teaching and learning approaches. The integration of information technology with English instruction in the digital age has ushered in a wave of digital teaching tools, expanded teaching resources and environments, innovative teaching methods, and digital teaching evaluation and management. Within this context, this research aims to examine the psychological adaptation of EFL (English as a Foreign Language) teachers to digital education, particularly how they adjust their teaching strategies to incorporate digital tools and methodologies. Through a comprehensive review of existing literature, we explored the transition of EFL teachers towards digital literacy, identifying the main opportunities and challenges they encounter in this digital shift. Our findings highlight that while digital technologies offer enhanced teaching and learning capabilities, they also require teachers to undergo a significant psychological and pedagogical transformation. The results contribute insights into the mechanisms through which EFL teachers in Chinese higher education can effectively integrate digital technologies into their teaching practices, thereby enhancing both their own and their students' digital literacy skills.

Subject Areas

Educational Technology, Teacher Education

Keywords

The Digital Age, EFL Teachers, Chances, Challenges, Psychological Transformation

1. Introduction

The advent of modern technologies in the digital age has profoundly revolutionized

nized communication among individuals (Yadav *et al.*, 2018) [1]. Recently, the rapid proliferation of online technological advancements and the continuous expansion of electronic devices have granted language learners pervasive and authentic language exposure. Modern technologies have not only enabled English as a Foreign Language (EFL) learners to engage in language learning within the educational context but have also opened up new possibilities (Rassaei, 2017) [2]. Numerous studies have delved into the effects of integrating various technologies into education (Benson & Chik, 2011) [3], underscoring the critical role of face-to-screen language learning in nurturing language proficiency (Fathali & Okada, 2018) [4]. Integrating technology into classroom instruction transcends mere computer skill instruction; it necessitates EFL teachers to explore innovative approaches that amplify student motivation and cultivate effective learning strategies. As the educational advantages of digital information technology have become increasingly evident, digital technology has become deeply intertwined with the teaching and learning of EFL. Without a solid foundation in digital competence, EFL teachers cannot impart the same skill set to their students (Ramírez-Montoya *et al.*, 2017) [5].

While the body of research on the integration of digital technologies in EFL education is growing, significant gaps remain in understanding the full spectrum of challenges and opportunities faced by teachers. Analysis of former research indicates a predominant focus on the benefits and technological aspects of digital education, with less attention given to the nuanced challenges of psychological adaptation and pedagogical change required by teachers. Moreover, the literature often overlooks the disparity in access to and quality of digital education resources, which can significantly impact the effectiveness of technology-integrated language learning. Another critical gap lies in the limited exploration of EFL teachers' professional development needs related to digital literacy and innovative pedagogical methods in the context of evolving digital technologies.

Therefore, this paper adopts a review paper approach to bridge these gaps. It aims to analyze the situation of former researches, summarizing the problems that exist and providing a nuanced understanding of how EFL teachers can adjust their teaching attitudes, enhance their pedagogical approaches, and modify their teaching methods. This transformation empowers them to excel in the realm of digital English teaching reform, driven by advancements in the digital age. By comprehending their psychological transformation and addressing the challenges identified in previous studies, this research seeks to formulate appropriate recommendations and strategies. These insights aim to support EFL teachers in Chinese higher education to achieve a positive psychological transformation and leverage the opportunities presented by the digital age effectively.

2. Opportunities and Transformations for EFL Teachers in the Digital Era

The integration of technology not only enhances teaching effectiveness but also

mitigates the challenges associated with implementing student-centered teaching methods (Ahmad & Ibrahim, 2017; Kafyulilo *et al.*, 2016) [6] [7]. Scholars argue that continuous professional development plays a pivotal role in equipping educators with technological expertise and addressing any potential apprehensions stemming from digital information technology (Kafyulilo *et al.*, 2016; Huang *et al.*, 2019; Huang *et al.*, 2021) [7] [8] [9].

