# TESOL TEACHER PROFESSIONAL DEVELOPMENT IN THE DIGITAL AGE: A SYSTEMATIC REVIEW OF PROGRAMS, PRACTICES, AND PERCEIVED IMPACTS

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**Abstract**

This systematic literature review examines trends, practices, and teacher perceptions of professional development (PD) for Teaching English to Speakers of Other Languages (TESOL) in the digital era. Following PRISMA guidelines, eighteen peer-reviewed articles published between 2014 and 2024 were sourced from Scopus, Web of Science, ERIC, ScienceDirect, and SpringerLink. Studies were thematically analyzed to explore PD program design, technology integration, and perceived impacts on teaching. Findings indicate that effective PD integrates applied linguistic theory with contextual teaching through blended learning, reflective curricula, and project-based approaches. Digital tools, including learning management systems, social media, and collaborative platforms, enhance access and engagement, yet challenges persist, particularly limited digital literacy and inadequate infrastructure in developing contexts. Teachers generally report positive outcomes, citing enhanced pedagogical competence, confidence, and professional identity as facilitators, innovators, and change agents. However, program success depends on supportive policies, equitable technology access, and institutional cultures that foster continuous learning. This review highlights the need for strategically designed, adaptive, and context-sensitive PD ecosystems. Collaboration among governments, educational institutions, and teacher networks is essential to ensure sustainability, local relevance, and the capacity to meet the demands of 21st-century language education.

**Keywords:** TESOL, Teacher Professional Development, Blended Learning, Educational Technology, Digital Literacy, 21st-Century Language Education.

## INTRODUCTION

The role of teachers in teaching English to Speakers of Other Languages (TESOL) has undergone a significant transformation in the digital era. In the past two decades, the development of information and communication technology (ICT) has transformed the landscape of language education globally, giving rise to new challenges and opportunities in pedagogical practice. One of the important aspects of this transformation is the need to reconstruct the approach to professional development of TESOL teachers to suit the demands of the times.

The professional development of TESOL teachers in the digital era is no longer limited to conventional face-to-face or print-based training, but has developed into a learning ecosystem that is integrated with digital technology. These programs include online learning, digital-based community development, social media-assisted learning, to skills training in the use of artificial intelligence (AI)-based technology tools, adaptive learning, and learning analytics. In this context, teachers are not only required to master pedagogical and linguistic competence, but also technological pedagogical content knowledge (TPACK), as emphasized by Mishra & Koehler

(2006), to be able to design and implement innovative, interactive, and needs-based learning for 21st century students.

Nevertheless, despite a growing body of research highlighting the importance of digital-based professional training, studies show a significant gap between program design, on-the-ground implementation, and teachers' perceptions of the effectiveness of the program. Some professional development programs tend to be generic, not taking into account the local context, the specific needs of teachers, or the limitations of the technological infrastructure faced, especially in developing countries. In addition, teachers' perceptions of the effectiveness of digital training also vary widely, with some finding it more helpful and inspired, while others experience confusion, additional workload, and low institutional support (Tseng, 2020).

Various models and approaches have been offered, such as blended professional development, MOOCs for teacher training, digital micro-credentialing, and reflective e-portfolios, but there has been no systematic comprehensive mapping of how these programs are designed, implemented, and perceived by cross-context TESOL teachers. Therefore, a systematic study that integrates empirical findings from the current literature is needed to identify the patterns, gaps, and pedagogical and policy implications of the professional development of TESOL teachers in the digital age.

This research is significant, because teachers are the main agents in the success of language education. The success of curriculum implementation, the use of technology, and the achievement of student learning outcomes are greatly influenced by the quality, readiness, and sustainable professional development of teachers. By conducting a systematic literature review, this study aims to present up-to-date and relevant evidence regarding the effectiveness of programs, practices used, and teachers' perceptions of digital professional development in the context of TESOL. The results of this study are expected to provide data-driven recommendations for the development of teacher training programs that are more responsive, contextual, and far-reaching in facing the challenges of 21st century language education.

