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Digital Tools in English Language Learning: Navigating Strategies and Challenges

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Abstract

This systematic literature review explores the strategies and challenges involved in integrating technology into the English learning process, with a focus on the perspectives of teachers and students. Although many studies have highlighted the benefits of technology in English teaching and learning, systematic reviews that compile strategies and challenges from both teacher and student perspectives are still limited. Both perspectives are crucial, as teachers determine pedagogical implementation and students respond to technology in learning practice. This study analyzes17 peer-reviewed journal articles published between 2022 and 2025and synthesizing key findings on how strategies and challenges of digital tools in English language teaching and learning. These studies reveal that technology offers substantial benefits such as increased engagement, creativity, and accessibility, but its implementation faces various obstacles. These obstacles include limited ICT proficiency, insufficient administrative and technical support, infrastructure deficiencies (particularly in rural settings), low levels of digital literacy, student autonomy issues, and concerns over academic integrity. Educators have adopted adaptive strategies including ongoing professional development, peer collaboration, reflective teaching practices, and blended learning models to address these barriers, while the students form peer support networks to improve their digital learning experiences. This review highlights the importance of a comprehensive, multi-level approach that combines individual skill development with systemic infrastructure, policy support, and inclusive educational practices. In conclusion, this review calls for a shift from mere technology adoption to a deeper pedagogical transformation.

Keywords: *Challenges, Education, Technology Integration, Strategies*

INTRODUCTION

The complexity of the challenges and demands of the education sector in the current era of globalization and digitalization consists of the effectiveness of digital technology integration, the need to resolve the digital divide, and the redesign of teaching approaches carried out to meet the demands of 21st-century learning. Education is simply an effort to convey knowledge ideas in a traditional way but also equips students so that later students can become individuals who are able to think critically and adapt to changing times. A depiction of the evolution of education through digital transformation is seen in the evolution of education from 1.0 to 4.0, where current learning emphasizes collaboration, smart technology, and personalized learning in response to global social and technological changes (Makrides, 2019; Joseph et al., 2024). This makes digital transformation a strategic necessity rather than a technical alternative, because the education system is required to be able to adapt to remain relevant and responsive to the needs of digital learners (Abedi, 2024; Taşdere et al., 2024; Mishra & Koehler, 2006).

Technology provides a variety of tools and resources that support not only the delivery of learning but also the development of skills considered essential for students in the 21st century, such as collaboration, creativity, and critical thinking. By utilizing interactive platforms, digital simulations, and communication-based applications, students are encouraged to collaborate on projects, solve problems creatively, and actively think critically, reflecting real-world situations. These tools create an active learning environment where students are participants rather than passive recipients of knowledge. Through the application of technology in classroom learning activities, it is hoped that there will be an increase in the relevance and effectiveness of the learning experiences that students gain (Hanif et al., 2023). Technology has been considered an important component in promoting foreign language proficiency, particularly English as a Second Language (ESL) and English as a Foreign Language (EFL) (Ahmadi, 2018). This is because innovation in the technology sector continues to occur rapidly, educators are required to adjust the teaching methods they apply to ensure that the integration carried out is effective for implementation in the kepas environment (Sudarsana et al., 2019; Mishra & Koehler, 2006).

Nowadays, teachers are expected to be able to use technology into their pedagogical framework, this aims to encourage effectiveness in learning and digital literacy, and also student participation supported through global education reform and curriculum standards that focus more on 21st century skills and utilize technology in competency tests and teaching innovations (Ghavifekr & Rosdy, 2015; Sudarsana et al., 2019; Koehler, Mishra, & Cain, 2013). However, this is interpreted as a big challenge, where teachers are required to be able to handle pedagogical, technical, and contextual issues in their teaching process.