2.1. Opportunities and Transformations in Teaching Tools, Resources and Environment

Upon entering educational settings, a significant portion of students bring with them prior experience in utilizing digital tools and engaging in digital environments to construct meaning (Yamada-Rice, 2011; Potter, 2012) [10] [11]. EFL education and instruction have evolved, offering a range of general and specialized tools such as MY Access!, WriteToLearn, Criterion, Pigai, iWrite, FiF Speaking Practice, and IELTS Smart Learning. These resources provide convenience, engagement, and interaction in the teaching of EFL English (Du & Gao, 2022) [12]. From a learning perspective, these apps and platforms offer EFL students personalized study materials, immediate feedback, and automated evaluation of their strengths and weaknesses. Additionally, digital online learning platforms, based on big data, can furnish historical data on EFL students' classroom performance, assignment completion, and overall achievements.

The impact of Computer-Assisted Language Learning (CALL) on language skills was thoroughly examined and revealed that the integration of technological advancements, such as the internet, can improve learners' reading abilities and facilitate effective communication among EFL students (Bensalem, 2020) [13]. Technology empowers students to generate, gather, store, and leverage knowledge and information, while also enabling global connections with individuals and resources. It fosters collaborative knowledge creation, distribution, and utilization of knowledge products (Von Davier *et al.*, 2017) [14]. Digital tools, products, and resources constitute the digital learning environment, where learning activities and interactions between EFL students and their peers or instructors occur (Redecker & Punie, 2017) [15]. With the aid of digital resources and environments, EFL students can adapt to interactive digital learning, fostering autonomous learning abilities and critical thinking.

Broadly, the transformation of teaching resources and environments propelled by digital information technology has a remarkable influence on traditional English classrooms. EFL educators are encouraged to alleviate their workload, gain insights into individual students or entire classes, and cultivate innovative teaching methodologies (Baker & Smith, 2019) [16]. These digital teaching tools not only reduce the need for extensive comments on lexical or syntactic errors but also focus on delivering personalized guidance through the utilization of customized learning pathways (Link *et al.*, 2020) [17].

Therefore, EFL educators are encouraged to engage in continuous learning to stay abreast of the latest digital tools and pedagogical strategies. This can be

achieved through professional development workshops, online courses, and peer collaboration networks. Moreover, educators should practice reflective teaching by regularly assessing the effectiveness of digital tools and making necessary adjustments to their teaching practices.

2.2. Opportunities and Transformations in Teaching and Learning Methods

Thanks to its continual advancements, digital technology has reshaped both teaching methodologies and learning strategies (Hollands & Escueta, 2020) [18]. As highlighted in the changes in teaching tools discussed earlier, these transformations are quietly permeating EFL classrooms. This encompasses shifts in how teachers instruct and students absorb information, fostering a gradual shift toward a culture of digital teaching and learning.

The incorporation of modern technologies has revolutionized the EFL learning landscape in academic settings (Rassaei, 2017) [2]. Numerous research studies have delved into the impact of integrating various technologies into education (Benson and Chik, 2011) [3]. In this context, the role of face-to-screen language learning assumes a pivotal role in enhancing language proficiency (Fathali and Okada, 2018) [4]. Nonetheless, effective technology integration in classroom instruction extends beyond teaching computer skills; it necessitates EFL educators to explore innovative approaches that bolster student motivation and facilitate learning. Given the clear educational advantages provided by digital information technology, digital technology has become increasingly entwined with the teaching and learning of EFL. Consequently, without a proficient level of digital literacy, EFL teachers would struggle to impart the same skill set to their students (Ramírez-Montoya *et al.*, 2017) [5].

In conclusion, the widespread adoption of digital technology offers a viable avenue for enhancing EFL teachers' performance. To embrace these pedagogical changes, EFL teachers should develop a comprehensive understanding of digital literacy and its application in language teaching. This includes not only technical skills but also an awareness of how digital tools can support different learning styles and objectives. Teachers must also cultivate a growth mindset, being open to experimentation and learning from both successes and failures. This enables EFL instructors to invest more time and energy in innovating teaching content, researching teaching technology, revamping teaching methods, and attending to the personalized growth of students.