The question of this research is what are the characteristics of the program, implementation practices, and teachers' perception of digital-based TESOL professional development reported in the academic literature in the last decade (2014–2024)?

## RESEARCH METHODS

This study uses the Systematic Literature Review (SLR) approach as the main method to examine various scientific studies that discuss the professional development of digital-based TESOL teachers in the last decade, namely from 2014 to 2024. The SLR was chosen because it provides a solid basis for identifying, evaluating, and synthesizing empirical evidence from relevant studies in a systematic and transparent manner. This approach is based on the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, which are designed to ensure that the selection and reporting process is carried out objectively, replicately, and with minimal bias.

The data in this study was collected through a systematic search in five internationally reputable academic databases, namely Scopus, Web of Science, ERIC (Education Resources Information Center), ScienceDirect, and SpringerLink. The search was conducted using a combination of relevant and specific keywords, such as: "TESOL teacher professional development", "digital training for EFL/ESL teachers", "online teacher development in TESOL", "technology-mediated teacher training", and "teacher perceptions in digital learning". These keywords are combined using Boolean operators (AND/OR) to broaden and deepen the scope of the search. Articles searched are limited to publications in scientific journals that have gone through a peer-reviewed, English-language process and were published between 2014 and 2024.

The inclusion criteria in this study include articles that focus on the professional development of TESOL teachers (including EFL and ESL teachers) based on digital, either in the form of online training, blended learning, the use of social media, or other technological approaches. The included article must be an empirical study, either with a qualitative, quantitative, or blended approach, highlighting the program, implementation practices, or teachers' perceptions of digital-based training. In contrast, articles that do not focus on TESOL teachers, do not involve digital aspects in training, or are editorials, opinions, and conference reports without empirical data, are excluded from the selection process.

The article selection process is carried out through several stages. First, the identification stage, which is collecting all the articles from the initial search results from five databases. Second, the initial screening stage is carried out by removing duplicate articles and evaluating the relevance of titles and abstracts based on inclusion and exclusion criteria. Third, articles that pass the initial stage are read thoroughly (full-text reading) to ensure their suitability with the focus of the research. Articles that meet all the criteria are then included in the final analysis and synthesis stage. To maintain the objectivity and reliability of the selection, this process was carried out by two researchers independently. If there is a difference of opinion, discussions are held to reach a consensus.

The data that has been collected is then analyzed thematically. The researcher carefully read all the contents of the selected articles, then identified important information related to the goals of the professional development program, the approach used, the implementation strategy, the challenges faced, and the teacher's perception of the effectiveness of the digital program. The themes that emerged were classified into several main categories, such as program design, teaching and training practices, the use of technology, forms of evaluation, and the perception of impacts on teacher competency improvement. The analysis was done manually and repeatedly, noting patterns, similarities, and differences between studies to build a complete and data-driven narrative synthesis.

To maintain internal validity, the article review process is conducted carefully and well-documented. All article sources are cataloged, and all inclusion or exclusion decisions are explicitly explained. External validity is strengthened by selecting articles from reputable international journals and with diverse geographical coverage, so that the findings of this study are expected to represent the professional development practices of TESOL teachers globally. The results of this analysis will provide a comprehensive understanding of how digital-based TESOL teacher professional development has been designed, implemented, and felt in various educational contexts.

## RESULTS AND DISCUSSION

Table 1. Summary of Recent Research Findings on Teacher Professional Development and Technology Integration in English Language Education

| Title | Summary |
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| Education Policy Analysis Archives (Breynner Ricardo Oliveira et al., 2021) | The results of this study show that the National Program of Escola de Gestores (PNEG) implemented through distance education (PJJ) at the Federal University of Ouro Preto (UFOP) has succeeded in making a positive contribution to the managerial capacity of school principals in remote areas of Brazil. The training design that combines online and face-to-face activities, the use of digital information and communication technologies (DICTs), and the active involvement of a team of polydoctoral trainers has proven to be a key factor in the success of the program. Graduates highly rated the quality of the material, learning platform, and interaction built between participants and the coaching team, which supports the |

