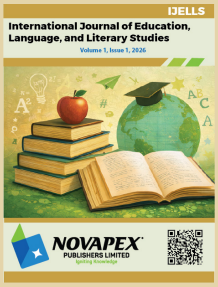

OPEN ACCESS

IJELLS

International Journal of Education, Language, and Literary Studies

REVIEW ARTICLE Section: *Language & Linguistics*

Check for updates

Published by **Novapex Publishers Ltd**, Kenya, in the *International Journal of Education, Language, and Literary Studies (IJELLS)*, Volume 1, Issue 1, 2026.

E - ISSN: *(Applied)*
P - ISSN: *(Applied)*

Article Details
Received: 11 February 2026
Revised: 27 February 2026
Accepted: 20 March 2026
Published: 21 April 2026

Conflict of Interest: The author/s declared no conflict of interest.

How to Cite:
Alharbi, K. (2026). Technology integration challenges faced by EFL teachers: A systematic literature review. *International Journal of Education, Language, and Literary Studies, 1*(1), 1-8. https://journals.novapexpublishers.com/education-literature/article/view/37

Technology integration challenges faced by EFL teachers: A systematic literature review

Khalaf Alharbi[1]
Department of English Language & Literature, College of Languages & Humanities, Qassim University, KSA
https://orcid.org/0000-0001-9820-8923
***Corresponding author's email:** *sahrbykn@qu.edu.sa*

ABSTRACT

Technology integration is a significant part of English as a Foreign Language (EFL) education; however, it faces several severe barriers to implementation on the teacher front. This systematic literature review collates evidence of the challenges faced by EFL teachers when embedding technology into teaching practice. Using structured queries, comprehensive searches of multiple databases were conducted in accordance with the PRISMA 2020 guidelines. Of the 795 initial records, 506 unique papers were identified, and only 500 were screened. Of these, 297 were identified in the abstract screening, and 288 peer-reviewed Q1/Q2 journal articles were included in the final synthesis following full-text screening. Four categories of challenges emerged from thematic analysis: (1) technical and infrastructure issues, such as lack of devices, limited internet access, and insufficient facilities; (2) teacher skill and training limitations, including low levels of digital literacy or different professional development needs; (3) institutional and systemic constraints, such as no technical support, unoptimized time for TLs to reflect on implementing ICT in lesson plans, or lack of policy and (4) pedagogical and contextual challenges for selecting tools that engage students used to gamification in their everyday context with no recognition of TLs engaged pedagogically. Rural teachers, in particular, face exhausting challenges due to stark differences between urban and rural settings regarding severe infrastructure limitations. The results suggest that high-quality technology integration is only achievable through broad and holistic coordination across multiple levels of intervention targeted at different components of ed-tech adoption, regardless of the context.

KEYWORDS: EFL teachers, technology integration, digital tools, barriers, challenges, systematic review, PRISMA

Introduction

The integration of technology into English as a Foreign Language (EFL) teaching has progressed from an optional supplement to formal language education in the current context. Digital tools, learning management systems, and multimedia resources provide unparalleled opportunities for access to authentic language exposure, interactive learning, and individualized teaching (Anazco et al., 2025; Alvarez et al., 2025; Beaven et al., 2010). This shift, propelled by the COVID-19 pandemic, required educational continuity, thus making technology integration imperative (Ryn et al., 2020; Cao et al., 2024). However, EFL teachers globally encounter considerable problems regarding the seamless integration of digital tools into classroom practice (Hedayati et al., 2014; Geng et al., 2025; Muslem et al., 2018).

The integration of technology is directly relevant to student learning outcomes, teacher professional development, and institutional effectiveness (Liang, 2021; Alvarez et al., 2025). Effective integration better engages students, improves access to authentic materials, and cultivates the digital literacy skills required to communicate within the 21s century (Singh, 2018; Limbong et al., 2024; Joshi et al., 2024). In contrast, the lack of integration of technology and information can exacerbate achievement gaps, leaving institutions ill-equipped to prepare students for digital workspaces (Yucedal, 2023; Patty et al., 2023).