2.3. Opportunities and Transformations in Teaching Evaluation and Management

Numerous scholars (Eurydice, 2011; Selwyn, 2011) [19] [20] have underscored the importance of aligning technological innovation with pedagogical innovation to bring about a genuine transformation in education. Consequently, the integration of big data analysis and management into English learning is woven throughout the entire educational process via digital management.

On one hand, digital tools can assist EFL learners in honing their reading skills and expanding their vocabulary knowledge (Hassan Taj *et al.*, 2017) [21]. They also offer learners corresponding intervention measures to comprehend learning rules, predict learning outcomes, identify areas of improvement, make timely adjustments, and promote effective learning. This ensures that teaching management remains precise, relevant, and dynamic.

On the other hand, these tools enable EFL teachers to conduct in-depth analyses of learners' learning trajectories and behaviors, administer large-scale independent assessments of the learning process, and manage EFL students' behavior effectively. They facilitate the development of personalized and precise learning plans rooted in big data insights about students' learning characteristics. The deliberate appeal, efficacy, and utility of digital tools can have a positive impact on EFL learners' motivation (Wei, 2022) [22]. To effectively implement these technologies, teachers must become proficient in data analysis and digital communication strategies. This may require additional training and a willingness to adapt traditional assessment and management practices to incorporate digital solutions.

In summary, digital information technology empowers formative evaluation, summative evaluation, and online and offline assessment to furnish timely and personalized feedback for EFL students. This, in turn, allows EFL teachers to adjust their teaching management, ultimately achieving the goal of promoting student learning through evaluation.

All in all, the digital era presents both challenges and opportunities for EFL teachers. By actively engaging in professional development, adopting innovative pedagogical approaches, and utilizing digital technologies for teaching, evaluation, and management, educators can significantly enhance the EFL learning experience. Ultimately, the successful integration of digital tools in EFL education depends on teachers' willingness to embrace change and their commitment to ongoing learning and adaptation.

3. Ways to Adapt to the Journey of Digital Literacy

The anticipation of opportunities fosters increased aspiration and motivation for the application of digital information technology in teaching (Donovan *et al.*, 2011) [23]. The integration of technology reshapes the dynamics between educators and learners, along with their respective roles within an educational context (Alshammari *et al.*, 2018) [24].

As facilitators and mediators of digital knowledge and skills, the roles of EFL teachers transcend the mere transmission of subject knowledge. They are instrumental in equipping students with twenty-first-century competencies (Madalińska-Michalak & Bavli, 2018) [25], encompassing digital literacy and preparedness (Godbey, 2018) [26]. In light of the significant shifts in English education brought about by the digital age, EFL teachers should seize emerging opportunities and boldly confront challenges.

3.1. Enhancing EFL Teachers' Readiness for Digital Literacy

In an era where digital education is an irreversible trend, there arises a necessity to explore the willingness of EFL teachers to embrace technology and its integration into their teaching practices. EFL teachers have exhibited a high level of confidence in leveraging digital technology to enhance their teaching, both within and beyond the classroom (Cote & Milliner, 2018) [27]. In response to the identified opportunities for leveraging digital technologies in EFL teaching, a critical first step is enhancing teachers' readiness for digital literacy. This involves a comprehensive understanding and acceptance of technology's role in modern education, grounded in the opportunities for innovative teaching tools, resources, and environments as discussed earlier. EFL teachers' readiness hinges on their confidence and competence in integrating digital tools seamlessly into their teaching practices.

Assessing technology acceptance provides a means of gauging teachers' readiness to integrate new technologies into their educational practices (Scherer *et al.*, 2021) [28]. While EFL teaching extends beyond technical knowledge and skills, affective factors also play a crucial role in the EFL teaching process, including self-efficacy and attention. Moreover, EFL teachers' digital literacy and self-efficacy are subject to variation based on factors like teachers' experience, engagement in ICT training, and the time they invest online (Kahveci, 2021) [29].