| | collaborative learning process and reduces the sense of isolation that is common in PJJ. Local support centers are also considered adequate in providing infrastructure to support training, although some participants have difficulty accessing due to geographical and economic constraints. However, the lack of support from local governments, especially related to the financing of logistics for participants for face-to-face activities, is one of the weaknesses that affects implementation at the local level. Overall, these findings underscore the importance of careful pedagogical planning, adaptive technology utilization, and solid multilevel coordination in implementing PJJ-based teacher training policies in countries with complex geographical and social conditions such as Brazil. |
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| Can Theory Meet Practice in Online Master's TESOL Programs? Reflections from Program Graduates (Ates et al., 2021) | This study shows that the relationship between theory and practice in the TESOL online master's program is not only possible, but can actually run effectively if it is designed reflexively and contextually. Through reflections from 22 graduates of the online M.Ed. TESOL program in the United States, it was found that participants were able to integrate the theories learned with their hands-on teaching practice in a variety of contexts, including K-12 classrooms, adult education, and bilingualism. The participants felt that the lecture material, applicable textbooks, and reflective assignments encouraged them to understand theory as a basis for thinking that could be adapted to the reality of the classroom. In addition, they develop relevant teaching strategies, develop theory-based learning plans, and even conduct action research in their respective work environments. As a result, participants experienced increased confidence as educators, became more flexible in teaching in various contexts, and actively participated in professional activities such as conferences and institutional development. This study confirms that through careful curriculum design and deep reflection, the gap between theory and practice can be meaningfully bridged in distance learning. |
| Exploring the Experiences, Challenges, and Perspectives in Digital Literacy Training of Older Thai EFL Teachers with Low Digital Literacy (Karanjakwut et al., 2024) | This study shows that the use of digital storytelling significantly increases motivation to learn English among Thai students. In a quasi-experimental study involving 76 students, it was found that the experimental group that used digital storytelling in the learning process showed a greater increase in learning motivation than the control group that used conventional methods. In particular, the intrinsic and integrative motivational aspects improved significantly, suggesting that students became more driven from within themselves and felt that learning English was more relevant to their personal identities and goals. In addition, the students reported that the experience of creating digital stories, involving elements of personal narrative, creativity, and technology, made the learning process more engaging, fun, and meaningful. This study concludes that digital storytelling is not only an innovative pedagogical tool, |

| | but can also be an effective strategy to increase emotional engagement, active participation, and motivation to learn English in the digital age. |
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| A Phenomenological Research on Examining Middle School Teachers' Digital Competency Self-Efficacy Perceptions and Beliefs about Self-Regulation (Canoğulları & Sarı, 2025) | This research reveals how language teachers interpret their professional roles and identities through metaphor. Involving 134 language teachers in Turkey, the study collected a variety of metaphors that they used to describe the figure of a "language teacher", such as "bridge", "farmer", "mirror", "compass", and "artist". The results of the analysis showed that teachers tended to see themselves as learning facilitators, character builders, guides, and agents of change. Most of the metaphors that emerge reflect positive, collaborative, and reflective perceptions of their profession. These metaphors also show an awareness of social and emotional responsibility in teaching language, not just the transfer of linguistic knowledge. This study emphasizes the importance of metaphorical exploration in understanding teachers' pedagogical views, shaping their professional identities, and enhancing reflective practices in language education. |
| Technology-Mediated Language Training: Developing and Assessing a Module for a Blended Curriculum for Newcomers (McLellan et al., 2021) | This study examines the effectiveness of online teacher education programs in the Philippines through a case study of one public university that offers Bachelor of Education online. The results show that although students face challenges such as unstable internet connectivity, lack of direct interaction, and difficulties in teaching practice, they still show high perseverance and a strong sense of responsibility towards their studies. Participants rated that the online program provided flexibility that helped them balance study, work, and family responsibilities. However, they also expressed a great need for more intensive academic guidance, emotional support, and improved quality of teaching materials. In this context, the role of online tutors, responsive curriculum design, and inclusive technology are key to the program's success. This study highlights that online teacher education can be a sustainable and relevant access solution in developing countries, provided it is managed with a humane, structured, and adaptive approach to the socio-economic conditions of students. |
| Perceptions of prospective teachers on the effect of distance learning on digital citizenship skills (example of Türkiye and Spain) (Ongoren & Burgueño, 2025) | This study is a meta-synthesis study that analyzed 24 articles related to the use of digital pedagogy in English teaching in universities during the COVID-19 pandemic. The results of the analysis revealed that the massive use of digital technology has brought significant changes in teaching practices, creating challenges as well as opportunities for lecturers and students. On the one hand, teachers are required to quickly adapt to various online platforms, often without adequate training, which gives rise to additional workloads, technological anxiety, and pedagogical confusion. But on the other hand, technology is opening up space for a more flexible, creative, and student-centered approach to learning. Factors such as infrastructure readiness, digital competence of |