The use of technology in the education sector is still widely studied today, there are still various limitations of research that comprehensively integrates discussions related to the challenges and strategies applied in implementing digital tools effectively, especially in English language learning. In addition, a number of studies related to the use of technology in learning planning, such as research conducted by (Hooper & Rieber, 1995) and other studies that focus on the challenges of technology integration (Jose & Jose, 2024), only discuss the dual perspectives in implementing technology strategically and practical obstacles in the learning process that is carried out. Research conducted by (Heriyanto et al., 2025) related to the integration of ICT in English teaching and research conducted by (Khatimah, H, 2023) which examines digital innovation in English language education, each illustrates that against individual benefits and challenges but does not simultaneously analyze these with strategies and obstacles based on the perspectives of teachers and students. This research gap certainly requires further research on how technology can be adopted, maintained, and improved effectively in various learning environments.

A systematic literature review was conducted to address this research gap. Rather than a scoping review, this study employed a systematic approach, a more rigorous,

transparent, and replicable process, to synthesize the evidence obtained (Grant & Booth, 2009). The research questions were: (1) What challenges do educators and students face in integrating technology into the English language learning process? and (2) What strategies are recommended or can be implemented to address these challenges and thus improve educational delivery?

METHODOLOGY

The application of the systematic literature review (SLR) method is because this method can provide a systematic, transparent, and replicable approach to evaluate and synthesize empirical evidence based on various digital education contexts (Grant & Booth, 2009). Furthermore, SLR encourages researchers to identify challenges and strategies and provide critical analysis of knowledge gaps that are still found in the practice of technology integration in English classes. The methodology is considered effective in evaluating technology-based education policies, especially those related to distance, hybrid, or AR/VR-based learning (Mohd et al., 2024; Cheng & Tsai, 2013). The publication period selected in this study is 2022 to 2025, this aims to interpret the surge in literature related to technology integration after the COVID-19 pandemic, when all institutions in the education sector are trying to increase the rate of digital technology adoption. The literature collected during this period also illustrates significant changes in the education sector, with a greater focus on online learning, digitalization policies, and efforts to improve the capacity of teachers and students in virtual learning environments (Joseph et al., 2024; Abedi, 2024). This focus is also relevant to this study because it reflects contemporary challenges such as the digital divide, technology anxiety, and the need for higher digital literacy (Alqurashi, 2019; Taşdere et al., 2024). The method applied in this study is a systematic literature review (SLR), which is used to synthesize empirical evidence related to technology integration in the learning process. Systematic reviews can demonstrate a transparent, replicable, and comprehensive approach to evaluating research findings, providing answers to specific research questions through the identification, assessment, and synthesis of all research relevant to a particular topic (Lame, 2019). The use of this method is carried out because it is able to describe the latest knowledge in a structured and effective manner. This method was chosen to provide a structured overview of current knowledge and to critically assess the challenges and strategies involved in using digital tools in English language learning.

1. Eligibility Criteria

The inclusion criteria for this study were peer-reviewed empirical journal articles published between 2022 and 2025, written in English, and sourced from the Scopus database. The selected studies were required to examine the role of technology in teaching and learning, particularly in ESL/EFL contexts.

The inclusion criteria were applied to ensure the relevance, credibility, and quality of the studies that this research determined. First, limiting the review to peer-reviewed

empirical journal articles was done to ensure that the research used was based on systematic research methods and had been academically reviewed, this aims to increase the level of reliability of the research findings. Limiting the research period to 2022–2025 aims to ensure that this review reflects the latest developments and new trends emerging when using technology in ESL/EFL teaching and learning, which is a rapidly growing sector. By determining articles written in English, this review seeks to maintain consistency and prevent misunderstandings that may occur due to translation. In addition, this study focuses on Scopus-indexed research, this aims to ensure that the sources used come from reliable and comprehensive platforms so that they focus on academic quality. Because this study aims to describe strategies and challenges in the use of digital tools in English learning, Scopus coverage is very useful. Scopus has a global perspective and the contexts presented are also diverse in terms of ESL/EFL teaching. This has encouraged several researchers to carry out analyses that allow researchers to critically analyze how digital tools are applied in different cultural, institutional, and technological environments (Mongeon & Paul-Hus, 2016).