Various teacher-related variables, such as professional knowledge, techniques, and affective attributes, contribute to the quality of instruction (Amirian & Behshad, 2016) [30]. Zhang and Kenny (2019) [31] delved into how prior technology experiences, training, and support significantly shaped EFL teachers' digital literacy levels. They unveiled that these factors significantly influenced their proficiency in digital skills. Moreover, EFL teachers' attitudes toward technology usage in instruction were found to be influenced by factors such as their familiarity with technology, their perceptions of its usefulness, and their concerns about potential drawbacks linked to its implementation (Li *et al.*, 2019) [32].

Consequently, in addition to adapting to teaching changes brought about by the shift in digital information technology at the awareness level, EFL teachers also need to actively engage in training and learning concerning digital literacy. EFL teachers can experience a notable improvement in their self-efficacy for integrating technology into their teaching practices after undergoing professional digital literacy training, such as a computer-assisted language learning (CALL) program (Liu & Kleinsasser, 2015) [33]. To achieve this, EFL educators must engage in ongoing professional development, focusing on both the technological aspects of digital tools and their pedagogical applications. Workshops, online courses, and collaboration with peers can provide valuable learning opportunities. Additionally, exposure to case studies showcasing successful integration of digital tools in EFL teaching can serve as both inspiration and a practical guide.

3.2. Refining EFL Teachers' Pedagogical Approach to Digital Literacy

The advent of digital education has ushered in a multitude of diversified, data-driven, and intelligent teaching tools. The dynamic and ever-evolving classroom environment necessitates a flexible approach to pedagogy for teachers (Choi & Lee, 2009) [34]. EFL teachers have demonstrated a positive inclination toward embracing digital literacy in EFL teaching (Pratolo & Solikhati, 2020) [35]. However, challenges have emerged in effectively merging technology with pedagogy and subject-specific instruction (Li, 2022) [36]. The evolution of teaching and learning methods through digital technology, as highlighted in the transformations section, underscores the need for EFL teachers to refine their pedagogical approaches. This refinement involves aligning teaching strategies with the capabilities of digital tools to enhance language learning outcomes.

Furthermore, given the current limitations of artificial intelligence technologies, teaching tools like educational robots cannot fully replace the role of English teachers in the classroom. Merely having access to technological resources doesn't guarantee the seamless integration of technology into lessons (Nuroh *et al.*, 2023) [37]. The rapid pace of technological advancement demands that educators possess not only pedagogical skills but also expertise in utilizing digital media (Tejedor *et al.*, 2020; Tyner, 2011) [38] [39]. Difficulties in operating digital communication tools can disrupt the smooth flow of learning in the digitalization era (Akbar & Anggaraeni, 2017) [40]. Additionally, EFL teachers are expected to compensate for the emotional, moral, and humanistic aspects that AI lacks.

In the realm of EFL teachers' digital literacy in pedagogy, two prominent trends emerge. On one hand, educational systems worldwide are integrating digital skills into their curricula and assessments (Buitrago Flórez *et al.*, 2017; Siddiq *et al.*, 2016) [41] [42]. On the other hand, there is a growing emphasis on encouraging teachers and teacher educators to incorporate technology into their instructional practices, either as a tool for enhancing learning or as a method of formative assessment (Shute & Rahimi, 2017; Straub, 2009) [43] [44]. Teachers should adopt a flexible and adaptive teaching philosophy, incorporating digital tools to foster interactive and student-centered learning environments. This may include blended learning models, flipped classrooms, and the use of digital platforms for collaborative projects. Pedagogical training specific to digital education should focus on innovative approaches that integrate technology without compromising the quality of language instruction.