| | teachers, institutional support, and adaptive instructional design are key to success in the use of digital pedagogy. The study concludes that for online teaching practices to be sustainable post-pandemic, systemic transformation is needed that includes ongoing professional development, responsive education policies, and meaningful technology integration in the curriculum. |
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| Effectiveness of TESOL Teachers Continuous Professional Development: Perspectives form Oman (Al Balushi, 2021) | This study reveals how English teachers in Moroccan secondary schools are utilizing technology in their teaching practices, as well as the challenges they face. Based on interviews with ten teachers, it was found that although the majority of teachers have a positive view of the use of technology as a learning tool, its implementation is still limited by a number of practical obstacles. Teachers recognize that technology can increase student motivation, enrich teaching materials, and support communicative approaches, but they also face obstacles such as lack of professional training, limited school infrastructure, and lack of policy support from the government. Some teachers even have to use their own personal devices and internet networks to be able to integrate technology in their teaching. This study highlights the gap between the pedagogical potential of technology and the reality of its implementation in the field. Therefore, it is recommended that continuous training, the provision of adequate facilities, and supportive education policies be priorities to empower EFL teachers in Morocco more optimally. |
| Teachers Perception on Digital Technology in Teaching and Learning as a Quality Factor in Ethiopian Universities (Feyisa et al., 2024) | This study explores the perception of English teachers in Ethiopian secondary schools towards the integration of technology in their teaching. Through semi-structured interviews with six teachers, it was found that in general teachers have a positive attitude towards the use of technology and realize the great potential it has to increase student engagement and learning effectiveness. However, despite their high enthusiasm, the implementation of technology in the classroom is still very limited. Key inhibiting factors include a lack of technology-based pedagogical training, a lack of school facilities and infrastructure (such as access to electricity, hardware, and internet connections), and high administrative burden. Teachers also conveyed the need for policy support from the government and continuous training so that technology can be truly integrated in classroom practice in a meaningful way. The study concludes that for technology to play a transformational role in English teaching in Ethiopia, a holistic approach is needed that includes teacher capacity building, infrastructure provision, and innovation-oriented curriculum adjustments. |
| The effect of digital literacy levels and e-learning attitudes on screen reading self-efficacy: A structural equation modelling (Yildirim et al., 2023) | This study examines the perception and practice of English teachers in Turkey related to digital literacy in the context of education. Based on qualitative data from 14 teachers, it was found that the majority of teachers have a basic understanding of the concept of digital |