Aspects of EFL teaching could pose their own, more singular difficulties worthy of further investigation. Recent findings suggest that language teaching requires specific pedagogical practices and authentic communication opportunities, which generic educational technologies may not provide (Boulter, 2007; Raman et al., 2014). In addition, EFL contexts differ enormously between countries, educational levels, and institutional settings, bringing about context-sensitive barriers that need context-specific solutions (Ogalo et al., 2022; Partida et al., 2023).

Although the literature on the challenges surrounding technology integration in EFL teaching is receiving increasing research attention, it remains scattered. Although individual studies detail certain obstacles (Guzman et al., 2019; Soifah et al., 2021; Wang, 2014), a systematic review has not been conducted recently to compile this evidence into an overall perspective of potentially universal difficulties encountered by EFL teachers. This systematic review fills this void by synthesizing evidence from 288 peer-reviewed Q1/Q2 journal articles to answer three research questions: (1) What are the main technology barriers faced by EFL teachers in integrating digital tools? (2) How do EFL teachers experience TC challenges in different educational contexts? In our case, this could be expressed in the form of (3) Which institutional, pedagogical and personal obstacles do EFL teachers have to face when using educational technology?

Method

A systematic literature review according to PRISMA 2020 to increase transparency, rigor and reproducibility (Page et al., 2021) The review protocol was established this way to systematically identify, screen and synthesize evidence regarding the challenges of integrating technology into teaching in EFL contexts.

Search Strategy

A systematic database search strategy was devised to locate relevant articles in the published peer-reviewed literature. Searches were performed on SciSpace, SciSpace Full Text, and Google Scholar. Boolean search strings that integrated key words related to English as a Foreign Language (EFL) teaching, technology integration, and challenges Studies published in peer-reviewed, English-language journals as recently as April 2026, with no date restrictions on searches. Thirteen separate queries were made against the databases, the results of which were then merged and de-duplicated.

Eligibility Criteria

They were included if they (1) referred to EFL/ESL teaching contexts; (2) dealt with an aspect of technology integration, digital tools, or ICT implementation; (3) studied teacher-related challenges or barriers; (4) were published in a peer-reviewed Q1/Q2 journal; (5) employed any type of empirical research methodology; and (6) were published in English. Studies were also excluded if they only considered student perspectives, examined non-EFL contexts, were theoretical (non-empirical), published below Q2 of the Journal Citation Reports list of all journals, discussed only technology efficacy and not implementation challenges, or were not published in a journal.

Screening Process

It employed a four-stage methodology for the procurement screening process. The initial search yielded 795 records. This retention process left 506 unique papers, which were further trimmed down to 500 using the data with respect to their first ranking relevance. For title and abstract screening, a relevance scoring threshold of ≥ 4.0 was applied, which led to 297 papers being included for full-text screening. For full-text screening, a more conservative cutoff of >=4.5 was used to identify articles for final inclusion (with specific reference to journal quality [Q1/Q2 ranking], methodological rigor, and relevance to the research questions). A total of 288 studies were included in the final synthesis of the results.

Data Extraction and Synthesis

We developed a pre-standardized data extraction form to collect bibliographic details, study characteristics, primary barriers identified, main results obtained, solutions proposed, and journal quality indicators. Thematic analysis was used to identify similarities between the studies in the data synthesis. The primary barriers were inductively coded and divided into four broad themes: technical and infrastructure barriers, teacher competency and training gaps, institutional/systemic barriers, and pedagogical and contextual issues.

Results

Study Selection and Characteristics

The systematic search resulted in 288 peer-reviewed Q1/Q2 journal articles included for further examination. The studies covered varied geographical contexts in Asia (China, Iran, Indonesia, and Pakistan), Latin America (Ecuador and Mexico), Europe, and Africa (Kenya). Various educational contexts, ranging from primary and secondary schools to universities and language institutes in terms of methodology, studies used quantitative surveys, qualitative interviews and observations, or mixed methods.

Thematic Synthesis of Gaps Related to Technology Integration

Four Challenge Categories119 themed analysis revealed four key barrier iterations: (1) technical and IT infrastructure barriers, (2) teacher competency and training gap, (3) institutional and systemic blockages, and (4) curricular/pedagogical-contextual barriers.