Table 1. ***Criteria of Inclusion***

Criteria	Inclusion	Exclusion
Date	Papers from 2022 to 2025 are included	Papers before 2022 are excluded
Language	English	Non-English
Publication	Peer-reviewed empirical research journal articles	Non-peer-reviewed articles and books excluded
Setting	Papers focusing on the Role of Technology in Learning and Teaching Process	Papers that focus on Role of Technology in in Lesson planning
Database	SCOPUS	Other database

2. Study Selection

The literature review was conducted on Scopus-indexed research using previously determined keywords. The following details the keywords used, as shown in Table 2.

Table 2. ***Database and Keyword***

Database	Keyword	Results
SCOPUS	Scopus (role OR use) (technology OR ict OR "technological tool" OR "digital tool") AND ("learning processes" OR learning OR "learning process") AND (esl OR efl OR english) AND (challenge OR difficult OR strategies OR strategy or tackle)	321

The keywording of a broad range of research was focused and relevant to the research objectives. The use of the terms "role OR use" emphasized that the search identified studies that examined both the functional purpose of technology and its practical application in educational contexts. The combination "technology OR ICT OR 'technological tools' OR 'digital tools'" was applied to assess the wide range of

terminology researchers use when describing technology in language learning, optimizing the inclusiveness of the search results. Similarly, "learning OR learning process OR 'learning process'" was included to describe the impact of technology on both general and specific aspects of learning activities. To maintain relevance to the field of interest, the terms "ESL OR EFL OR English" limited the scope of the research to focus on English language teaching and learning, relevant to the research objectives. Finally, the inclusion of “challenge OR difficult OR strategies OR strategy OR tackle” encouraged a search that included barriers encountered when integrating technology or pedagogical approaches or solutions proposed by researchers, thus encouraging the review to describe not only potential benefits but also practical problems and strategies in ESL/EFL contexts. The compilation of keywords carried out is aimed at obtaining more extensive research but focused on the research objectives.

Searched articles were exported to Mendeley to check for duplication and title linkage. Based on these steps, articles that did not fit the topic of the role of technology in English teaching and learning were eliminated. After that, the screening focused on the titles and abstracts for further review by aligning them with the research questions. The selected full-text articles will be the data to be analyzed in the findings.

The initial articles retrieved amounted to 321 papers from Scopus. After filtering and removing duplicates, 5 articles were eliminated. During the screening stage, 214 articles were excluded as they did not match the research focus: 13 were non-ESL/EFL, 6 were non-English language, 164 did not focus on the learning and teaching process, and 31 only focused on lesson planning. This left 102 articles considered relevant for further retrieval. From these, 21 papers could not be retrieved due to accessibility issues. The remaining 81 articles were assessed for eligibility. At this stage, 64 articles were excluded because 43 were not related to ESL/EFL and 21 did not focus on the learning and teaching process. Finally, 17 studies met the inclusion criteria and were selected for review. The detailed process of searching and selecting articles is illustrated in Figure 1.