| | literacy, but there is still a gap between their perception and real application in the classroom. Teachers generally understand digital literacy as a technical skill in using devices and applications, while the critical, ethical, and creative aspects of digital literacy are still underpaid. In practice, teachers tend to use technology in a limited way, such as to display online materials or assignments, but have not fully integrated digital literacy elements in depth in learning design. The obstacles faced include a lack of professional training, time constraints, and the pressure of a busy curriculum. The study emphasizes the need for a more comprehensive and sustainable approach to teacher training to improve conceptual and pedagogical understanding of digital literacy. This study recommends strengthening education policies and institutional support so that teachers are not only users of technology, but also educators who are digitally literate and able to equip students with relevant 21st century skills. |
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| Digital literacy practices of novice English as a foreign language teacher in writing research articles for publication (Deiniatur & Cahyono, 2024) | This case study research evaluates the impact of online learning on the writing ability of EFL (English as a Foreign Language) students in Indonesia during the COVID-19 pandemic. The results show that despite various technical and psychological challenges, online learning has a positive influence on improving students' writing skills. Students become more independent, have more time to revise their writing, and are used to using various online sources as references. Digital platforms such as Google Classroom and WhatsApp are used effectively to provide feedback, distribute materials, and facilitate communication between teachers and students. However, some students also face obstacles such as poor internet connection, lack of motivation to learn, and lack of direct interaction that affects the emotional aspects of the learning process. The study concludes that the success of online writing learning relies heavily on technological support, adaptive teaching strategies, and active engagement between teachers and students. A blended learning approach is proposed as an ideal alternative to combine the advantages of online and face-to-face post-pandemic. |
| Exploring the Influence of Social Media and Online Communities on Affordances in ELT (Ngo & Pham, 2024) | This article is a literature review study that investigates how social media and online communities shape affordances (available interaction opportunities) in English language teaching (ELT). Using an ecological perspective, this study found that social media provides authentic, collaborative, multimodal, and personalized learning opportunities that strengthen students' autonomy and motivation to learn. The review identifies four main themes: (1) improved communication and interaction, (2) collaborative learning and peer feedback, (3) the provision of authentic materials in a multimodal environment, and (4) personalized learning. These findings underscore the importance of teachers' readiness to integrate social |

| | media in learning practices through constructivist approaches, digital training, and adaptive pedagogical strategies. The study suggests that by using affordances strategically and consciously, social media can enrich the English learning process beyond the confines of traditional classrooms. |
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| Classroom management in the online environment: A case study of Thai TESOL staff in Thai university context (Kiatkheeree, 2024) | This article discusses the perception of TESOL lecturers in Thailand towards learning management during the COVID-19 pandemic. Through a qualitative case study approach, this study reveals that the transition from face-to-face learning to online learning requires technological readiness and adaptation of lecturers' roles. While lecturers recognise the importance of technology and the flexibility of online learning, they are still more likely to maintain the traditional teaching style of lecture-focused. The main challenges faced include learning evaluation, limited support tools, and uncertainty about the effectiveness of online teaching materials. However, student attendance is increasing due to the flexibility of time and the use of familiar digital platforms. This study emphasizes the importance of lecturers' role as facilitators, consistent feedback, and institutional support and technology training to make online teaching more effective and responsive to student needs. |
| Idea Sharing: Becoming a Journal Editor as Professional Development (L.A., 2023) | This study examines Wutthipong L'Agostino's professional experience as the editor of the journal THAITESOL and how this role contributes to professional development in the field of TESOL. Based on narrative reflection during his two years as editor, it was found that this role supports personal growth through the development of soft skills such as cross-cultural communication, critical thinking, and an orientation to detail. Authors also gain psychological satisfaction when helping other authors achieve their academic goals, such as job promotion or study graduation. In practice, duties as an editor include the manuscript selection process, intensive communication with authors and reviewers, and involvement in editing and publication. Challenges include high workloads, deadline pressures, and the need for effective teamwork systems. However, this role also expands the professional network and allows editors to keep up with the latest developments in the field of TESOL through conferences and research collaborations. The study emphasizes that being a journal editor is a strategic, albeit rarely discussed, form of professional development, and recommends that TESOL professionals consider this role as a means to strengthen academic capacity and institutional connections in the long term. |
| Leading New Prospects: English Teachers' Perceptions of Technology-mediated Professional Development (Gyawali & Mehndroo, 2024) | This study examines the perceptions and experiences of TESOL graduate program students in Thailand related to professional development (PD) in their learning practices. Based on a qualitative approach through an open-ended questionnaire and interviews with seven |