Technical and Infrastructure Barriers:

The most common challenges reported were technical and infrastructure barriers. A lack of access to devices and equipment was identified as the most frequently cited barrier (Anazco et al., 2025; Hedayati et al., 2014; Joshi et al., 2024; Soifah et al., 2021; Abbasi et al. Of the teachers surveyed in Ecuador, 54% stated that they thought device access was a significant challenge (Anazco et al., 2025), especially for rural and under-resourced schools (Abbasi et al., 2021; Champa & Alam, 2020). The third major barrier was a lack of internet connection (Anazco et al., 2025; Joshi et al., 2024; Partida et al., 2023; Abbasi et al., 2021; Champa & Alam, 2020). Limited and unstable Internet access in some areas kept teachers

away from using technology, with rural areas enduring even worse restrictions (Abbasi et al., 2021). The lessons were frustrated and discouraged the use of technology because of technical failures, outdated software, and frequent technical problems (Champa & Alam, 2020; Joshi et al., 2024; Hedayati et al., 2014). The same was true for inadequate infrastructure, including physical classroom spaces, where the features of classrooms were not accommodating to technology integration (Hedayati et al., 2014; Soifah et al.

Teacher Competency and Training Gaps.

The second broader category involved teacher competency and training deficiencies. The lack of digital literacy and limited digital skills are commonly cited as critical barriers (Anazco et al., 2025; Alvarez et al., 2025; Hedayati et al., 2014; Joshi et al., 2024; Raman et al., 2014; Fathi et al., 2023). In Ecuador, a significant issue reported by 46% of teachers was the shortage of digital skills (Anazco et al., 2025). Inadequate teacher training programs was noted as a severe system level barrier (Alvarez et al., 2025; Beaven et al., 2010; Hedayati et al., 2014; Joshi et al. The findings indicated that training programs were not sufficiently preparing teachers to integrate technology, being theoretical as opposed to practical (Fathi et al., 2023), and this was a finding consistent throughout all five cohorts. The added complexity of educational technologies has made things difficult, with numerous platforms being labeled inaccessible and requiring steep learning curves (Alvarez et al., 2025; Joshi et al., 2024). In another report, 38% of teachers expressed difficulty in choosing pedagogically valuable tools (Anazco et al., 2025), and there was vagueness about how to use technology meaningfully for language learning (Hedayati et al., 2014; Raman et al., 2014; Wang, 2014).

Institutional and Systemic Obstacles.

The third major barrier is institutional and systemic. Technical support has been regarded as a significant institutional obstacle (Alvarez et al., 2025; Hedayati et al., 2014; Joshi et al., 2024; Soifah et al., 2021; Fathi et al., 2023). Time was a ubiquitous structural barrier, and teachers complained that there was not enough time to learn to use new technologies and prepare technology-enhanced lessons (Hedayati et al., 2014; Joshi et al., 2024; Yucedal, 2023; Soifah et al., 2021). Unclear policies and strategic plans at the institutional level create uncertainty and a lack of direction (Anazco et al., 2025; Hedayati et al., 2014; Joshi et al., 2024). Root challenges include insufficient funding and the redistribution of resources (Hedayati et al., 2014; Joshi et al., 2024; Soifah et al., 2021; Abbasi et al., 2021). Inflexible curriculum mandates and high-stakes exams aimed at classic content create minimal opportunities for technology-infused teaching (Hedayati et al., 2014; Yucedal, 2023; Soifah et al., 2021).

Pedagogical and Contextual Challenges.

Pedagogical and contextual challenges were the fourth category of challenges. One prominent pedagogical issue that arose was the struggle to find appropriate language teaching tools (Anazco et al., 2025; Fathi et al., 2014; Wang al., 2014; Wang al., 2023). The growth of educational technologies has made choice overwhelming, and there have been doubts about tools that help teachers identify genuinely effective tools through theory-based definitions (Fathi et al., 2023), questioning whether digital tools help improve speaking and writing skills. The context of challenges relating to students is being unfamiliar with educational technologies and not interested in learning through technology-mediated methodologies (Champa & Alam, 2024; Fathi et al., 2023; Joshi et al., 2020) For instance, teachers who were more used to a traditional method of teaching were challenged by the fear of change (Hedayati et al., 2014; Joshi et al., 2024; Yucedal, 2023). Urban–rural gaps were stark; in the Ecuador study, urban and rural teachers accessed technology differently, chi-squared (1, N = 50) = 6.72, p=. 010 (Anazco et al.2017; Abbasi et al., 2021). Recent studies (Maleki, 2026) have also raised ethical issues related to artificial intelligence, such as the violation of academic integrity and fairness in accessibility.