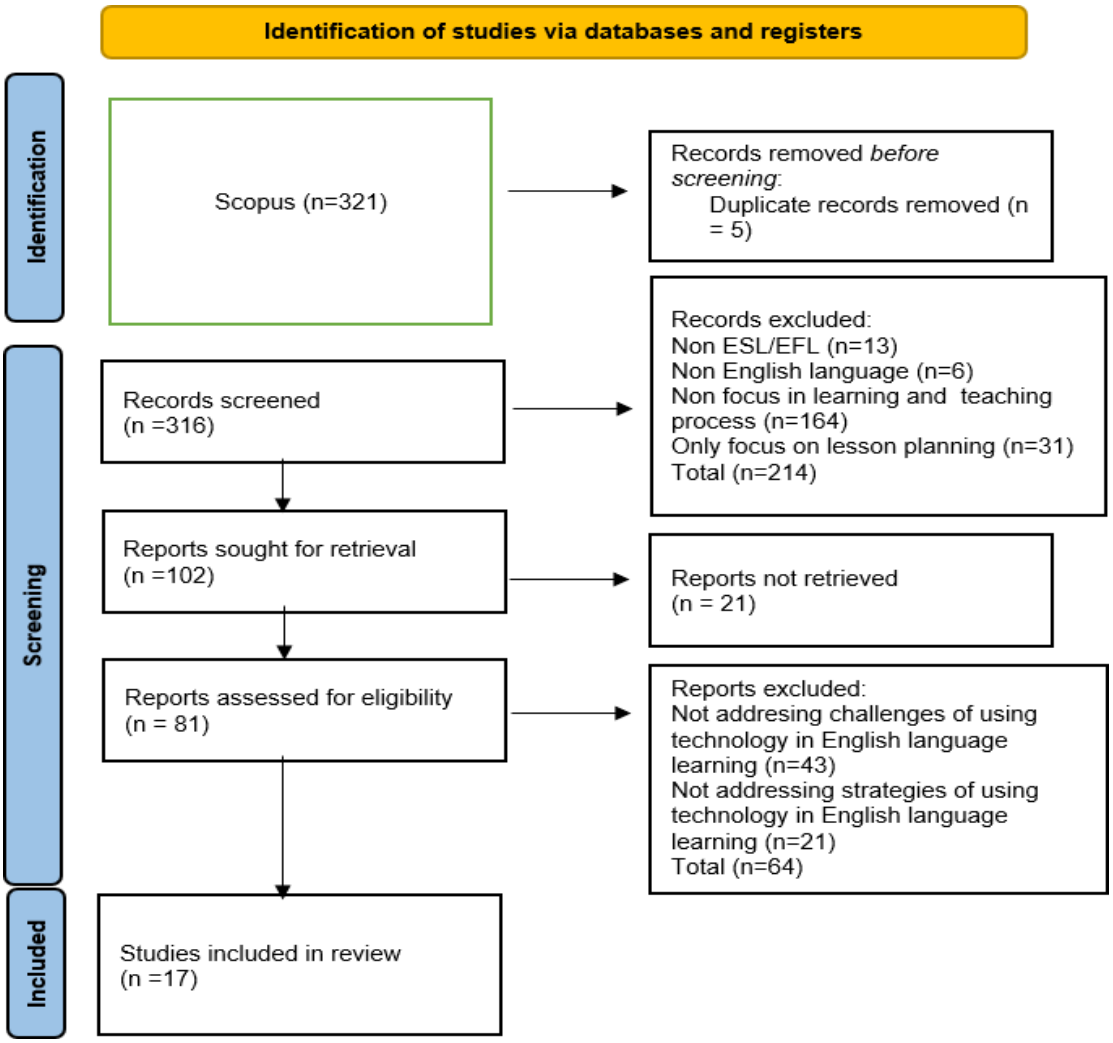

Figure 1. ***Flowchart of the Searching and Selecting Procedure***

Identification

The identification process began after downloading a total of 321 articles from Scopus. All articles were then exported and organized into Mendeley, which serves as a reference management tool to facilitate the screening process. At this stage, the articles were carefully checked to ensure that the number of articles exported matched the initial data downloaded from Scopus to ensure accuracy. Next, duplicate checks were performed automatically and manually in Mendeley to detect repeated entries. From this process, it was found that 5 articles were duplicates and were therefore deleted. After this identification stage, 316 articles were retained and proceeded to the screening stage.

Initial Screening

In the second step, 316 articles were carefully reviewed during the screening process to ensure compliance with the inclusion and exclusion criteria. At this stage, Mendeley was still used to reading titles and abstracts, making the process more systematic and organized. To support this, Google Docs was also used as a tool for recording and

marking exclusion criteria, allowing researchers to document the decision-making process for each article. As a result of this screening, 214 articles were excluded for several reasons: 13 articles were not related to ESL/EFL, 6 were written in languages other than English, 164 did not focus on the teaching and learning process, and 31 focused only on lesson planning without discussing broader pedagogical aspects. After this stage, 102 articles remained and were considered eligible to proceed to the next stage of the retrieval process.

Retrieval

In the next step, the number of reports searched for download reached 102 articles. At this stage, researchers tried to access and download the full text of selected articles using Mendeley and Google Scholar as the main tools for checking availability and managing references. However, not all articles could be downloaded due to access limitations. From 102 articles, 21 could not be downloaded due to limited access or unavailability from the source.