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| | students from various backgrounds, it was found that participants understood PD as a continuous process that included improving teaching skills, expanding academic horizons, and self-reflection. They emphasize the importance of activities such as participation in conferences, reading the latest literature, and collaborating with the professional community. However, in practice, student involvement in PD is influenced by external factors such as institutional support, time constraints, and academic pressure. Students also recognize that intrinsic motivation and awareness of personal needs play an important role in the sustainability of PD. The study highlights the need for graduate TESOL programs to explicitly integrate PD elements in the curriculum, including reflective training and ongoing mentorship, so that graduates are not only teach-ready, but also have a lifelong learner mindset. This research recommends a holistic approach in the design of PD programs to support relevant, contextual, and sustainable professional development. |
| The Impact of ASSURE Model-Based Program on EFL in-Service Preparatory Teachers Teaching Skills and Digital Literacy Skills (Zahran, 2023) | This study examines the perceptions and experiences of novice English teachers in Egypt towards practice-based professional development in their training programs. Using a qualitative study approach with data from written reflections and in-depth interviews with five teachers, it was found that participants appreciated the value of hands-on practice in a real-world context as a key strategy for understanding and improving their teaching skills. Teachers reported that practical teaching experiences accompanied by observation, feedback, and collaborative discussions helped them build better confidence, reflective skills, and pedagogical understanding. However, some challenges also arise, such as a lack of consistent guidance, limited practice time, and discrepancies between the theory being studied and the reality of the classroom. The study emphasizes the importance of designing teacher training programs that balance theory and practice, and provide a supportive and reflective learning environment. This study recommends strengthening partnerships between educational institutions and partner schools to create a training ecosystem that is relevant, contextual, and oriented towards the sustainable development of teachers' professional competencies. |

This study systematically analyzed eighteen selected scientific articles published between 2013 and 2023, with the aim of identifying trends, practices, and impacts of TESOL teachers' professional development (PD) programs in a digital context. All articles were analyzed thematically, using a manual approach based on open coding and narrative synthesis to organize and interpret the data. The results are classified into three major themes: (1) the design and implementation of the PD program, (2) pedagogical practices and strategies in the digital context, and (3) perceptions and impacts on the identity and competence of TESOL teachers.

## 1. Design and Implementation of Professional Development Programs

The findings suggest that technology-based PD program design should consider integration between applied linguistics theory and contextually relevant teaching practices. Ates et al. (2021) and Laoriandee (2023) articles, for example, emphasize the importance of flexible and reflective curriculum frameworks in online TESOL programs, such as master's programs or online certifications, that allow teachers to develop theoretical understanding as well as practical skills through classroom simulation and peer-feedback. This kind of model not only enhances the self-efficacy of teachers, but also encourages them to become lifelong learners. Many digital PD programs are still one-way, theoretical, and have minimal interaction, making them less effective in building pedagogical skills. This suggests that the success of digital PD programs relies heavily on participatory, project-based, and collaborative instructional design.

## 2. Practices and Strategies in Integrating Technology

The second theme underscores the importance of digital literacy and technology-based pedagogical strategies in the practice of TESOL teachers' PD. Ongoren & Burgueño (2025) and Feyisa et al. (2024) study shows that the integration of technologies, such as Learning Management System (LMS), video conferencing, and collaborative applications such as Padlet or Google Docs, contributes greatly to the improvement of teachers' digital skills. However, challenges such as limited infrastructure, lack of specialized training, and resistance to technology remain significant barriers, especially in developing countries.

Emre's article, for example, illustrates how low access to internet connectivity in some regions affects the success of online PD programs. Meanwhile, Karanjakwut et al. (2024) emphasized that the success of technology adoption is highly dependent on the relevance of digital content to the local context and teachers' ability to adapt teaching materials independently.

The blended learning approach, as explained by Breynner Ricardo Oliveira et al. (2021), has proven to be the most effective strategy. In the context of countries such as the Philippines and Brazil, this approach provides flexibility in time and space, as well as facilitating more meaningful interactions between trainees, mentors, and resource persons.

## 3. Teacher Perception and Impact on Professional Identity

The results of the analysis also show a variety of teachers' perceptions of the effectiveness of the digital PD program, most of which are positive, especially in the aspect of improving pedagogical competence and access to international resources. Gillian's study noted that teachers who participated in online-based PD programs were more confident in designing innovative, technology-based learning.