Proposed Solutions

The included studies proposed various solutions. Results: While high-level investment in hardware, software, and connectivity infrastructure was advised for technical and infrastructure obstacles (Anazco et al., 2025; Hedayati et al., 2014); [2], Joshi et al. Studies across the board have recommended long term, authentically practical continuous professional development (CPD) programs that are contextually based on teachers' needs to fill teacher competency gaps (Anazco et al., 2025; Alvarez et al., 2025; Beaven et al., 2010; Hedayati et al., 2014; Joshi et al., 2024; Raman et al.; Fathi & A. Rehman, 2023). In the case of institutional barriers, clear institutional policies and strategic plans have been suggested (Anazco et al., 2025; Hedayati et al., 2014; Joshi et al., 2024). Many studies have stressed that multilevel, holistic approaches are more likely to succeed by targeting underlying challenges at the technical, human capacity, institutional, and pedagogical levels simultaneously (Anazco et al., 2025; Hedayati et al., 2014; Joshi et al., 2024).

Discussion

Utilizing data from288 peer-reviewed Q1/Q2 journals, this systematic review synthesizes evidence on the barriers to technology integration facing EFL teachers around the globe. The results demonstrate the complexity, interrelatedness, and contextual specificity of these challenges, necessitating holistic interventions.

Principal Findings

These four challenge categories correlate with and build on existing theoretical frameworks for technology integration in education. The existence of technical and infrastructure barriers (especially for developing countries and rural areas) reiterates the digital divide in the availability of educational technology (Anazco et al., 2025; Abbasi et al., 2021). This contradicts techno-optimistic accounts, which often assume that the extent of technology integration is simply a function of teachers will. Teacher competency and training gaps are so widespread that the entire system behind teacher education and professional development systems is simply not working; training programs tend to be theoretical rather than practical, generic rather than contextualized, and one-time events (Beaven et al., 2010; Hedayati et al., 2014; Fathi et al., 2023). These institutional and systemic hurdles pinpoint how organizational forms, policies, and governance can either facilitate or inhibit technological assimilation (Hedayati et al., 2014; Joshi et al., 2024; Yucedal, 2023; Soifah et al., 2021). EFL pedagogical challenges, such as tool selection difficulties and the adequacy of technology to learn productive skills (Anazco et al., 2025; Raman et al., 2014; Fathi et al., 2023), show that language teaching has unique technology integration barriers that are not well captured in generic educational technology frameworks.

Implications for Practice and Policy

The review emphasizes the need for teachers to acquire not only technical skills but also deep pedagogical knowledge to effectively use instructional technology. The review also has implications for teacher educators by highlighting that training programs need to be redesigned to be sustained, practice-based, collaborative, and contextualized (Beaven et al., 2010; Hedayati et al., 2014; Fathi et al., 2023). This review emphasizes that holistic support systems —by means of infrastructure, continuous technical support, learning time dedicated to teachers or staff on how to use technology effectively in the classroom, clear policies about digital integration (Hedayati et al., 2014; Joshi et al., 2024), and incentive structures around technology use (Soifah et al., 2021)— are essential for school administrators. The results further highlight the necessity for policymakers to provide significant and continued funding for educational technology infrastructure, especially in remote and low-resource areas (Anazco et al., 2025; Abbasi et al., 2021).

Limitations

This review has some limitations. It was restricted to peer-reviewed Q1/Q2 journal articles first, which could mean that valuable findings were missed from outside publication methods. Second, it featured only English-language publications, which might have missed research written in other languages. Third, we used a thematic synthesis approach, which involved interpretation decisions that others may have made differently. Fourth, the studies in the sample were heterogeneous in terms of methodological quality, (sample) size, and context. Fifth, the fast-changing techno-scape renders pre-2019 findings less relevant.