Eligibility Assessment

Eligibility was assessed by applying strict inclusion criteria to 81 full-text articles. At this stage, the articles were systematically reviewed using two predefined criteria: (1) whether the study explicitly examined the challenges faced by educators and students in integrating technology into the English learning process, and (2) whether it discussed strategies that have been proposed or implemented to address these challenges and improve educational delivery. Each article was examined for its research focus, depth of analysis, and alignment with the objectives of this review. Based on this in-depth evaluation, 64 articles were excluded from the review. Specifically, 43 articles were removed because they did not directly address ESL/EFL contexts, instead focusing on general education settings or other subject areas without clear relevance to English language learning. The remaining 21 articles were excluded because, although they mentioned the use of technology in education, they did not sufficiently address the core focus of this review. These studies either discussed technology use in a descriptive or general manner without explicitly identifying the challenges faced by educators and students, or they emphasized technological tools without analyzing the strategies proposed or implemented to overcome integration challenges and improve educational delivery in the English learning process. As aresult, these articles were considered misaligned with the research questions and were not included in the final synthesis.

Data Analysis

The data analysis process was initiated by organizing and documenting information from 17 selected articles, which were used as the primary data sources. This process was carried out using a structured table created in Google Docs, allowing for

collaborative, flexible, and easily accessible data management. Key information from each article was systematically recorded across several columns: Data, Source, Category, Code, and Comment. This process aimed to facilitate grouping according to categories that would be used to answer the research questions.

In this process, data indicating that there are challenges for teachers in integrating technology into English language learning is entered into the data column, then categorized as "Teacher-Centered Perspective of challenges" with the code TCPC#1. The determination of categories into codes such as TCPC#1, SCPC#1, SO#1 and so on is determined using the initial letters of the category, which facilitates interpretation and searching. These codes are also used to find patterns and group similar ideas. For example, codes SCPC#1 to SCPC#4 are categorized as "Students' centered perspective of Challenges" because several articles mention that "students face challenges in integrating technology into English language learning," which leads to the conclusion that the essence of these statements is challenges; therefore, the use of "Students' centered perspective of Challenges" becomes SCPC#1-SCPC#4. Not only for the SCPC codes, but the entire coding process was carried out using a similar pattern.

The comment column in the analysis table serves to record and build logical justifications regarding the relevance of data findings to the research objectives. For example, there is a statement, "There are challenges, including how to make students use social media for learning and how to balance personal and academic lives." This statement is then linked to the research questions in this article. From the article excerpt, a comment can be made regarding the reason for selecting this data: "This finding points to a crucial reality: while social media offers big learning opportunities, it's not naturally an academic space for most students." This comment is written logically, namely that the use of technology does offer opportunities for learning, but it poses challenges for students who find it difficult to distinguish between their personal and academic lives.

The next step was to combine these categories into main themes that were in line with the research questions. These findings were then categorized into two main themes. The first theme, "Challenges of navigating technology in English language learning processes," was divided into two sub-themes based on the participants' perspectives: challenges from the teachers' perspective and challenges from the students' perspective. The second theme, "Strategies for Using Technology in the English Language Learning Process," was also divided into two sub-themes, highlighting the strategies used by teachers and students in integrating technology into the English language learning process. These themes form the analytical framework for the findings section, ensuring that the analysis is rigorous and based on peer-reviewed studies. Determining these main themes is not simply a matter of naming them, but aims to combine all these categories into a complete answer to the research question. Here is an example of a table in the data analysis process:

Table 3. ***Example of Data Analysis***

Data	Source	Category	Code	Comment
The study does not specifically mention challenges, but implies that there is room for improvement, as none of the statements have mean scores above 4.00, which would indicate a strong agreement. The teacher-respondents may have some concerns or challenges that prevent them from fully embracing the use of technology in this context.	P1	Teacher-Centered Perspective of challenges	TCPC#1	This research does not directly show the strategies and challenges faced by teachers in using technology. However, it slightly implies that there is room for improvement in the use of technology in learning.
The article identifies key challenges in online English learning, such as variability in technology self-efficacy, sustaining learner motivation, reliance on self-reported data, limitations of a cross-sectional design, and limited generalizability.	P2	Students' centered perspective Challenges	SCPC#1	The challenges presented in this article include the varying skills of students in using technology, students possibly losing interest, dishonesty, and inaccuracies in student assessments.