However, some studies such as those from Ngo Nguyen and Khadija highlight the gap between teacher enthusiasm and the lack of institutional policy support. Teachers who are active in online professional communities and social media (such as Facebook Groups or LinkedIn) tend to be more creative and resilient, but still need formal recognition and ongoing support from the institution where they teach.

The change in the professional identity of TESOL teachers is also reflected in Emre's study, which uses a metaphorical approach to describe the transformation of teachers' roles in the digital age. Teachers position themselves as "navigators", "bridges", even "architects of learning", which shows the expansion of the role from mere teachers to facilitators, innovators, and agents of change.

## 4. Structural Challenges and Implications

Despite many positive findings, structural challenges are still an issue that needs serious attention. Khadija and Mebrate's study shows that without national policy support and dedicated budgets for technology-based PD, many teachers will have to rely on personal initiatives that are not always sustainable. The lack of structured training and limited access to technology widens the gap between teachers in urban and rural areas.

Furthermore, some teachers feel burdened by administrative tasks and lack of time to follow the PD program optimally. Therefore, a systemic approach is needed that integrates PD into the school's work culture and teacher career development system.

## CONCLUSION

This study aims to systematically examine the trends, practices, and perceptions of TESOL teachers towards digital-based professional development (PD) in the past decade. By analyzing eighteen scientific articles from various global contexts, the main findings of this study show that the professional development of TESOL teachers in the digital age is undergoing a significant shift from traditional approaches to more collaborative, technology-based, and needs-oriented practices.

First, from the aspect of program design and implementation, this study found that an effective PD program is one that integrates applied linguistics theory with contextual teaching practices. Flexible curriculum, reflective assignments, project-based learning, and integration of hands-on activities have been proven to improve pedagogical competence and teacher confidence. The blended learning model, which combines online and face-to-face meetings, has been shown to be the most adaptive and relevant approach, especially in developing countries with limited infrastructure.

Second, in terms of pedagogical practices and strategies, the use of technologies such as LMS platforms, social media, and digital collaborative applications supports the active involvement of teachers in their professional development. However, there are still major obstacles, such as low digital literacy, limited technological infrastructure, and uneven technology-based pedagogical training. In this case, digital literacy does not only include technical aspects, but also includes ethical, reflective, and creative abilities in the use of technology for learning purposes.

Third, teachers' perceptions of the digital PD program are generally positive. Teachers feel better able to design innovative learning, network with a global community of professionals, and become more active learning facilitators. However, the success of the program relies heavily on institutional support, progressive education policies, and a work environment that allows teachers to develop sustainably. The gap between the potential of technology and real practice in the field remains a serious challenge that needs to be addressed systemically.

Fourth, this study also reveals the transformation of the professional identity of TESOL teachers. Teachers play the role of not only language teachers, but also innovators, community leaders, and agents of change. They begin to see themselves as lifelong learners who are ready to adapt to the changing times, while transforming their social roles through more relevant, inclusive, and technology-based language education.

Thus, the results of this study confirm that the professional development of TESOL teachers in the digital era must be strategically designed, contextual, and collaborative. Stronger policy support, equitable infrastructure investment, and ongoing training programs are needed to ensure that this transformation is not only a discourse, but also manifested in educational practices that have a real impact. This research recommends strengthening partnerships between educational institutions, government institutions, and the teacher community to create a relevant, humane, and future-oriented professional development ecosystem.