Future Research Directions

Several key directions for future research are proposed in this review. More longitudinal studies that explore how technology integration challenges change over time are necessary. Further research is needed to determine the efficacy of individual interventions. In the field of EFL, research should focus on new technologies and their associated issues, specifically artificial intelligence (Maleki, 2026). Research is also warranted on cases of successful technology integration and the enabling factors, as well as the interaction between the critical dimensions of educational inequity and challenges in technology integration.

Conclusion

In this systematic review of the literature, 288 peer-reviewed Q1/Q2 journal articles were synthesized to provide a holistic understanding of the technology integration challenges experienced by EFL teachers globally. The results show that these challenges are rather complex and of a technical and infrastructural nature, teachers' competences and training needs, institutional systemic issues, as well as pedagogical contextual aspects. The interconnections and context-dependence among these challenges create complicated barriers to effective technology integration; for instance, strong access may lead to complacency over training, or one may be prepared (training) but with a lack of implementation support.

The review shows that the use of technology in EFL teaching is not a matter of introducing devices and expecting teachers to make effective use of them. Integration must involve wide-ranging, multi-level interventions that implement infrastructure developments, sustained professional development, institutional policy reforms, and support mechanisms for pedagogy at the same time. Such differences between urban and rural contexts, developed and developing countries, and institutions with various scales of resource availability capture the need for equity-oriented efforts to enable educational technology to be accessed by all EFL teachers and learners. In particular, with the growing importance of digital tools in language teaching and learning, knowing how to help teachers respond to the challenges they encounter when attempting to integrate them is crucial.

References

Abbasi, M. S., Hussain, M. A., & Hussain, S. (2021). Barriers to technology integration in teaching English as a second language among English educators in Pakistan. International Journal of Learning and Earning, 11(2), 1-15. https://doi.org/10.15282/ijleal.v11i2.6775

Alvarez, M. L., Cedeno, E. R., & Zambrano, J. M. (2025). Perspectives and challenges of technology integration in English language teaching: An academic approach. Sapienza: International Journal of Interdisciplinary Studies, 6(1), Article e25869. https://doi.org/10.51798/sijis.v6i1.869

Anazco, M. E., Guevara, C. E., & Morales, D. P. (2025). La integracion de la tecnologia en la ensenanza del idioma ingles: Beneficios, herramientas y desafios en colegios y universidades ecuatorianas. Revista Veritas de Difusao Cientifica, 6(2). https://doi.org/10.61616/rvdc.v6i2.842

Beaven, A., Comas-Quinn, A., & Sawhill, B. (2010). Needs and challenges for online language teachers: The ECML project DOTS. Teaching English with Technology, 10(2), 5-20.

Boulter, A. (2007). EFL and ESL teachers' values and integrated use of technology in universities in the Asia-Pacific region. CALL-EJ Online, 8(2), 1-15.

Cao, Y., Zhang, S., & Chan, M. C. E. (2024). Challenges in promoting learner autonomy in blended learning: Perspectives from English as a foreign language teachers in China. International Journal of English Language Education, 12(2), 1-25. https://doi.org/10.5296/ijele.v12i2.22272

Champa, R. H., & Alam, M. S. (2020). Teachers' challenges in integrating ICT in EFL teaching and learning activities. International Journal of English Language Teaching, 8(3), 1-15.

Fathi, J., Alipour, F., & Saeedian, A. (2023). Exploring Iranian EFL teachers' attitudes toward the use of learning management systems in English classes. Ikala, Revista de Lenguaje y Cultura, 28(1), 17-35. https://doi.org/10.17533/udea.ikala.v28n1a02

Geng, J., Wang, X., & Zhang, L. (2025). Unearthing the potentials and challenges of technology-assisted language learning (TALL) in L2 contexts: Chinese EFL teachers' voices Porta Linguarum, 43, 229-248. https://doi.org/10.30827/portalin.vixiii.32578