This systematic approach enhanced the clarity and transparency of the analysis by demonstrating how the raw data from the articles were carefully examined, coded, grouped into categories, and ultimately synthesized into key themes that address the research questions.

FINDINGS AND DISCUSSION

The findings of this systematic review show that although digital technology has great potential to improve the English teaching and learning experience, teachers and students still face various challenges in its implementation. Chief among these are limited access to devices and stable internet, insufficient digital literacy, and difficulties in maintaining engagement in virtual environments. Technical issues and the need for continuous professional development also hinder the seamless integration of technology in English language classrooms. In response, educators and learners have adopted a variety of adaptive strategies. Teachers have embraced blended learning models, opted for user-friendly platforms, and actively participated in professional development programs. Meanwhile, students have formed peer support networks to troubleshoot digital challenges and enhance collaborative learning online. These findings reinforce that effective technology integration requires not only access to tools but also structured support, sustained innovation, and pedagogical alignment.

To provide a clearer overview of these findings, Table 4 presents a thematic summary of the challenges and strategies in technology integration in English language learning, synthesized from teacher and student perspectives:

Table 4. ***Thematic Summary***

Main Theme	Sub-Theme	Key Issues	Code/Sources
Challenges of Navigating Technology in English Language Learning	Teachers's Challenges	Limited ICT skills, lack of support, time constraints, unfamiliarity with tools, resistance to change, and concerns about readiness and misuse.	(TCPC#2); (TCPC#6)
	Students's Challenges	Low self-efficacy, limited device and internet access, infrastructure gaps, and difficulty balancing personal and academic boundaries.	(SCPC#1); (SCPC#3); (SCPC#4)
Strategies of Navigating Technology in English Language Learning	Teachers' Strategies	Blended learning adoption, professional development, peer collaboration, reflective teaching, and communities of practice.	(TCS#3)
	Students' Strategies	Blended learning adoption, professional development, peer collaboration, reflective teaching, and communities of practice.	(ODIT#1)

Challenges of navigating technology in English language learning processes

Analysis of the selected articles revealed both internal and external challenges experienced by teachers and students during technology adoption. From the teachers' perspective, primary obstacles include insufficient ICT skills, lack of administrative and technical support, and concerns about digital tool readiness and potential misuse.

> "However, the limitations of digital tools, readiness, and the potential misuse of the technology..." (TCPC#2)

> "The lack of knowledge and competency in technological skills holds back teachers from utilising digital technologies to improve teaching and learning, and also student participation" (TCPC#2)

> "...teachers hardly use [technological aids] for reasons associated with time constraints, teachers' lack of familiarity with sophisticated educational technology, teachers' training and cultural backgrounds, and teachers' hidden agendas, perceptions, and philosophies about ELT…" (TCPC#6)

From teachers' perspectives, integrating technology into the English language learning process presents considerable challenges. These include limited knowledge and competency in technological skills, insufficient familiarity with advancededucational tools, time constraints, and cultural or pedagogical resistance. Additionally, concerns about the readiness and potential misuse of digital tools further hinder effective implementation in the classroom. These obstacles hinder teachers' ability to effectively adopt and sustain technology-enhanced learning practices (Tondeur et al, 2017).

After examining the challenges faced by teacher in navigating technology in English learning process, these findings also reveal the challenges faced by students in navigating technology in English language learning process.

> "...low self-efficacy may hinder learners' willingness and capacity to fully leverage online learning opportunities..." (SCPC#1)

> "Infrastructure challenges, especially in rural areas, often reflect wider systemic issues, from government policy to local funding constraints." (SCPC#3)

> "The use of these tools in the classroom, however, raises the question of how well students can balance their personal and academic lives." (SCPC#4)

Students often face significant challenges in the integration of technology in their English language learning, primarily due to low self-efficacy, infrastructural limitations, and difficulties in managing personal and academic boundaries. Low self-efficacy can diminish students' confidence and willingness to engage with digital tools effectively. Infrastructure challenges—particularly in rural or under-resourced areas—reflect broader systemic inequities that limit access to consistent and high-quality online learning. Moreover, the blending of social and academic spaces through technology raises concerns about students' ability to maintain focus, discipline, and balance in their learning routines. Additionally, inadequate infrastructure, particularly in rural or under-resourced areas, exacerbates inequities in access and participation, highlighting broader systemic issues tied to policy and funding (Alqurashi, 2019).