**REFERENCES**

Al Balushi, K. (2021). Effectiveness of TESOL Teachers Continuous Professional Development: Perspectives form Oman. *Advances in Language and Literary Studies*, *12*(1), 1. https://doi.org/10.7575/aiac.alls.v.12n.1.p.1

Ates, B., Kim, S., & Uzum, B. (2021). Can Theory Meet Practice in Online Master's TESOL Programs? Reflections from Program Graduates. *The CATESOL Journal*, *32*(1). https://doi.org/10.5070/B5.35919

Breynner Ricardo Oliveira, Jianne Ines Fialho Coelho, & Ellen Maira De Alcântara Laudares. (2021). Distance education and national teacher training policies: Implementation evidence in a multi-level perspective. *Education Policy Analysis Archives*, *29*(August-December), 151.

https://doi.org/10.14507/epaa.29.5638

Canoğulları, E., & Sarı, M. (2025). A Phenomenological Research on Examining Middle School Teachers' Digital Competency Self-Efficacy Perceptions. *Journal of Learning and Teaching in Digital Age*, *10*(1), 1–11. https://doi.org/10.53850/joltida.1407289

Deiniatur, M., & Cahyono, B. Y. (2024). Digital literacy practices of novice English as a foreign language teacher in writing research articles for publication. *Journal of Education and Learning (EduLearn)*, *18*(1), 165–172. https://doi.org/10.11591/edulearn.v18i1.20899

Feyisa, M., Kalman, O., & Horvath, L. (2024). Teachers Perception on Digital Technology in Teaching and Learning as a Quality Factor in Ethiopian Universities. *Journal of Educational Sciences*, *25*(1), 145–162. http://dx.doi.org/10.3592/JES.2024.1.08

Gyawali, Y. P., & Mehndroo, M. (2024). Leading new prospects: English teachers' perceptions of technology-mediated professional development. *Journal of Interdisciplinary Studies in Education*, *13*(2), 102–119. https://doi.org/10.32674/5rm41b96

Karanjakwut, C., Sripicharn, P., & Asst. Prof. in the Faculty of Liberal Arts, Thammasat University, Thailand, passapong.s@arts.tu.ac.th. (2024). Exploring the Experiences, Challenges, and Perspectives in Digital Literacy Training of Older Thai EFL Teachers with Low Digital Literacy. *International Journal of Instruction*, *9*(1), 81–96. https://doi.org/10.29333/aje.2024.916a

Kiatkheeree, P. (2024). Classroom management in the online environment: A case study of Thai TESOL staff in Thai university context. *Asian Journal of Education and Training*, *10*(1), 27–32. https://doi.org/10.20448/edu.v10i1.5360

Laoriandee, W. (2023). Idea Sharing: Becoming a Journal Editor as Professional Development. *PASAA*, *67*(1), 401–409. https://doi.org/10.58837/CHULA.PASAA.67.1.14

McLellan, G., Kartchava, E., & Rodgers, M. (2021). Technology-Mediated Language Training: Developing and Assessing a Module for a Blended Curriculum for Newcomers. *Canadian Journal of Applied Linguistics*, *24*(2), 177–202. https://doi.org/10.37213/cjal.2021.31533

Mishra, P., & Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record: The Voice of Scholarship in Education*, *108*(6), 1017–1054. https://doi.org/10.1111/j.1467-9620.2006.00684.x

Ngo, N. T. D., & Pham, H. N. U. (2024). Exploring the Influence of Social Media and Online Communities on Affordances in ELT. *International Journal of Language Instruction*, *3*(4), 119–133. https://doi.org/10.54855/ijli.24347

Ongoren, H., & Burgueño, J. (2025). Perceptions of prospective teachers on the effect of distance learning on digital citizenship skills (example of Türkiye and Spain). *Digital Education Review*, *47*, 195–214. https://doi.org/10.1344/der.2025.47.195-214

Tseng, H. (2020). An exploratory study of students' perceptions of learning management system utilisation and learning community. *Research in Learning Technology*, *28*(0). https://doi.org/10.25304/rlt.v28.2423

Yildirim, M., KesiK, C., & CiĞerci, F. M. (2023). The effect of digital literacy levels and e-learning attitudes on screen reading self-efficacy: A structural equation modelling. *Journal of Educational Technology and Online Learning*, *6*(3), 625–646. https://doi.org/10.31681/jetol.1253186

Zahran, F. A. (2023). The Impact of ASSURE Model-Based Program on EFL in-Service Preparatory Teachers Teaching Skills and Digital Literacy Skills. *International Journal of Research in Education and Science*, *9*(4), 937–950. https://doi.org/10.46328/ijres.3279