3.3. Improving EFL Teachers' Teaching Methods on Digital Literacy

As digital technology continues to evolve, EFL teachers confront a fresh array of challenges and pressures (Romeo *et al.*, 2013) [45], particularly regarding their teaching methods. The incorporation of technology in EFL educational contexts

not only facilitates foreign language acquisition among EFL students but also significantly bolsters their motivation levels (Abdulrahman and Basalama, 2019) [46]. The presence or absence of teacher digital literacy can also influence how teachers perceive their students' digital literacy abilities (Cosby *et al.*, 2023) [47].

Contemporary EFL teachers often exhibit confidence in using technology; however, they frequently lack confidence in designing technology-supported learning materials and curricula (Kessler, 2018) [48]. Furthermore, the extent to which teachers integrate technology into their teaching and learning activities remains uncertain. Research studies indicate that the integration of technology is a multifaceted process involving the transformation of education, and the adoption of technological tools in schools varies significantly (Fraillon *et al.*, 2014) [49]. Consequently, enhancing EFL teachers' teaching methods related to digital literacy is a complex process. Bottino (2020) [50] underscores that the integration of technology in education follows two primary directions. First, it involves cultivating competencies and skills in students to prepare them for a society deeply influenced by technological advancements. Second, it entails harnessing digital technologies, methods, and tools to create innovative teaching and learning environments that encourage new pedagogical approaches across different disciplines. The first direction has spurred research into the technical and conceptual competencies necessary for effectively engaging with digital technologies. In contrast, the second direction underscores the transformative potential of digital literacy in reshaping teaching and learning environments, as well as instructional approaches within specific subject areas.

Moreover, EFL teachers should also fully leverage the moral education and ideological functions of English to meet the new requirements and challenges of the digital education era. This includes helping EFL students identify and resist harmful information and cultivate positive values, which are essential components of the fundamental role and educational responsibilities of EFL teachers. EFL teachers also need to design and implement technology-supported learning materials that are engaging and tailored to the needs of their students. This includes leveraging digital assessment tools for personalized feedback and incorporating digital media to enrich the learning experience. Professional development in this area should emphasize the creative and effective use of digital resources, as well as strategies for evaluating and selecting appropriate technologies.

4. Conclusions

Digital literacy introduces transformative changes and presents challenges for educators, encompassing crucial skills, learning methodologies, and educational environments (Peled, 2021) [51]. Consequently, a new era of English education reform has dawned. This article delves into the opportunities and obstacles encountered by EFL teachers in the digital age. The insights gathered can serve as valuable considerations for policymakers looking to enhance school technology

infrastructure and foster heightened engagement in learning.

The primary objective of education has evolved toward equipping students with digital literacy, enabling them to navigate the complexities and dynamics of modern societies (Fraillon *et al.*, 2014) [49]. Teachers possessing advanced digital literacy are more inclined to incorporate technology into their instructional practices (Kwon *et al.*, 2021) [52]. Al-Khatib (2020) [53] investigated the relationship between EFL teachers' digital literacy and their pedagogical approaches, revealing that EFL teachers with proficient digital literacy skills more frequently integrated technology into their teaching methods. These research endeavors provide valuable insights into the convergence of digital literacy and EFL education, underscoring the significance of digital literacy for effective instruction and professional growth.

While digital technology has revolutionized English teaching, there remains a substantial journey ahead to achieve deep integration of digital technology and English education at both practical and theoretical levels. While many teachers favor integrating digital platforms into the classroom, a gap often exists in their pedagogical expertise to effectively combine specific instructional methods with technology (Nuroh *et al.*, 2023) [37]. It is crucial to recognize that relying solely on EFL teachers is insufficient for achieving a profound integration of digital education and English learning.

Hence, fostering cross-cultural and cross-disciplinary collaboration between artificial intelligence professionals and experts in the field of English education is imperative. Insights drawn from foreign academic achievements in artificial intelligence and related fields can identify areas of innovation for the practical application of artificial intelligence in English teaching. This approach will pave the way for deeper integration of digital education and English learning, resulting in an English education system that promotes personalized learning and lifelong development, ultimately advancing English education in the direction of individualization, intelligence, precision, and ecology.

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Conflicts of Interest

The authors declare no conflicts of interest.

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