Strategies of navigating technology in English language learning processes

These findings emphasize the importance of cultivating a supportive professional culture through strong leadership, ongoing training, and collaborative networks. As Sangrà and González-Sanmamed (2010) argue, such environments enable educators to develop confidence and innovation in their teaching practices. Similarly, Al-Habsi et al. (2021) note that communities of practice significantly enhance reflective capabilities and pedagogical adaptability.

> "Teamwork allows learners to collaborate, share ideas, and learn from one another, improving their necessary thinking skills and promoting self-directed learning." (ODIT#1)

> "...engaging in a peer collaboration and knowledge sharing experience promoted and enhanced the participant-teachers' critical reflective practice and helped them pay attention to the small and big pictures..." (TCS#3)

From the teachers' perspective, teamwork and peer collaboration are essential strategies in technology integration for English language learning. Collaborative environments enable learners to exchange ideas, develop critical thinking skills, and foster self-directed learning. Strong leadership, continuous training, motivation, and opportunities for peer collaboration enhance teachers' confidence, reflective practice, and ability to effectively incorporate ICT into classroom instruction (Al-Habsi et al,

2021).

This study investigates the challenges and strategies in navigating technology within the English language learning process. The research findings reveal important insights into the complexity of effectively integrating technology into English educational practice. From the teachers' perspective, although technology offers significant opportunities to enhance teaching and learning, substantial barriers remain. Teachers often face limitations in digital literacy, lack of administrative and technical support, and difficulties adapting to the rapid evolution of English educational technology. Consistent with previous findings, Tondeur et al. (2017) emphasize that limited ICT skills and inadequate support structures restrict teachers' ability to maximize the use of technology. This highlights the need for targeted professional development programs and institutional support systems to help teachers improve their digital competencies and manage technological challenges efficiently (Tondeur et al., 2017; Koehler, Mishra, & Cain, 2013). Students likewise face significant barriers, especially low self-efficacy in using digital platforms, concerns about academic integrity, and infrastructure gaps, particularly in rural areas. Alqurashi (2019) highlights that student confidence and access are key factors influencing theirengagement with online learning. The emergence of new learning modes demands that students not only possess technical abilities but also become ethically responsible digital citizens, which current educational frameworks must address more comprehensively.

The digital transformation identified in these findings cannot be separated from the context of systemic change towards Education 4.0. This revolution demands a collaborative, data-driven, and intelligent technology-integrated learning approach. In this context, teachers and students are not only required to use technology, but also to think digitally, adapting their mindsets and learning strategies according to the complexity of the new learning ecosystem (Makrides, 2019; Abedi, 2024). Therefore, challenges such as low digital literacy, lack of continuous training, and limited infrastructure are not just technical obstacles, but rather a reflection of the readiness of the education system to face a more advanced phase of educational evolution (Joseph et al., 2024; Taşdere et al., 2024). These findings also show that although many institutions have adopted online learning technology, the adoption process is still mechanical and has not touched on deep pedagogical transformation (Mishra & Koehler, 2008; Mishra et al., 2011). Some teachers still use technology only as a tool, not as a means to build student-centered learning (Mishra & Koehler, 2006; Mishra, 2018). This suggests the need for a more reflective and planned approach to the development of TPACK (Technological Pedagogical Content Knowledge) skills among educators (Koehler et al., 2011; Voogt et al., 2012; Mishra & Koehler, 2006; Koehler, Mishra, & Cain, 2013). Without a deep understanding of the interactions between content, pedagogy, and technology, digital integration in learning will remain shallow and will not have a significant impact on student learning outcomes (Koehler et al., 2011; Voogt et al., 2012; Mishra & Koehler, 2019).