Guzman, J. C. (2019). Technology integration for the professional development of English teachers. Tecne, Episteme y Didaxis: TED, 46, 139-155. https://doi.org/10.17227/TED.NUM46-10545

Hedayati, H. F., Foomani, E. M., and Khajavy, G. H. (2014). Iranian EFL teachers' perceptions of the difficulties in implementing CALL. ReCALL, 26(3), 298-314. https://doi.org/10.1017/S0958344014000172

Joshi, D. R., Khanal, J., & Poudel, P. P. (2024). Teachers' experiences and challenges in integrating ICTs in English language classrooms in rural schools in Nepal. Journal of NELTA Gandaki, 7(1-2), 33-46. https://doi.org/10.3126/jong.v7i1-2.70183

Liang, J. (2021). University teachers' technology integration in teaching English as a foreign language: Evidence from a case study in mainland China. SN Social Sciences, 1(8), 1-22. https://doi.org/10.1007/S43545-021-00223-5

Limbong, E., Simanjuntak, D. C., & Herman, H. (2024). Bridging the gap: The reality of digital technology integration by Indonesian pre-service EFL teachers. Script Journal: Journal of Linguistic and English Teaching, 9(1), 1-15. https://doi.org/10.24903/sj.v9i1.1524

Maleki, A. (2026). Challenges of integrating generative AI into online formative assessments in EFL contexts. Computers in Human Behavior Reports. https://doi.org/10.1016/j.chbr.2026.100934

Muslem, A., Yusuf, Y. Q., & Juliana, R. (2018). Perceptions and barriers to ICT use among English teachers in Indonesia. Teaching English with Technology, 18(1), 3-23.

Ogalo, H. S., Wawire, B. A., & Odhiambo, R. O. (2022). Assessment of teachers' technological and pedagogical knowledge of integrating ICT in teaching English in secondary schools in Nairobi County, Kenya. Scholars Journal of Arts, Humanities and Social Sciences, 10(1), 14-23. https://doi.org/10.36347/sjahss.2022.v10i01.003

Page, M. J., & McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., & Moher,

D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. BMJ, 372, Article n71. https://doi.org/10.1136/bmj.n71

Partida, Y. M., Zavala, M. E. R., & Pena, A. P. (2023). Percepciones docentes sobre los obstaculos para integrar las tecnologias a la ensenanza del ingles. CPU-e, Revista de Investigacion Educativa, 36, 31-59. https://doi.org/10.25009/cpue.v0i36.2839

Patty, R., Tuapattinaya, J. M. I., & Sopacua, J. (2023). Teachers' strategies and challenges in teaching online speaking activities. Celtic: A Journal of Culture, English Language Teaching, Literature and Linguistics, 10(2), 264-278. https://doi.org/10.22219/celtic.v10i2.25494

Raman, K., Yamat, H., & Don, Z. M. (2014). Barriers teachers face in integrating ICT during English lessons: A case study. Malaysian Online Journal of Educational Technology, 2(3), 11-19.

Ryn, M. Z., Sandaran, S. C., & Embi, M. A. (2020). Teachers' practices and perceptions of the use of ICT in ELT classrooms in the pre-Covid 19 pandemic era and suggestions for the 'new normal Language Studies in Practice, 7(1), 1-9. https://doi.org/10.11113/LSPI.V7N1.100

Singh, D. (2018). Exploring the utilization of technology in teaching English: Practices and impediments. Journal of NELTA, 23(1-2), 78-92. https://doi.org/10.3126/NELTA.V23I1-2.23360

Soifah, S., Poedjiastutie, D., & Hidayati, M. (2021). Unlocking digital literacy practices of EFL teachers. Journal of Physics: Conference Series, 1823(1), Article 012030. https://doi.org/10.1088/1742-6596/1823/1/012030

Wang, Y. (2014). The current practice of integrating information communication technology into English teaching and the emotions involved in blended learning. Turkish Online Journal of Educational Technology, 13(3), 188-201.

Yucedal, H. (2023). Integration of Web 2.0 tools in EFL classes: Barriers and solutions. Revista Amazonia Investiga, 12(63), 101-112. https://doi.org/10.34069/ai/2023.63.03.10