Despite these challenges, the study found that proactive and adaptive strategies have emerged among teachers. Building a collaborative and trusting atmosphere within schools, supported by strong leadership and ongoing professional development, was identified as a crucial factor for successful technology integration. Teachers engage in peer collaboration and reflective practices, demonstrating resilience and adaptability in overcoming obstacles. This aligns with Sangrà and González-Sanmamed (2010), who argue that creating a culture of trust and collaboration empowers teachers to innovate and experiment with digital tools. Similarly, Al-Habsi et al. (2021) show that involvement in communities of practice (CoP) significantly enhances teachers' ability to critically reflect and adjust their teaching practices. Recent studies reinforce these findings. For example, Taşdere, Işıklı, and Yıldırım (2024) emphasize that ongoing peer learning and institutional support foster stronger teacher commitment to meaningfully integrating technology into classrooms. Likewise, Abedi (2024) highlights the critical role of aligning teachers' beliefs with ICT policies through sustained professional engagement and real-world practice. This new perspective further affirms that effective technology integration is not just about access to tools, but about creating a professional environment where teachers are supported emotionally, intellectually, and practically (Mishra et al., 2019). Ultimately, successful navigation of technology in English education requires a systemic and multi-level approach-addressing both individual competencies and broader infrastructure and policy challenges (Mishra & Warr, 2021). Teachers and students must be equipped with the skills, attitudes, and resources needed to thrive in an increasingly digital educational landscape. Ongoing leadership support, professional communities, peer collaboration, and personalized learning environments emerge as essential elements for moving beyond mere technology adoption toward transformative educational practice.

These findings of this study reveal that while digital tools have greatly enhanced English language learning by promoting engagement, creativity, and collaboration, both teachers and students continue to face substantial challenges in their integration. Teachers struggle with limited digital literacy, insufficient administrative and technical support, and time constraints, whereas students encounter low self-efficacy, unstable infrastructure—especially in rural areas—and difficulty balancing personal and academic boundaries. For a practice perspective, educators respond by adopting blended learning, peer collaboration, and ongoing professional development, while students form peer networks to strengthen digital learning experiences. From a policy perspective, the findings underscore that meaningful technology integration requires institutional support, continuous training, and pedagogical transformation aligned with Education 4.0 principles. However, the synthesis also reveals a persistent gap in context-specific and long-term evidence on how such policy and practice initiatives are sustained across diverse educational settings. This holistic approach echoes findings by Ranbir (2024) and Tondeur et al. (2017), who emphasize that successful technology integration depends on developing teacher competencies and systemic infrastructure rather than focusing solely on technological access.

CONCLUSION

This systematic literature review shows the transformative potential of digital technology in English education, while also highlighting the multifaceted challenges encountered by both educators and learners. In response to the first research question, the review highlights multifaceted challenges, including limited digital literacy among teachers and students (Tondeur et al., 2017; Voogt et al., 2012), inadequate technical and administrative support, infrastructural deficits especially in under-resourced areas (Cheng & Tsai, 2013), and student concerns surrounding autonomy and academic integrity (Alqurashi, 2019). For the second research question, the findings show that teachers increasingly engage in professional learning communities (Baran et al., 2011), reflective pedagogical practices (Phillips, 2016; Porras-Hernández & Salinas-Amescua, 2013), and peer collaboration to strengthen their competencies and confidence in using digital tools, while institutional factors such as strong school leadership, inclusive policies, and access to ongoing training play a pivotal role in enabling successful transformation. The main contribution of this SLR lies in its systematic synthesis of teacher and student perspectives, offering a comprehensive understanding of how challenges and strategies intersect at individual, institutional, and policy levels within the context of Education 4.0. Ultimately, effective integration of technology in English language learning requires a comprehensive, multi-layered approach, including individual capacity-building, continuous institutional support, infrastructure development, and the cultivation of a professional culture that encourages experimentation, collaboration, and long-term pedagogical innovation (Sihanita & Tuasikal, 2024), while also highlighting the importance of continued future research in digital pedagogy to support meaningful and sustainable educational reform.

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